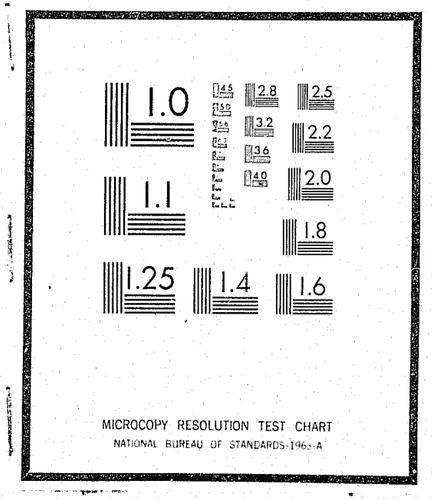

CRIME/ENVIRONMENT TARGETS: A CPTED PLANNING DOCUMENT

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ABSTRACT

"Crime/Environment Targets" provides an analysis of available crime statistics in the residential, commercial, schools, and transportation environments. It was prepared to guide selection of demonstration sites for implementation of Crime Prevention Through Environmental Design (CPTED) strategies under a program conducted by a consortium headed by Westinghouse Electric Corporation and sponsored by the National Institute of Law Enforcement and Criminal Justice (NILECJ), the research arm of the Law Enforcement Assistance Administration (LEAA). As such, it is intended primarily as an internal Program document and not as a definitive review and analysis of crime as it exists in the Nation.

Data supporting the comparative analysis is drawn from five sources: The Uniform Crime Reports, National Crime Panel Surveys, various nationally oriented crime surveys, analytic studies, and demographic surveys. Trends are traced and patterns relating crime to specific subenvironments identified. Subenvironments identified as having significant crime problems are then examined using crime, environment, and CPTED Program-related criteria to identify those where the combination of crime level and environment characteristics were such that they warranted consideration as demonstration sites under the CPTED program.

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PREFACE

On May 6, 1974, the National Institute of Law Enforcement and Criminal Justice, Law Enforcement Assistance Administration, awarded the Westinghouse Electric Corporation a two-year contract to establish a program on Crime Prevention Through Environmental Design (CPTED). This document, initially written by the CPTED Research Support team during the first six weeks of the CPTED Program, contains background information concerning the levels, trends, and patterns of crimes existent in the four major environments (i.e., residential, commercial, school, and transportation) that were designated by the CPTED Program for demonstration consideration. The document, relying principally on published data, provided a basis for the selection of particular crimes and subenvironments for CPTED demonstration purposes. It is intended primarily as an internal Program document and not as a definitive review and analysis of crime as it exists in the Nation.

Specifically, a draft version of this document served as a basis for the CPTED Program Workshop discussion, held in July 1974, which resulted in the identification of the four subenvironments currently targeted for CPTED demonstrations. A second Program Workshop, held in March 1975, reviewed and concurred with the identified targets. The draft report has been edited for further consistency and clarity; however, time references within the text and the data available allude to the period during which the document was originally compiled. Source materials for this document are identified and summarized in a separate document, "CPTED Annotated Bibliography." Another document, "Elements of CPTED," discusses the framework and related concepts and strategies.

This document was prepared while two of the authors (J.M. Tien and T.A. Reppeto) were associated with Urban Systems Research & Engineering, Inc., Cambridge, Massachusetts.

The present document has benefitted from the review given the original document at the July Program Workshop by individuals from several organizations, including: Dr. R. Rau, Dr. F. Heinzelmann, and Ms. L. Mock of the National Institute of Law Enforcement and Criminal Justice; Mr. R.A. Carlston, Mr. E.J. Pesce, and Mr. H.C. Gossard of the Westinghouse Electric Corporation; Mr. W.A. Wiles of Barton-Aschman Associates; Dr. S.I. Gass of Mathematica, Inc.; Captain J. Delaney of the Mass Transit Unit, Chicago Police Department; and Mr. J. Grealey, President of the National Association of School Security Directors.

Finally, several organizations are acknowledged; their hospitality and cooperation were of particular assistance to the Research Support team in the limited data collection efforts that were undertaken. The National Criminal Justice Information and Statistics Service of the Law Enforcement Assistance Administration (Dr. C. Kinderman and Dr. A. Turner) made available preliminary results of the 1973 National Crime Panel surveys, which data contributed to the preparation of the overview, residential and commercial chapters of this document. The National Association of School Security Directors (Mr. J. Grealey) provided preliminary data collected by its recent survey of crime in the public schools, and the American Transit Association (Mr. J. Schnell) furnished the raw data collected by its 1972-1973 survey of crimes in the urban mass transit system.

SUMMARY

The purpose of this document is to compile up-to-date and nationwide information regarding the levels (in terms of both severity and fear-producing measures), trends, and patterns of crimes existent in the four environments of current CPTED concern (i.e., the residential, commercial, school, and transportation environments). Through systematic and comparative analysis of this information -- based upon relevant crime-, environment-, and Program-related criteria -- the document affords a basis for selecting potential crime/environment targets that merit further consideration for demonstration purposes under the current CPTED Program. CPTED demonstrations are designed to impact the incidence and engendered fear of predatory, stranger-to-stranger crimes of opportunity, typified by such crimes as robbery, burglary, and assault. Strategically, CPTED would reduce these crimes through the proper design *and* effective use of physical space (i.e., built environment).

The analysis presented in this document is based on available data from a variety of sources. Since crime statistics and criminological analyses have not previously been calibrated with environmental modes and submodes, the quality and quantity of the available information are deficient in some areas. Therefore, the material contained herein is best viewed as a rough guide rather than a definitive formulation. As new and more pertinent data become available, the material could be refined and further developed.

Following Chapter 1, the introductory chapter, the criteria that are relevant to the crime environment analysis are identified and discussed in Chapter 2. These criteria can be categorized as *crime*-related (including measures of severity, fear, environmental patterns, offender/victim profiles, and displacement), *environment*-related (including measures of number of sites, population at risk, social dependency, and value at risk); and *Program*-related (including measures of amenability to CPTED strategies, implementability, evaluability, and impactibility). The document concentrates a major focus on the *trends* of the various criteria measures; certainly, CPTED should take into consideration those predatory crimes and those subenvironments that are projected to be predominant in the next decade.

Chapter 3 provides a general review of the major data sources that have been assembled, analyzed, and compared in the preparation of this document. The review includes a discussion on the scope, contributions, and limitations of the various sources. As might be expected, the crime-related information that is available is limited; it exhibits all the comparability problems associated with crime statistics in general, including those prompted by differing sources, differing definitions, differing scopes, and differing dates. Problems of validity and general applicability are also present. More detailed discussion of specific data sources is contained, where appropriate and pertinent, in the overview chapter on crime and fear, Chapter 4, and in the four environment-specific chapters, Chapters 5 through 8, respectively.

Chapter 4 analyzes general patterns of crime and fear, and presents the findings that most crimes are not intrinsically threats to the person and that no region or metropolitan area holds a monopoly on serious crimes. However, crime against the person is most prevalent in the larger metropolitan areas, and the rates of all serious crimes exhibit a higher rate in central cities than in suburban or rural areas. Victimization falls most heavily on the low-income and nonwhite populations, and offenders tend to come from the same backgrounds. An analysis of fear suggests that, in general, it reflects the rate of victimization. An analysis of displacement of crime by time, tactic, target, territory, and function suggests that the displacement effects of various crime prevention strategies would differ significantly. It is also postulated that displacement of common crimes in high-incidence areas can be held to a minimum, thus providing a net gain for society.*

The study of the residential mode in Chapter 5 has determined that burglary is the most prevalent stranger-to-stranger offense and an especially serious problem because of the fear it engenders. Robbery, while fear-producing, is relatively uncommon in residential premises; and larceny, while common, engenders little fear. Burglary rates generally decline with distance from the metropolitan core. Of all property offenders, burglars are most likely to be residents of the area in which they operate. The basic recommendation is that CPTED focus on the crime of burglary among

*The detailed analysis of crime displacement is contained in a separate document, "Elements of CPTED."

dwelling units located in a neighborhood of single- and multifamily residences in an inner-ring suburb.

The study of the commercial mode in Chapter 6 has also determined that the most consequential crime is burglary, which is among the most common and financially burdensome of crimes in this mode. Robbery, though substantially less common, appears to be more fear-producing. Consequently, most analyses of crimes against commercial establishments focus on these two offenses. Robbery and burglary victimization fall most heavily on the smaller retail and service establishments, and tend to cluster geographically within urban areas, particularly in the core city. Given the fact that commercial areas tend to be much less numerous and concentrated than residential areas, the crime concentration within these areas suggests that anticrime projects directed at retail and service areas would have a major impact on crime. Specifically, it is recommended that CPTED focus on the crimes of burglary and robbery, as well as related street crimes (i.e., assault and pursesnatch), within a geographic area that contains a commercial strip.

Unlike the residential and commercial modes, the school mode lacks an extensive data base. Based on limited -- and sometimes subjective -- data, Chapter 7 recommends the retention of secondary and postsecondary institutions as primary and secondary target subenvironments, respectively, since these target subenvironments evidence a high degree of concern over both crimes against property and crimes against person. Dollar costs incurred by schools as a result of the property crimes (particularly, vandalism, arson,

burglary, and larceny) are very high. However, while the crimes against person (particularly, assault, robbery, rape, and pursesnatch) may not be the most severe in terms of numerical incidence or economic cost, they do generate a greater degree of fear than crimes against property and, therefore, also warrant CPTED intervention.

Like the school mode, the transportation mode has a somewhat limited data base. In descending order of recommended targets, Chapter 8 identifies the following subenvironments and key crimes: Local rail (robbery, aggravated assault, larceny, vandalism), local bus (robbery, aggravated assault, larceny, vandalism), freight terminals (cargo theft), service stations (robbery), taxicabs (robbery), private vehicles (auto theft), and parking facilities (robbery and auto theft). The choice of local rail as the prime target is based on several reasons: (a) It has a severe violent crime (robbery and assault) problem (a necessary condition from the standpoint of impact and evaluation); (b) it is a mode with socially dependent users; (c) it is more amenable to CPTED strategies than the other subenvironments in transportation; and, perhaps more importantly, (d) it is a mode receiving increasing attention by such funding agencies as the Urban Mass Transportation Administration.

1. INTRODUCTION

CHAPTER 1. INTRODUCTION

The purpose of this document is to compile up-to-date and nationwide information regarding the levels (in terms of both severity and fear-producing measures), trends, and patterns of crimes existent in the four environments that the CPTED Program has been directed to address (i.e., the residential, commercial, school, and transportation environments). Through systematic and comparative analysis of this information -- based upon relevant crime-, environment-, and Program-related criteria -- the document affords a basis for judiciously selecting potential crime/environment targets that merit further consideration for demonstration purposes under the current CPTED Program.

It should be noted that -- as the concept of CPTED is a new one and the Westinghouse CPTED Consortium represents the first national effort in this field -- this document is analogous to a map, fashioned to guide the exploration of new territory. It should not be seen as a precise, definitive account of the incidence and characteristics of crime and fear in the various environments but, rather, as a reasonably accurate description of a terrain in which some parts are better charted than others. Consequently, further refinement and development of this material may be undertaken as part of CPTED's continuing research program.

This introductory chapter attempts to bring the contents of this document into perspective by: (a) Providing a review of background material on CPTED efforts to date; (b) describing in brief the current CPTED Program, and (c) outlining the scope of the material presented in this document.

A. Background

At the national level, the CPTED effort to reduce common predatory crimes and the fear of such crimes dates to the year 1969. Following the creation by the Law Enforcement Assistance Administration (LEAA) of its research center, the National Institute of Law Enforcement and Criminal Justice (NILECJ), the division of LEAA under which the CPTED Program is being administered, numerous efforts of varying scale were initiated. A discussion of the background of CPTED is contained in Chapter 2 of the report, "Elements of CPTED."

B. The CPTED Program

The Crime Prevention Through Environmental Design (CPTED) Program is the most recent and comprehensive in a series of programs initiated by the National Institute of Law Enforcement and Criminal Justice to develop and implement environmental crime control models. At the outset of the CPTED Program, the Law Enforcement Assistance Administration (LEAA) summarized the overall rationale of the Program in stating that: "Through the pioneering work the National Institute has already done in defensible space -- that is, an environment that discourages crime -- we know it is possible to create physical and social conditions that enhance safety."* In the course of its efforts to date, the CPTED Consortium has further refined and developed the conceptual framework of the Program with respect to its direction and methodology. A separate document, "Elements of CPTED," defines the scope and framework of the Program through detailed discussion of CPTED-related concepts and strategies.

*LEAA Newsletter, v. 4, no. 1. June 1974. P.9.

In sum, CPTED has been defined as an approach in reducing predatory crime and the fear of such crimes through the proper design, and effective use of the physically built environment. Thus, the program is not directed against those crimes classified as morals offenses, white-collar crimes, organized crime and racketeering, or crimes against governmental function. Rather, it is aimed at preventing stranger-to-stranger crimes -- typified by the offenses of robbery, burglary, rape, and assault -- which seriously threaten personal property and/or security, and which are perpetrated with little or no planning in situations that are readily available to the offender.** Under the CPTED Program, the creation of physical and social conditions that promote citizen surveillance and the effective use of environments will result in the prevention of these types of crime, as well as an increased sense of social control in these environments and support of those law enforcement activities designed to improve detection and crime reporting.

While the immediate objective of the CPTED Program is to reduce crime and fear of crime, the longer range goal is to institutionalize the CPTED approach. To accomplish these aims, the central two-year CPTED Program is charged with developing model demonstrations in the residential, commercial, school, and transportation environments. At least two of the four demonstrations will be implemented on an experimental basis, and they will be carefully evaluated to measure their impact on crime and the fear of crime. The conceptual, analytical, and demonstration results will be documented

**Further definition of the specific crimes against which CPTED strategies can be directed is contained in Chapter 4, "Overview: Crime and Fear."

and disseminated through the Program's technical assistance and curricula development activities.

C. Scope

Stated in broad terms, the overall objective of this document is to provide the Westinghouse CPTED Consortium with a vehicle for making sound decisions regarding the selection of crimes to be targeted for reduction and the rank-ordering of subenvironments offering high potential for demonstration purposes. The urgency to make decisions regarding crime/environment targets at this time is warranted in light of the time and cost constraints of the Program and the resultant need for CPTED to focus on specific crime/environment targets. The material contained in this report provides a basis for making such decisions. The document is intended primarily as an internal Program document, and not as a definitive review and analysis of crime as it exists in the Nation.

In the chapter that follows, "Relevant Criteria," those crime-related, environment-related, and Program-related criteria deemed relevant to the selection of the CPTED crime/environment targets are presented. Chapter 3, "Data Considerations," provides a general description of the overall range of source materials available for the preparation of this document and discusses the scope, contributions, and limitations of the particular types of data used. Chapter 4, "Overview: Crime and Fear," defines the types of crime against which CPTED strategies can be directed and presents general information concerning the crime-related criteria of severity, fear, environmental patterns, and offender/victim profiles. In Chapters 5 through 8, these and other environment- and Program-related criteria are discussed within the context of the four major CPTED environments, that is, residential, commercial, school, and transportation, respectively. Additionally, these chapters present recommendations regarding potential crime/environment targets that merit further CPTED consideration for demonstration purposes.

2. RELEVANT CRITERIA

CHAPTER 2. RELEVANT CRITERIA

The purpose of this document is to provide up-to-date information regarding crime/environment targets. This chapter discusses the criteria that must be considered in making such a selection. Table 2-1 contains a list of relevant criteria which have been termed: (a) Crime-related (severity, fear, environmental patterns, offender/victim profiles, and displacement); (b) environment-related (number of sites, population at risk, social dependency, and value at risk); and (c) Program-related (amenability, implementability, evaluability, and impactibility). Ideally, selected crime/environment targets should sustain severe problems of crime and fear that are amenable to CPTED strategies, particularly those strategies that can be implemented and evaluated within the Program's time and cost (including leverage) constraints, and that will result in minimal crime displacement and have significant national impact.

This document presents a discussion of the crime/environment targets in light of these criteria; it contains a presentation and interpretation of the wide variety of data gathered with respect to the indicated criteria. It also concentrates a major focus on the trends of the various criteria; certainly, consideration should be given by the CPTED Program to those crimes and those subenvironments that are projected to be predominant in the next decade. For obvious reasons, the discussion is more specific in treating the more objective criteria, (i.e., severity, offender/victim profiles, environmental patterns, number of sites, and population at risk), and less specific with respect to the more subjective criteria (i.e., fear, displacement, social dependency, and value at risk). Although discussion

TABLE 2-1

RELEVANT CRITERIA

Crime-Related	Severity (Numerical Incidence, Incidence Rate or Calculated Risk, Dollar Loss)
	Fear (Attitude Surveys, Indirect Measures)
	Environmental Patterns (Temporal, Geographic, Specific Locale, Modus Operandi)
	Offender/Victim Profiles (Individual Background History, Offender/Victim Relationship)
	Displacement (Temporal, Tactical, Target, Territorial, Functional)
Environment-Related	Number of Sites
	Population at Risk
	Social Dependency
	Value at Risk
Program-Related	Amenability (to CPTED Strategies)
	Implementability (within time and cost -- including leverage -- constraints)
	Evaluability (within time and cost constraints)
	Impactibility (with respect to institutionalization and to crime and fear reduction)

must remain somewhat conjectural with respect to the as-yet immeasurable Program-related criteria, it is important at this time to examine potential targets, to the extent possible, in light of these criteria, since CPTED strategies must be developed on the basis of these considerations.

The following subsections delineate the scope and relevance of the aforementioned criteria.

A. Crime-Related Criteria

Five crime-related criteria have been identified: Severity, fear, environmental patterns, offender/victim profiles, and displacement. With the exception of the criterion of displacement (which is discussed in detail in a separate document, "Elements of CPTED"), these measures form the basis for discussion in Chapter 4, "Overview: Crime and Fear," and in the "Crime/Environment Discussion" sections of Chapters 5 through 8. Chapter 3 discusses the various data sources defining these criteria.

In this section, the five crime-related criteria are outlined and explained.

1. Severity. The severity of crime is commonly measured by the following parameters: Numerical incidence; actual incidence rate (or calculated risk) per population, dwelling units, establishments, etc.; or, where appropriate, dollar loss incurred. A crime/environment target selected for further CPTED consideration must have an existent, significant, and documented crime problem.

2. Fear. The degree of fear induced by crime is a subjective criterion and is, consequently, very difficult to measure. Attitudinal

surveys have been conducted in an attempt to measure fear,* but, more commonly, measures of crime severity (i.e., crime rates) are adopted as indicators of the degree of fear produced. Another common assumption lies in the perception of the violent crimes of murder, forcible rape, aggravated assault, and robbery as the most fear-producing. Although the CPTED Program has identified fear as a criterion for target selection, the Program holds the major objective of reducing *both* the fear and the severity of crime. Thus, while the property crimes of burglary, larceny, and auto theft are inherently far less fear-producing than violent crimes, their predominance in terms of total number of incidents (six reported property crimes for each reported violent crime), also merits CPTED concern.

3. Environmental Patterns. This criterion encompasses those variations in the severity of total crime or of a specific type of crime that may emerge in relation to physical setting. For instance, certain crimes or crime in general may display patterns of *temporal distribution*, concentrating in certain seasons or months, on certain days of the week, at certain hours of the day, or in darkness rather than daylight. Patterns of *geographic distribution* may also emerge as the concentration of crime varies according to national region, size of the metropolitan area, or type of neighborhood. In addition, geographic distribution may occur with

*The National Opinion Research Center (NORC) survey of 1965 and the National Crime Panel (NCP) surveys of 1972 are two such attempts.

respect to the more specific environmental locale. For example, corner homes or establishments may be victimized more frequently than others, rail stations more frequently than trains. Furthermore, individual elements of the locale may exhibit an influence upon the offender's methods of operation (for instance, in affording a selection of escape routes), thereby affecting distribution. Data on all the above patterns provide important input for the development, implementation, and evaluation of CPTED strategies.

4. Offender/Victim Profiles. Under this criterion fall two types of information. First, data on certain characteristics -- usually age, sex, race, socioeconomic status, or other background history factors -- of both individual offenders and individual victims provide valuable inputs for the development, implementation, and evaluation of specifically directed CPTED crime control strategies.** Second, information concerning the relationship between offender and victim is important, as CPTED strategies focus on prevention of stranger-to-stranger crimes rather than crimes amongst nonstrangers.

5. Displacement. Displacement is the phenomenon that occurs when foreclosure of one type of criminal opportunity by anticrime measures causes offenders to shift to: (a) A different time of day (temporal); (b) the use of different methods (tactical); (c) an alternate type of

**A separate document entitled, "Elements of CPTED," discusses the impact of offender characteristics on crime displacement.

target (target); (d) a new area (territorial); or (e) a different type of crime (functional). These forms of displacement, the general lack of consideration afforded the phenomenon, and its significance for the development of CPTED crime control strategies are discussed in a separate document, "Elements of CPTED." References to displacement in this document are limited to instances in which evidence has emerged with regard to a specific environment and offenders therein.

B. Environment-Related Criteria

The term *environment* may be used to describe physical or social systems that influence and shape the attitudes, behavior, or relative sense of well-being of individuals or groups. For CPTED purposes, however, a broader context of the term denotes one of the four major areas of concern, namely, the residential, commercial, school, and transportation environments. Within the discussions of each individual environment (Chapters 5 through 8), pertinent subenvironments are identified and discussed.

Under ideal circumstances, one would subclassify and address each environment in terms of location, type, and external/internal elements. For example, in the residential environment, discussion might focus on such specific environments as central city high-rise parking areas or corridors. Unfortunately, as will be discussed at length in the chapters that follow, the crime data available for each environment exhibit nothing approaching this degree of specificity. Thus, to a large extent, subclassification of environments must be dictated by the constraints of the available crime information.

The term *environmental characteristics* can be used in reference to a broad range of physical and social factors and their interactions. However, in the present document, four basic characteristics -- number of sites, population at risk, social dependency, and value at risk -- have been selected as those factors most relevant to the task of evaluating the relative importance of an environment with respect to its crime experience.

1. Number of Sites. Sites are specific environmental locations that can range in scale from a single room or outdoor space to a large geographical region. This document considers sites in terms of the suitability of certain subenvironments for CPTED Program intervention. That is, it is necessary (though not sufficient) that a CPTED target be typical (in its crime problem and in other characteristics) of a large number of sites around the country for CPTED strategies to have national applicability, transferability, and impact.

2. Population at Risk. This criterion refers to the number of site users who are potential victims in each environment subclassification. Like the number of sites, this measure must be considered in determining the degree of applicability and impact that CPTED crime control strategies would have on a national basis.

3. Social Dependency. Selection of CPTED Program targets also considers the relative roles of different subenvironments in providing services that are essential to support of the social and economic well-being of the community. Availability of alternative sources for provision

of these services should also be included in such considerations. Thus, for example, the dependence of urban dwellers on mass transit systems designates that subenvironment as a viable target.

4. Value at Risk. As a subjective criterion, value at risk can be interpreted as the relative vulnerability of a particular subenvironment as measured by the sense of security or the number of lives threatened by its crime problem. More objectively, the dollar value of property that may be lost as a result of crime completes the definition of value at risk. Certainly, the CPTED Program should concentrate on environments with a large value at risk to have the greatest impact.

C. Program-Related Criteria

Selection of four major criteria related to the realization of the CPTED Program must be considered in the examination of potential targets. These are: Amenability (to CPTED strategies), implementability, evaluability, and impactibility.

1. Amenability. Crime/environment targets selected for further consideration under the CPTED Program must, of course, be amenable to CPTED-type strategies. (The concepts and framework of CPTED that form the basis for those strategies are treated in depth in a separate document, "Elements of CPTED.") In brief, a CPTED crime control model or strategy seeks to prevent crime by manipulating variables that are uniquely related to the target environment itself. Thus, the CPTED Program focuses upon the physical environment -- its planning, design, and use. While the program physically oriented, it recognizes and capitalizes upon the capacity of other, nonphysical types of environmental components (social, educational,

law enforcement, and managerial) that can be directed in support of the proper use of the built environment.

2. Implementability. The component characteristics of selected crime/environment target sites must permit the implementation of crime control models within the time and cost (including financial leverage from other local and Federal sources) constraints of the CPTED Program. Judicious selection of sites (employing effective site selection criteria), combined with realistic design of tactical CPTED models, enhances the implementability of such models.

3. Evaluability. The site selected and the tactical model designed for each CPTED target should facilitate the evaluation of the model. Although this evaluation must definitively discern the total impact of the model (vis-a-vis other programs operating at the site), it is unrealistic to expect that the impact of each model component can be determined objectively. The basis of the CPTED Program -- the theory that effective manipulation and interaction of several (complementary) crime control strategies can result in the reduction of crime and fear -- precludes or renders meaningless measurement of the impact of each individual component.

4. Impactibility. While the immediate objective of the CPTED Program is to reduce common, predatory, stranger-to-stranger crimes and the fear of such crimes, the more-long-range goal lies in the institutionalization of CPTED (i.e., establishment of a program that will continue to evolve on a widespread, long-term basis). Thus, in the selection of crime/environment targets, consideration must be given to the potential impacts

of such selections, including: (a) Possible alterations of aspects of the community, system, or individual lifestyle other than the crime experience; or (b) the potential for support from or coordination with other types of government or private programs that might enhance CPTED.

3. DATA CONSIDERATIONS

CHAPTER 3. DATA CONSIDERATIONS

This chapter serves as an introduction to the various types of data sources that have been used in the preparation of this document. The discussion provides a general description of both the overall range of available source materials and the scope, contributions, and limitations of particular types of data. Actual data presented in these sources are discussed in subsequent chapters. The five basic types of data sources used -- the Federal Bureau of Investigation's (FBI) "Uniform Crime Reports" (UCR), the National Crime Panel surveys, additional wide-scale crime surveys, specific analytic studies, and demographic surveys -- are discussed in the ensuing sections, followed by a section illuminating problems that have arisen from the attempt to utilize these various sources comparatively for the development of a composite crime/environment picture.

Before reviewing the various data services, it is important to note that perhaps the most limiting aspect of all the sources from a solution-oriented viewpoint is the fact that crimes are classified in *legal* or UCR-designated terms. These classifications are not appropriate or detailed enough to provide insight into their solutions. For example, it may be more appropriate to classify crimes by certain key, modus operandi measures.

A. FBI Uniform Crime Reports

The annually published UCR[1] statistics have been utilized considerably in the preparation of this document, particularly in Chapter 4, as they provide the most comprehensive documentation of crime in the United States.

The UCR present data compiled by approximately 10,000 law enforcement agencies serving 93 percent of the national population. Total incidents reported to the police are compiled for a set of "Index" offenses which include: (a) The violent crimes of murder, forcible rape, aggravated assault, and robbery, and (b) the property crimes of burglary, larceny, and auto theft. Subsequently, Index rates per 100,000 population for the total crime Index and for each offense are computed on a national basis, and by geographical regions, States, Standard Metropolitan Statistical Areas, and aggregates of cities of various sizes. In addition, statistics on arrested offenders are shown.

The UCR are valuable in providing a nationwide view of the incidence of crimes known to the police (i.e., reported crimes) and their trends from year to year and from place to place. However the UCR suffer a principal limitation in that they reflect information only for those crimes that have been reported to the police and entered into police records. (In general estimation, these constitute less than one-half the total actual incidents.) A related secondary limitation of the UCR is that the degree of adherence to the FBI's crime reporting standards may vary considerably among the numerous contributing law enforcement agencies, thereby jeopardizing comparisons between individual cities or areas. Furthermore, as the preface to the UCR document itself has stated, the Index does not take into account a multiplicity of other factors that must be considered in a comparative assessment of crime levels and trends: Population density, age, race, and sex composition; economic status; and stability/transiency, among others. The impact of

these problems on this utilization of UCR data is considered in a later section of this chapter.

B. National Crime Panel Surveys

The National Crime Panel (NCP) program is a victimization and attitude data collection effort, recently undertaken by the National Criminal Justice Information and Statistics Service of the LEAA, in conjunction with the U.S. Bureau of the Census. NCP provides, on a quarterly basis, statistical data on criminal victimization in the United States. In several important respects, the NCP survey results complement the UCR crime data, providing a different type of national data base and more information with respect to specific crime factors and victim/offender characteristics.

The NCP survey instruments attempt to measure the level of crime by interviews (selected by a sampling procedure) that gauge the extent to which individuals (age 12 and over), households, and commercial establishments across the Nation and in selected large cities are victimized. Thus, as they compile data on the number of *victimizations* (or specific criminal acts per victim, household, or commercial establishment), the NCP surveys are able to provide estimates of the amount of crime that goes unreported to the police, as well as information on citizens' reasons for failing to report crimes to the police.

Furthermore, the NCP survey instruments solicit data on several factors, not taken into account by the UCR effort, that are of considerable importance to the assembly of meaningful crime-related information. The NCP Crime Incident Report instrument solicits such detailed information on the specific

place and time of the occurrence, the method of attack, and the extent of dollar loss or injury. It also contains detailed questions with respect to the perceived characteristics of the offender(s). Of particular usefulness is the NCP's categorization and compilation of victimizations by stranger-to-stranger and non-stranger-to-stranger instances. The Basic Screen Questionnaire and Attitude Questionnaire forms cover personal characteristics and activity patterns of all household members over the age of 12, and solicit their perceptions of the level and trends of crime and their fear of crime.* A separate survey instrument for commercial crime collects detailed information on commercial burglary and robbery victimizations and characteristics of establishments victimized.

NCP survey results are currently being compiled and released; three available sets of results are described below:[2]

- Five Largest Cities Survey. Interviewing in the Nation's five largest cities (New York, Chicago, Los Angeles, Philadelphia, and Detroit) was conducted during the period January to March 1973 and covered victimizations by six Index crimes (murder being excluded) that had occurred during 1972. Some 22,000 persons and 2,000 businesses were interviewed in each city. An advance report, "Crime in the Nation's Five Largest Cities," was published in April 1974. The Overview, Residential, and Commercial chapters of this document make use of the findings documented in the advance report.
- Eight Impact Cities Survey. Interviews in the eight LEAA-designated High Impact Program cities (Atlanta, Baltimore, Cleveland, Dallas, Denver, Newark, Portland, and St. Louis) were conducted from July through November 1972 and covered victimizations that occurred during the previous 12 months. About 9,700 households (some 21,000 persons age 12 and over) and approximately 2,000 commercial establishments made up the sample for each city. Findings presented in the advance report, published in July 1974, have contributed to the Overview, Residential, and Commercial chapters of this report.
- National Survey. Interviewing for the National Survey began in July 1972 and has continued on a regular monthly basis. Each month's interviews utilize a representative

*Unfortunately, the attitudinal information (including information on fear of crime) is not currently available; it will probably not be compiled and released until sometime in 1976.

statistical sample of 10,000 households and 2,500 businesses nationwide, and cover victimizations occurring during the previous 6 months. Given a base of 60,000 households, a yearly victimization rate is determined based on two sets of interviews per household per year. Preliminary summaries of results for each of the first three quarters of 1973 have been made available to the CPTED Research Support team. CPTED estimation of the yearly victimization rates by combining the first three quarters and applying a four-thirds weight to the total has yielded estimates that are adequate for CPTED purposes at this time. These results are presented and discussed in Chapters 4 through 6.

It should be noted that, inasmuch as the National Crime Panel surveys constitute a new method of measuring the degree and extent of crime, there are some definitional and methodological problems associated with them. Consequently, caution should be exercised in the use of the results. In fact, LEAA recently commissioned the National Academy of Sciences to conduct a 2-year study of this new method. Among the questions to be asked were: Whether the definitions used by NCP correspond with those of the UCR; whether the sample is large enough; whether more or less emphasis should be

placed on the national or city studies; whether the same information can be gathered more cheaply by telephone than by personal interviews; and whether other types of crimes should be included.

C. Other Victimization Surveys

In recent years, several other less comprehensive yet still wide-scale victimization surveys have been conducted, the results of which have contributed to the preparation of this report. These surveys have endeavored to measure the following: Levels, trends, and kinds of incidence or victimization; degrees of fear and attitudes relating to crime and crime control; and detailed information on the characteristics of crimes, offenders, and victims.

Field Surveys conducted for the President's Commission on Law Enforcement and the Administration of Justice in the mid-1960's are the major representatives of this type of broad-based survey concerned with crime and fear of crime in general. (In fact, the conception of the National Crime Panel effort in 1968 actually resulted in part from concern created by these surveys' discovery of the base amount of crimes that went unreported and of the significant level of public fear.) Perhaps the foremost of the Field Surveys is the National Opinion Research Center's (NORC) "Criminal Victimization in the United States" (1967),[3] a survey conducted in a sample of 10,000 households throughout the United States to establish: The extent and nature of crimes of violence and property crimes against individuals and households, and losses or injury suffered; the extent to which these crimes were reported to the police;

perceived characteristics of offenders; and perception of behavior as influenced by the level of crime. Other Field Surveys -- Biderman's "Report on a Pilot Study in the District of Columbia on Victimization and Attitudes toward Law Enforcement"[4] and Reiss's "Studies in Crime and Law Enforcement in Major Metropolitan Areas"[5] -- sought similar information on a more localized scale (the latter also included commercial victimizations).

More recently, general crime surveys -- again, on a narrower scale -- have been prepared in conjunction with the LEAA's High Impact and Pilot Cities Programs. For example, a survey conducted in the Impact City of Portland in 1972, the "Robbery and Burglary Victimology Project,"[6] sought to compile a composite profile of the victims of and physical factors attendant to these crimes in residential and commercial settings. A Dayton-San Jose Pilot Cities victimization survey, "Crimes and Victims"[7] (1974), sought characteristics of the victims of personal, household, and commercial incidents in these environments.

Victimization surveys are especially valuable as means of obtaining information not afforded by the UCR (including the characteristics of the victim and the nature of the victim/offender relationship) and as vehicles for revealing and correcting the inadequacies of estimating the level of crime on the basis of the amount of reported crimes. However, all victimization surveys are to some degree vulnerable to several potential sources of error. Among these are: The general difficulties of drawing a representative sample; subjective factors, such as language of the questionnaire, which may lend bias to the interview itself; and the possibilities

that interviewees may overreport victimization by including incidents outside the designated time frame, or may underreport through having suppressed or forgotten incidents.

As suggested by the discussion above (and as substantiated in subsequent chapters), the general victimization surveys mentioned -- as well as the UCR -- provide data pertinent to the residential and commercial establishments as they generally cover incidents incurred by individuals, households, or businesses. Rarely, however, do these general sources offer information on offenses and victimizations occurring within the school or the transportation environments (UCR data on auto theft is an exception). In these environments, limited efforts in the form of victimization surveys have only recently begun to establish bases for measuring crime and fear. For example, a survey of 110 urban school districts was undertaken by the Senate Subcommittee on Juvenile Delinquency in 1970 to measure crimes against persons and property. The Subcommittee repeated and expanded that effort in 1973. In 1972, the American Transit Association attempted to measure, for the first time, the extent and seriousness of crime and vandalism in urban mass transit through a survey of U.S. and Canadian transit company records. In addition, limited attitude surveys conducted in recent years have sought to obtain information on transit users' perception of crime.

D. Analytic Studies

This category encompasses a broad range of studies that, while they may also afford general data on crime and fear, primarily seek to investigate

in depth specific aspects of crime problems. Because both the purposes served and the methodologies used by these studies are widely disparate, and the studies themselves are numerous, this discussion will merely describe them by type in terms of their focii and offer examples of each type.

One such type may be termed "crime-specific"; these studies investigate the nature and incidence of a particular type of crime. For example, A. Normandeau's "Trends and Patterns in Crimes of Robbery"[8] studied all robberies reported in Philadelphia between 1960 and 1966 to discover trends and patterns with regard to victim/offender and environmental characteristics. Scarr's "Patterns of Burglary" study conducted similar investigations of that crime during a 3-year period in three types of metropolitan areas.

Some analytic studies can be designated "environment-specific," inasmuch as they focus upon the array of crimes occurring in a particular type of setting. For example, Reppetto's "Residential Crime"[10] studied -- through examination of police records, interviews, and field observations -- crime, offender, and victim patterns of residential crime in the metropolitan Boston area. Misner and McDonald's "Reduction of Robberies and Assaults of Bus Drivers"[11] studied the nature and causes of bus crimes, utilizing police and bus company records, driver and management surveys, and offender interviews.

Additionally, less specifically focused studies that identify and explore certain types of crime patterns were used in the preparation of this report. For example, Luedtke's attempt to analyze specific environmental characteristics of residences and businesses victimized by burglary and

robbery in the city of Detroit contributed information with relevant respect to the crime-related criterion on environmental patterns.

E. Demographic Surveys

For the most part, demographic statistics figuring in this document (such as population figures and measures of socioeconomic and other environmental characteristics) emerge indirectly from the crime-related source materials described earlier. However, in certain cases, demographic-type data sources have been used directly. For example, in the residential environment discussion, Hoover and Vernon's postwar study of metropolitan areas, "Anatomy of a Metropolis,"[12] contributed a useful system of differentiating metropolitan areas by land use and social characteristics. (There work is more relevant to the CPTED Program than Burgess' Concentric Circles study performed in the 1920's because of the former's recency.) Also, in performing rough calculations of crime rates with the preliminary National Crime Panel results provided to the Research Support team, population counts by the 1970 U.S. Census proved useful. In the same vein, tables of ridership data[13] compiled by the American Transit Association facilitated identification of trends within the mass transportation area.

F. Problems of Comparison

In addition to the limitations inherent in the various individual types of data sources (which have already been noted and which receive further discussion in subsequent chapters), broader problems were encountered in attempts to compare the various data for the purpose of developing composite pictures of crime experience and meaningful statements with regard

to the crime/environment criteria. However, because constraints on the time and resources available for compiling this document precluded any extensive efforts to collect data by a special search of police department records or the commissioning of independent victimization or attitude surveys,** it was necessary to base this comparative analysis on *available* information from a variety of data sources. General difficulties encountered in this task are summarized in this section.

One basic difficulty arose from the widely varied schemes utilized by different sources in classifying crimes. Until recently, criminological analysis was dominated by the UCR concept of "crime" as a unitary phenomenon that covered vastly disparate behavior ranging from homicide to disorderly conduct. Thus, sources offering similar numerical incidence or rate calculations for the "total" crime experience of an area fail to yield a very meaningful crime picture; additionally these sources can actually differ in the crimes included in their calculations. Moreover, even when sources supposedly deal with the same specific type of crime -- robbery, for example -- such disparate events as bank robberies and street muggings may be lumped within the totals. Further difficulties arise from the variations used in classifying incidents by degree of severity -- what constitutes an *aggravated* assault, *grand* larceny, and so on.

**The Research Support team did, however, conduct certain data collection efforts -- namely, in compiling raw survey data provided by the National Crime Panel, the American Transit Association, and the National Association of School Security Directors -- to the extent possible and as the need arose.

Similar problems were encountered with respect to the noncomparability of the units used to measure crime. As pointed out in Section B of this chapter, victimization surveys tend to measure specific criminal acts per potential victim, while police reports (which contribute to the UCR compilations) measure in terms of offenses -- failing to take into account the number of potential victims. Additionally, while one crime event may involve more than one category of offense, such as the murder of a rape victim, the UCR classification would record only a single offense -- in this case, a criminal homicide, the highest ranking offense. Similarly, bases used in the calculation of crime rates or risk may vary between the different data sources. While some sources (such as the UCR) deal only in terms of crimes per 100,000 (or other unit) of total population, and thus fail in the cases of crime categories such as burglary to afford very meaningful rates, other sources do calculate in terms of more specific and appropriate targets of risk.

Other obstacles resulted from the varying degrees of specificity exhibited by different sources with respect to the crime-related information they provide. In some cases, the absence of detail -- such as information on time of occurrence, whether offenses were stranger-to-stranger -- rendered the data virtually useless. In other cases, "lumping" of crimes occurring in more than one of the CPTED target environments -- for example, the classification as "street" crime of offenses occurring in alleys of residential areas, parking lots of commercial establishments, playgrounds of schools, and bus stops -- frustrated data analysis efforts. As mentioned

previously in Chapter 2 with respect to the environment-related criteria, the large majority of crime data sources fail to specify exact environmental locale or other characteristics to a degree that would allow the desired comparison with the detailed categories afforded by demographic surveys.

Additionally, the fact that crime data available from various sources were drawn from different time periods within the past decade or so limited CPTED ability to make definitive statements about either the current levels of crime or trends in crime incidence.

Finally, the recognition that each data set has certain methodological problems associated with it does not necessarily mean that all data are equally inadequate or useless. In fact, it is generally agreed that victimization data is the most preferable. This type of data is, however, not routinely collected and is expensive to generate. In addition, the NCP data are not available for small units of analysis (i.e., family, household, block, etc.). Thus, the dilemma is that the best data (NCP type) is relatively unavailable while the weaker data (UCR type) is routinely collected. This situation has prompted numerous researchers to consider the relationship between "unofficial" and "official" data sources in order to assess the error in absolute estimation values and to determine the relationship between each data type and important "independent" variables.

For example, Hirschi (1969), in his analysis of the correlates of delinquent behavior, observed that the sign and level of the relationship between potential independent variables and a self-reported measure of

delinquency were very similar to the signs and levels of association between the same variables and an official measure of delinquency. In a comparison of UCR and victimization rates (i.e., homicide rates collected by the Center for Health Statistics and victimization rates derived from the survey conducted by the National Opinion Research Center in 1965), Hindelang observed that:

> While only very crude comparisons can be made between the UCR and data from these two sources, the results suggest that for homicide trends and the geographic distribution of "index offense," UCR and non-UCR sources depict similar patterns (1975).

It was determined that, at a regional level of aggregation (1965), the UCR victimization rates correlated at +0.98, demonstrating the degree to which the official data is an index of the *relative* level of what have come to be considered more reliable and valid measures of crime. Finally, at a city level, the correlations between UCR and victimization rates (using 26 cities for which National Crime Panel data have been published), run from 0.67 to 0.88, with a cross-city correlation of 0.76. While these values vary by offense type, it is becoming increasingly clear that total and property victimization rates vary closely with recorded crime rates, and that most variables are related to self-report measures in a way that parallels their relationship to official rates.

4. OVERVIEW: CRIME AND FEAR

CHAPTER 4. OVERVIEW: CRIME AND FEAR

In an overview manner, this chapter addresses the types and trends of crime that are to be impacted by the CPTED Program, and discusses them with respect to the five crime-related criteria, as defined in Section A of Chapter 2. The discussion is based on a systematic and comparative analysis of various data sources, surveys, and studies. As mentioned earlier, the attempt has been made in this analysis to take into account the most up-to-date information that is available; to identify consensus, opinions, and disparities; and to arrive at some relevant conclusions. This overview chapter provides a general summary of the target crimes, related source materials, and crime-related information. In this and subsequent chapters, the amount of supporting data is kept to a minimum; however, specific references are made to the pertinent material whenever appropriate.

It is to be noted that, although the material presented in this chapter is of a general nature and therefore applicable to all four environments of CPTED concern, it is especially pertinent to the residential and commercial environments, which are discussed in greater detail in Chapters 5 and 6, respectively.

For the purposes of this overview, general information on the overall incidence of CPTED target crimes, their nature, and the fear they generate has been drawn primarily from the broad-based sources discussed in Chapter 3 -- the FBI Uniform Crime Reports, the National Crime Panel surveys, and

the various field and other general victimization and attitude surveys. The scope and limitations of these general sources receive further consideration within the context of this chapter. To supplement these sources, the findings of various analytic studies are also cited.

A. Target Crimes

In general, the CPTED Program is aimed at raising the level of personal security through reduction of common, predatory, stranger-to-stranger crimes and the fear induced by such crimes. Thus, crimes excluded from CPTED consideration are offenses commonly referred to as "morals" or "victimless" offenses which are by nature non-fear-producing (i.e., gambling and prostitution, white-collar crimes, organized racketeering, and crimes against governmental function). The announcement by the LEAA of the commencement of the CPTED Program stated that the Program "will concentrate on crimes of opportunity -- particularly robbery, burglary, rape and assault."* Furthermore, in addition to robbery, burglary, rape, and assault, CPTED strategies are likely to impact other victim and property crimes, especially those occurring between strangers. Thus, in Chapters 5 to 8, through examination of the relative severity and the nature of various crimes within the individual target environments, preliminary assessments are reached as to those crimes against which CPTED strategies can be most effective.

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*Statement issued by Mr. Charles Work, LEAA Deputy Administrator for Administration, in on LEAA News Release, May 13, 1974, P. 2.

The specific crimes with which the CPTED Program is concerned are those measured by the FBI Uniform Crime Reports' Index of crime (criminal homicide, forcible rape, robbery, aggravated assault, burglary, larceny, and auto theft) and certain of the Part II offenses (other assaults, arson, and vandalism). These crimes may also be categorized as: (a) Crimes against person, also referred to as violent crimes, and (b) crimes against property. The following subsection describes each of the specific types of crime that are discussed in this and subsequent chapters. The subsection also indicates trends exhibited by the rates for these crimes over the 5-year period from 1967 to 1972, based upon the 1972 UCR analysis. (It should be noted that, while rates for most crimes seem to have dropped slightly for 1972, the rates for 1973** again indicate an increase in most types of crime.)

1. Crimes Against Person (Violent). Figure 4-1 indicates the overall trend of the numerical incidence and rate for the total volume of Part I violent crimes as measured by the UCR. The individual violent crimes are discussed below in descending order according to their vulnerability to CPTED strategies.

a. Robbery. Robbery is defined as a form of theft (or attempted theft) in which the offender uses force or violence, or the threat of such, to steal anything of value from the possession of another. As indicated by Figure 4-2, total robbery rose considerably over the 5-year period; in

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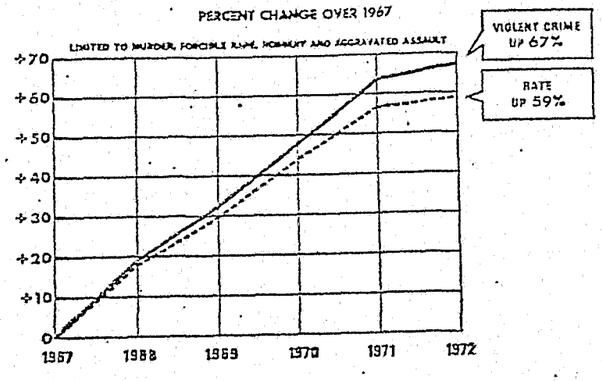
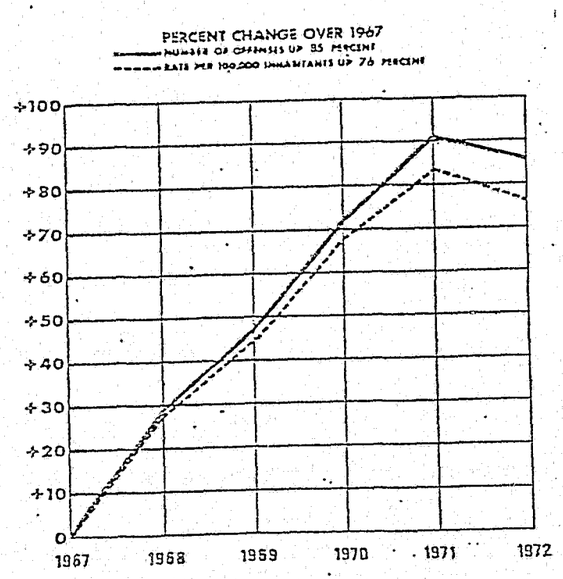
**The 1973 data were not available at the time the present analyses were undertaken.



Source: FBI UCR 1972

Figure 4-1. Total Violent Crime, 1967-1972



Source: FBI UCR 1972

Figure 4-2. Total Robbery, 1967-1972

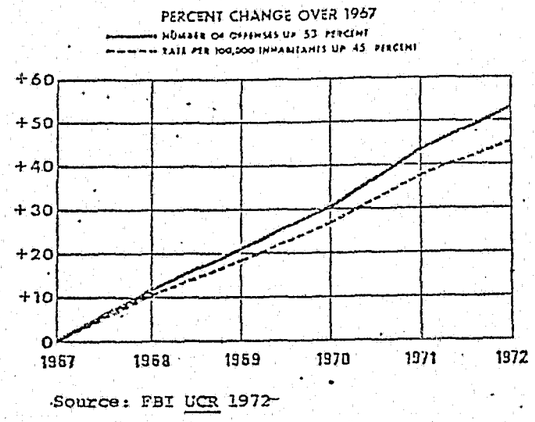
fact, it exhibited the greatest increase of any of the Part I offenses. The UCR finds that residential robberies and robberies of chain stores -- types of crime which CPTED strategies may be expected to impact -- exhibited the greatest increases (up 108 percent and 138 percent, respectively).

b. Aggravated assault. Assaults are unlawful physical attacks (or attempts to attack) by one person upon another. In general, aggravated assaults are assaults with the intent to kill or inflict severe bodily injury by use of a weapon, whereas simple assaults (defined by the UCR to be "other assaults") involve attacks or attempts without a weapon resulting in or intending minor injury. Figure 4-3 indicates the recent trend for aggravated assaults; this crime has also shown significant increase, although not so dramatic as the increase of robbery. To the degree that assaults are between strangers, they may be impacted by CPTED.

c. Other assaults. Other or simple assaults, as defined above, are also of concern to the CPTED Program.

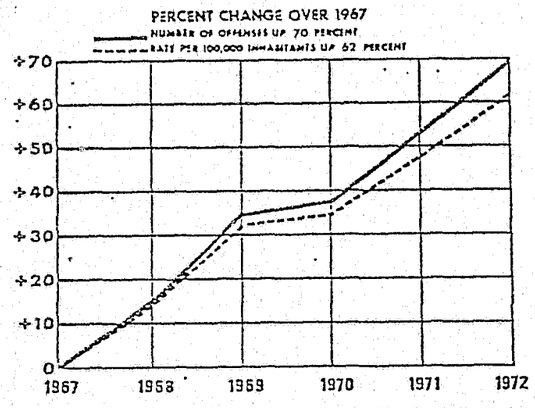
d. Forcible rape. Rape constitutes carnal knowledge through the use of force or the threat of force, including attempted rape. Incidence and rate for this crime also rose considerably, as indicated by Figure 4-4. Again, to the degree that rapes are between strangers, they may be impacted by CPTED.

e. Criminal homicide. Also referred to as murder or non-negligent manslaughter, this offense includes all willful killings without



Source: FBI UCR 1972

Figure 4-3. Total Aggravated Assault, 1967-1972



Source: FBI UCR 1972

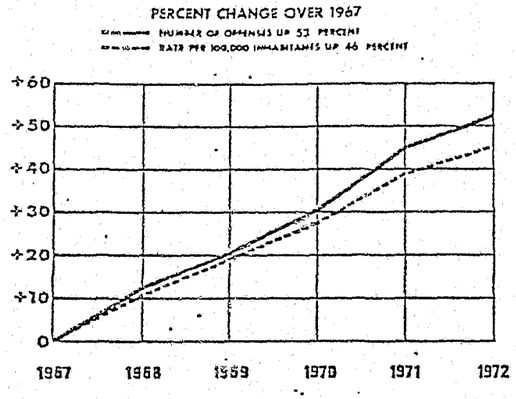
Figure 4-4. Total Forcible Rape, 1967-1972

due process of law. The increase for this crime, is comparable to that of aggravated assault (see Figure 4-5). Inasmuch as homicides are rare events and are predominantly committed by nonstrangers, CPTED would be expected to have marginal impact on this crime.

2. Crimes Against Property. Figure 4-6 indicates the trend taken by the crimes against property included in the UCR Index offenses -- burglary, larceny $50 and over, and auto theft. The increase for these crimes was also considerable, although not quite so sharp as the overall increase exhibited by the violent crimes against persons.

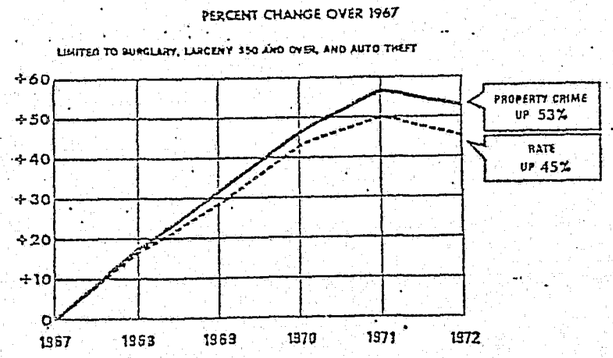
a. Burglary. Burglary is the unlawful or forcible entry or attempted entry of a structure, usually, but not necessarily, with the intent to commit a theft. As reported to the UCR, this crime showed significant increase over the 5-year period (see Figure 4-7), although less than the increase exhibited by any of the violent crimes. Large increases for residential burglary (up 70 percent over 1967) primarily account for the total rise in this crime. It can be expected that CPTED crime control strategies will have significant impact on burglary, both residential and commercial.

b. Larceny. Acts of larceny involve the theft of any property or article of value which is not taken by force and violence, or by fraud. Figure 4-8 indicates the recent trend exhibited by larcenies for which the loss incurred was valued at $50 or more. These crimes rose significantly -- more sharply, in fact, than several of the violent crimes.



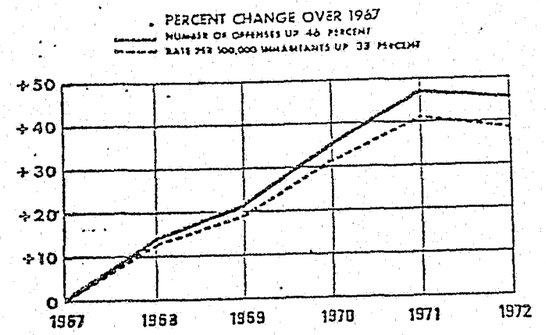
Source: FBI UCR 1972

Figure 4-5. Total Criminal Homicide, 1967-1972



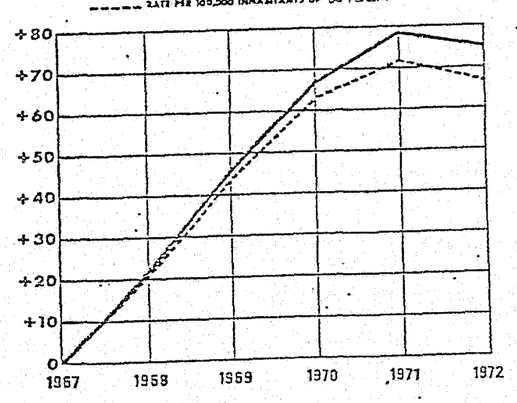
Source: FBI UCR 1972

Figure 4-6. Total Crimes Against Property, 1967-1972



Source: FBI UCR 1972

Figure 4-7. Total Burglary, 1967-1972



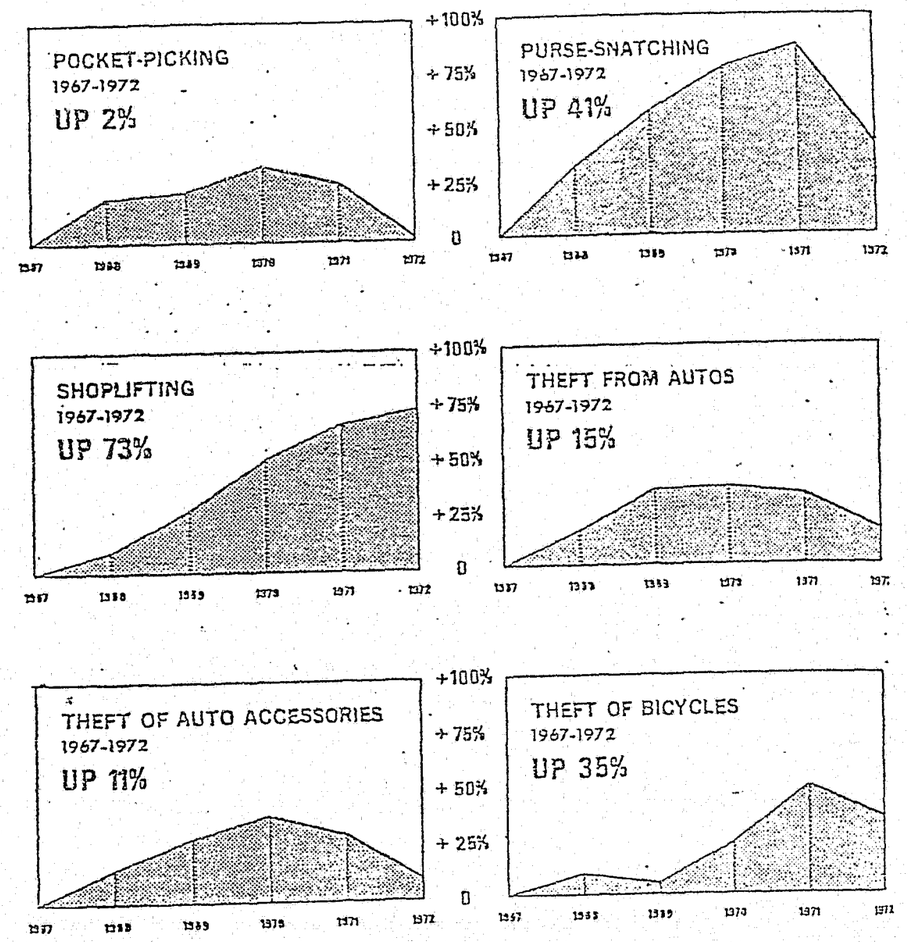
Dource: FBI UCR 1972

Figure 4-8. Total Larceny $50 and Over, 1967-1972

In the context of CPTED, certain types of larceny, possibly involving smaller losses, are considered; these include pursesnatch, pickpocket, shoplift, and minor thefts from household and commercial establishments. Lesser (under $50) larcenies are categorized separately by the UCR, and the trends for certain types of these crimes are shown in the composite Figure 4-9. Shoplift showed the highest increase, followed by pursesnatch; the increase for pickpocket, on the other hand, was insignificant. Another type of larceny, namely cargo theft, is also of concern to CPTED. Cargo theft involves the theft of any container or parts of the contents thereof in transit or at freight terminals. This type of larceny has shown significant increases during the last few years (see the discussion in Section C of Chapter 8).

c. Auto theft. Auto thefts involve the stealing or driving away and abandoning of a motor vehicle. As measured by the UCR, the crime increased (but not so greatly as the other Index offenses) during the 5-year period (see Figure 4-10). Inasmuch as auto theft is mainly a street crime, it would be impacted by CPTED.

d. Vandalism. Vandalism consists of the willful or malicious destruction, injury, or disfigurement of property without the consent of the owner or person in custody. While it can be argued that vandalism lies outside the realm of "crime," as defined herein, it is included in this examination because of its severity and consequent impact in terms of fear and dollar cost, particularly in the school and transportation environments.



Source: FBI UCR 1972

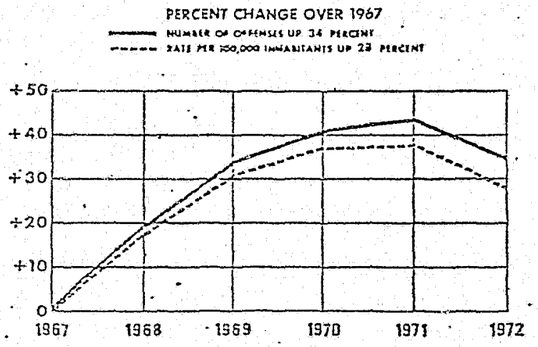
Figure 4-9. Larcenies Under $50, 1967-1972

TABLE 4-1

UCR VS. NCP MEASUREMENTS FOR FIVE LARGEST CITIES, 1972

City	UCR	NCP	% UCR/NCP
Chicago	223,630	621,300	36
Detroit	128,996	345,600	37
Los Angeles	237,801	693,500	34
New York	515,121	1,100,100	47
Philadelphia	78,457	396,900	20
TOTAL	1,184,005	3,156,900	38

Source: LEAA News Release, April 15, 1974



Source: FBI UCR 1972

Figure 4-10. Total Auto Theft, 1967-1972

e. Arson. This document considers (as possibly a separate form of vandalism) incidents of arson that involve willful or malicious burning, or attempts thereof, with or without intent to defraud. Trends for school and transportation vandalism are discussed in Section C of Chapter 7 and Section C of Chapter 8, respectively.

B. Severity

This section discusses the severity of the CPTED target crimes as measured by total volume, volume by individual type, and volume of the indicator offenses of burglary and robbery.

1. Total Volume: Index Crimes. As described in Chapter 3, the UCR, (the conventional source for nationwide crime data) compile annually total incidents reported to the police for a set of seven Index offenses. On the basis of these incidents, rates per 100,000 population are computed for the Nation and various regional and local areas. 1972 UCR incident totals and rates for the Index crimes as a whole and for individual offenses are presented in this section. However, it must be borne in mind, that, as discussed in Chapter 3, a large percentage of crime is not reflected in these UCR figures, since they fail to show those crimes not reported to or recorded by the police. Consequently, actual gross incidents and crime rates are probably substantially larger than the UCR data would suggest.

The NCP victimization surveys (described in Section B of Chapter 3) have been designed in part to provide a truer estimation of the total volume of the more common crimes. Table 4-1 compares the total number of crimes reported in the UCR in 1972 with the findings on total number of

victimizations found by the NCP's Five Largest Cities survey in that year. The total number of incidents indicated by survey respondents is greater than twice the comparable UCR-reported offenses. This survey (see Table 4-2) and the NCP survey of Eight Impact Cities found that crimes against commercial establishments tended to be reported to the police most frequently, followed by crimes against households and, lastly, crimes against invididuals. Larcenies, both personal and household, were the incidents least often reported.

In conclusion, then, the recent crime estimates afforded by victimization surveys suggest that the 1972 UCR total of 5,891,000 Index offenses probably only reflects about one-half the actual total for these offenses.

2. Volume by Type of Offense. Somewhat more meaningful information emerges when the volume of these offenses is considered by individual type. The Index offenses are distinguished by the UCR in two major categories: Crimes against person, or violent crimes, and crimes against property. Crimes against property (burglary, larceny $50 and over, and auto theft) make up the large volume of total Index offenses -- 86 percent in 1972. While the violent crimes against person -- criminal homicide, forcible rape, robbery, and assault -- make up only about 14 percent of the Index total, their volume seems to be increasing at a greater rate than that of the property crimes. The UCR reported a 67-percent increase in violent crimes from 1967 to 1972, as opposed to a 53-percent increase for that period in property crimes.

TABLE 4-2

PERCENT OF VICTIMIZATIONS REPORTED TO POLICE, 1972

Type of victimization	Chicago	Detroit	Los Angeles	New York	Philadelphia
Personal	37	39	33	38	36
Crimes of violence	48	51	44	45	47
Rape and attempted rape	53	55	46	47	55
Robbery	52	60	48	48	50
Robbery and attempted robbery with injury	69	75	64	58	64
Serious assault	70	72	69	58	70
Minor assault	64	79	57	41	57
Robbery without injury	57	62	51	51	57
Attempted robbery without injury	27	39	27	33	27
Assault	44	42	42	41	44
Aggravated assault	52	53	52	57	51
With injury	72	68	57	73	59
Attempted assault with weapon	41	46	50	44	46
Simple assault	37	28	36	31	36
With injury	54	41	46	45	54
Attempted assault without weapon	31	25	30	27	31
Crimes of theft	30	31	28	33	28
Personal larceny with contact	41	40	37	37	39
Purse snatching	64	74	58	53	57
Attempted purse snatching	19	(D)	(D)	22	(D)
Pocket picking	35	35	26	29	35
Personal larceny without contact	28	29	27	31	27
Household	48	50	44	49	46
Burglary	53	57	53	52	55
Forcible entry	74	75	75	71	78
Unlawful entry (without force)	40	45	30	52	44
Attempted forcible entry	35	44	25	29	31
Household larceny	26	35	25	25	22
Completed larceny	27	25	26	24	22
Attempted larceny	20	18	23	(D)	25
Auto theft	78	70	31	73	69
Completed theft	93	96	69	92	92
Attempted theft	55	26	26	26	39
Commercial	75	77	73	80	78
Burglary	71	76	71	79	75
Robbery	91	83	84	87	88
Attempted robbery	81	90	95	89	96
		61	50	64	66

NOTE: In general, small differences between any two figures in this table are not statistically significant because of sampling.
D Percent not shown because estimated number of victimizations in this category was too small to be statistically significant.

Source: National Crime Panel, Crime in the Nation's Five Largest Cities, Advance Report

The NCP survey data analyses carried out to date on 13 cities have found that, as a general pattern, slightly fewer than one-half of all incidents were carried out against persons, about 40 percent against households, and 15 percent against commercial establishments. Of the crimes against person, about 33 percent were of a violent nature.

Table 4-3 presents further breakdown of the UCR 1972 Index into particular offense categories. As is shown, burglary -- representing 40 percent of total offenses -- is the most prevalent crime, followed closely by larceny. By comparison, the most serious crimes, murder and rape, are extremely rare. (While the NCP surveys do not include murder, the crime of rape has been found by them to be the least common and "personal larceny without contact" the most common.)

Table 4-4 presents a further measure of the overall severity of the crimes against property, showing the dollar costs of the various types of property loss by crime in 1972.

3. The "Indicator" Offenses: Burglary and Robbery. Within the context of this document, both in general and with respect to the four individual environments, discussion often tends to focus upon the crimes of burglary and robbery as being representative of crimes of property and crimes of violence, respectively. As has been seen, burglary is the most frequent in occurrence of the Index Offenses and is thus deserving of the attention of the CPTED Program. However, as a crime of stealth, directly perpetrated against a structure and not an individual, and rarely

TABLE 4-3

INDEX OFFENSES BY CATEGORY, 1972

Crime Type	UCR Gross No.*	% of Total
Murder and nonneg. manslaughter	18,000	**
Forcible rape	46,000	**
Robbery	375,000	6
Individual		62
Commercial		24
Miscellaneous		14
Aggravated assault	389,000	7
Burglary	2,345,000	40
Residential		63
Nonresidential		37
Larceny over $50	1,838,000	31
Auto theft	880,000	15

*Figures rounded to nearest 1,000

**Less than 1%

Source: FBI UCR, 1972

TABLE 4-4

TYPE AND VALUE OF PROPERTY STOLEN AND RECOVERED, 1972

(2,240 cities 2,500 and over; 1972 estimated population 87,950,000)

Type of Property	Value of Property		Percent Recovered
	Stolen	Recovered	
TOTAL[1]	$1,188,600,000	$451,800,000	38
Currency, notes, etc.	123,000,000	10,000,000	8
Jewelry and precious metals	83,100,000	6,100,000	7
Furs	7,000,000	500,000	7
Clothing	32,300,000	4,500,000	14
Locally stolen automobiles	512,500,000	379,000,000	74
Miscellaneous	430,800,000	51,500,000	12

[1]Because of rounding, items may not add to totals.

Source: FBI UCR 1972

involving confrontation, it is inherently less fear-producing than the violent crimes.*** Robbery is the ideal indicator, for the purposes of this discussion, of these latter crimes. While it has been shown by both official reports and victimization surveys to occur about equally as frequently as assault, robbery is significantly more often an occurrence between strangers (see Section E.3 below). Thus, robbery is representative as a common, predatory offense against person.

C. Fear

On several grounds, it would appear that the greatest overall consequence of crime is the fear which it generates. As pointed out in the discussion of crime severity above, the majority of crimes do not result in an actual violent attack upon the individual. In terms of the individual victim, the economic consequences of crime, although not inconsiderable, are not alarmingly serious; the UCR reported in 1972 that the average value of property stolen in a street robbery was $186, and in a residential burglary approximately $300. Indeed, a field survey on victimization and fear of crime among the residents of Washington, D.C., conducted in 1966[2] found victimization by violent crime to be extremely rare and the monetary loss in all but a few instances reported by

***However, as a recent study[1] has shown, public alarm and actual fear over residential burglary have grown as a result of increases in victimization and the concomitantly increasing sense that one's home is not secure from invasion by strangers.

respondents to be very small. Thus, the survey report concluded that the high degree of fear and the profound effect upon respondents behavior arose far less from respondents' previous victimization experience than from their vicarious sense of a weakening of social controls.

Other field surveys conducted during the 1960's also registered high levels of fear among respondents. Unfortunately, the data on fear (to include information about perceived levels of crime nationwide and in respondents' own neighborhoods, levels of fear, and effects on respondents' willingness to move about their neighborhoods by day and by night, etc.) currently being collected by National Crime Panel attitude survey are not available at this date. However, a survey conducted nationwide in 1972 by a national magazine**** indicated that at least 70 percent of the 43,000 respondents were afraid to go out on the streets at night and were occasionally afraid while at home. Additionally, a 1969 survey conducted in 10 cities[4] found that, on the average, about 4 out of 10 residents felt somewhat or very unsafe on the streets of their neighborhood at night.

The various attitude surveys that have been conducted have ascertained that certain groups of people experience considerably more fear than others. The NORC Field Survey[5] (see Table 4-5), for example, found that women and nonwhite persons were considerably more fearful of walking neighborhood streets alone at night than were their male, white counterparts. Nonwhites

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**** "Are you personally afraid of crime?" Life, Jan. 14, 1972, P. 28. In Harries.[3]

TABLE 4-5

SOME NORC SURVEY RESULTS, 1965

HOW SAFE DO YOU FEEL WALKING ALONE IN YOUR NEIGHBORHOOD AFTER DARK?

Response	White		Non-White	
	Male	Female	Male	Female
Very safe	65%	35%	33%	16%
Somewhat safe . .	22	24	25	19
Somewhat unsafe .	9	23	22	28
Very unsafe . . .	4	18	20	37
Total . .	100%	100%	100%	100%
N	(4,628)	(7,495)	(646)	(1,033)

HOW LIKELY IS IT A PERSON WILL BE ROBBED OR ATTACKED ON THE STREETS AROUND HERE?

Response	White		Non-White	
	Male	Female	Male	Female
Very likely	6%	6%	14%	21%
Somewhat likely	14	15	25	30
Somewhat unlikely . . .	27	32	35	32
Very unlikely	53	47	26	17
Total	100%	100%	100%	100%
N	(4,661)	(7,443)	(642)	(1,018)

HOW CONCERNED ARE YOU ABOUT HAVING YOUR HOUSE BROKEN INTO?

Response	White		Non-White	
	Male	Female	Male	Female
Very concerned	11%	14%	22%	25%
Somewhat concerned . . .	36	38	29	37
Not worried	53	48	49	38
Total	100%	100%	100%	100%
N	(4,668)	(7,515)	(646)	(1,037)

Source: NORC Survey

were found to be considerably more fearful of being robbed or attacked in their neighborhoods than whites. Similarly, in the 10 cities survey,[4] black and female respondents in every city expressed more fear for their personal security than did white and male respondents. This survey also found that, in each city, feelings of insecurity were highest among those in low-income brackets.

However, in identical surveys recently conducted in Dayton, Ohio, and San Jose, California,[6] it was found that groups in these cities expressing most fear of crime differed in certain instances. While in Dayton blacks expressed far more fear over crime than did whites, in San Jose it was whites who expressed a higher degree of fear. While persons living in low-income areas in both cities felt more unsafe than persons in other areas, the difference was more dramatic in Dayton. As in other studies, these surveys found women experienced more fear than did men and, further, that older people were far more fearful than younger ones. Furthermore, fear has been found to be quite uniformly high among residents of cities over 50,000. Thus, considerably more central-city residents than suburbanites express fear of going out alone at night.

The crime of burglary generates substantial fear, fear not only of property loss but also concern for the safety of the household members. People tend to project what might have happened had they been present at the time of the break-in; however, burglars rarely enter occupied households.

The fact that fear of crime is usually operationalized in these studies as the subjects' estimate (perception) of the probability of victimization accounts for the high correlation between fear and the crime rate. Most citizens are aware of the nature of the crime problem in their immediate environment. While this does not mean that a subject can accurately assess the crime level in his neighborhood (i.e., estimates of the probability of victimization are usually greater than the real probabilities), it does suggest the process that links fear and crime.

There is, however, another dimension to the conception of crime, what Furstenberg has called "concern." By concern is meant the relative position of crime in the citizen's heirarchy of "life problems." Furstenberg has observed that those who define crime as the most important problem are least likely to live in high crime areas and, therefore, to be among those who have low fear of being victimized. While one might speculate as to why this may be the case, the important point to observe is that the efforts of CPTED are directed at fear and crime evidence, not necessarily concern. Additionally, CPTED can only effect fear by bringing it in closer approximation to the real probability of victimization and/or by reducing the real probability of victimization.

D. Environmental Patterns

In this section, the geographical distriction, specific environmental locale, and temporal patterns of the target crimes are discussed.

1. <u>Geographical Distribution.</u> There is no general trend that

would suggest that Index crimes (as reflected by the UCR) are unusually serious within some particular region of the United States. However, if these types of crime are compared with respect to city size, conspicuous differences do appear. As Table 4-6 indicates, the violent crimes in 1972 tended to rise with increase in city size; property crimes, however, tended to remain at similar levels regardless of city size. As is shown in Table 4-6, these tendencies also held true with respect to the relative incidence of the indicator crimes, robbery and burglary.

A somewhat different perspective emerges when one looks at the incidence of crime for the different types of areas within Standard Metropolitan Statistical Areas. Table 4-7 compares crime rates by central city versus suburb and rural areas, as indicated by the 1972 UCR. Crimes such as rape, burglary, and (particularly) robbery are much more common in central cities than in suburbs, while crimes of larceny are more evenly distributed between city and suburbs. Rural areas experience comparatively little crime. In general, then, those types of crime with which CPTED is concerned are concentrated within the city. This pattern is discussed in greater detail in subsequent chapters on the individual environments.

2. Environmental Locale. Table 4-8, which was compiled from preliminary 1973 results made available by the NCP National Survey, indicates the relative incidence of the various types of crimes against individuals by specific place of occurrence. As can be seen, all of these crimes (with the exception of larceny by pickpocket) occur by far the most frequently on the streets or in parks, fields, and other open spaces;

TABLE 4-6

CRIMES BY CITY SIZE, 1972

RATES OF CRIM

Reporting Cities Size	Index Crimes		Indicator Crimes	
	Violent Crime Rate*	Property Crime Rate**	Robbery Rate***	Burglary Rate***
100,000-250,000	502	3,671	219	1,708
250,000-500,000	721	4,034	376	1,970
500,000-1,000,000	856	4,035	453	1,825
over 1,000,000	1,262	3,838	787	1,863

*Aggregate rate of violent crimes (murder, forcible rape, robbery and aggravated assault) per 100,000 population

**Aggregate rate of property crimes (burglary, larceny, and auto theft) per 100,000 population

***Crimes per 100,000 population

Source: FBI UCR 1972

TABLE 4-7

CRIME RATE BY AREA, 1972

(Rate per 100,000 inhabitants)

Crime Index Offenses	Area			
	Total U.S.	Cities over 250,000	Suburban	Rural
Total	2,829.5	4,947.9	2,363.6	1,084.4
Violent	397.7	998.6	221.7	143.6
Property	2,431.8	3,949.3	2,141.9	940.8
Murder	8.9	10.7	4.6	7.4
Forcible rape	22.3	47.1	17.1	11.2
Robbery	179.9	578.8	72.3	16.1
Aggravated assault	186.6	353.0	127.8	109.0
Burglary	1,126.1	1,877.5	963.1	507.5
Larceny $50 and over	882.6	1,104.6	890.5	363.6
Auto theft	423.1	967.2	288.3	69.7

Source: FBI UCR 1972.

TABLE 4-8

PERSONAL CRIMES BY PLACE OF OCCURRENCE, 1973

	Total Incidence	% Inside Home or Other Bldg.	% Vacat. Home, Hotel, Motel	% Near Home	% Inside Nonres. Bldg., Pub. Conv.	% Street, Park, Field, etc.	% Inside School	% Elsewhere	% N.A.
TOTAL (Crime Against Person)	5,213,200	11.3	0.3	8.8	15.9	46.6	6.8	10.1	0.1
Assaultive Violence	4,108,160	12.5	0.4	9.4	14.3	46.1	6.7	10.7	--*
With Theft	361,480	16.2	0.4	7.9	4.9	58.2	5.0	7.3	0.0
Rape	6,107	49.1	0.0	0.0	0.0	0.0	0.0	50.9	0.0
Attempted Rape	4,240	63.8	0.0	0.0	0.0	36.2	0.0	0.0	0.0
Serious Assault	194,440	14.6	0.7	9.5	2.6	64.1	1.5	7.0	0.0
With Weapon	171,240	13.9	0.8	9.0	2.9	64.8	1.5	7.0	0.0
No Weapon	23,200	19.5	0.0	13.1	0.0	58.9	1.5	7.0	0.0
Minor Assault	156,666	15.8	0.0	6.4	8.1	53.8	9.7	6.3	0.0
Without Theft	3,746,700	12.1	0.4	9.5	15.2	44.8	6.8	11.1	--*
Rape	36,480	31.6	0.0	0.0	0.0	45.4	0.0	23.0	0.0
Attempted Rape	114,307	27.3	0.0	6.1	5.7	47.8	1.8	11.3	0.0
Serious Assault	456,853	11.5	0.3	11.2	14.2	48.9	2.0	11.9	0.0
With Weapon	383,293	10.9	0.3	11.0	14.4	50.7	1.6	10.9	0.0
No Weapon	73,560	14.7	0.0	11.9	12.9	41.5	4.0	15.2	0.0
Att. Assault, Weapon	870,840	8.2	0.7	10.0	15.1	48.9	4.6	12.5	0.0
Minor Assault	560,213	18.0	0.3	6.8	10.4	45.7	8.6	10.5	0.0
Att. Assault, No Weapon	1,708,027	10.9	0.2	10.2	18.1	41.0	9.5	10.0	--*
Personal Theft, No Assault	1,105,040	6.8	0.3	6.6	22.0	49.2	7.3	8.0	0.3
Robbery	354,520	14.3	0.9	9.9	6.7	60.2	4.1	3.9	0.0
With Weapon	157,733	11.8	1.1	13.0	8.3	66.1	0.0	0.5	0.0
No Weapon	177,773	10.3	0.0	7.3	7.5	54.4	13.6	7.0	0.0
Attempted Robbery	268,040	5.8	0.0	6.8	11.4	56.8	11.8	7.3	0.0
With Weapon	111,500	4.4	0.0	12.7	9.6	63.8	1.5	6.0	0.0
No Weapon	156,520	6.9	0.0	2.6	12.7	51.8	19.1	6.8	0.0
Pursesnatch, No Force	100,613	0.0	0.0	7.2	27.9	55.3	5.7	4.5	0.0
Att. Pursesnatch, No Force	74,000	0.0	0.0	4.3	11.3	62.5	8.9	11.0	2.0
Pocket Picking	307,936	2.9	0.0	2.8	49.2	23.2	7.9	13.4	0.5

*Too small for significance

Source: Computed by USR&E from NCP's preliminary National Survey results (for first three quarters of 1973).

nonresidential buildings are the next most common locale, followed by residential buildings. Of the violent crimes, rapes and assaults tend to occur more frequently within residences than do robberies. The school environment appears to be relatively heavily victimized by nonassaultive, unarmed robberies.

3. Temporal Distribution. Temporal patterns vary considerably between specific crimes, as evidenced by the UCR and various analytic studies. The violent crimes of murder, rape, and assault tend to occur more frequently at night, on weekends, and during the summer months,[7,8,9,10] while robbery is more common at night, on weekends, and in colder months.[7,11] Residential burglaries are more likely to occur in the daytime during the week, when people are away from home. However, nonresidential burglaries occur more frequently at night and on weekends, when commercial establishments are closed. For burglaries, no significant monthly or seasonal patterns emerge.[12,13,14]

Table 4-9 provides data based on surveys in the Pilot Cities of Dayton and San Jose on the temporal distribution of robberies, burglaries, and assaults; it generally confirms the findings discussed above.

E. Offender/Victim Profiles

Data on personal characteristics of offenders and victims and on the victim/offender relationship are summarized in this section.

TABLE 4-9

CRIME BY TIME OF OCCURRENCE FOR SAN JOSE AND DAYTON, 1972

		% 6 AM-6 PM	% 6 PM-Midnight	% Midnight-6 PM	% Undetermined
PERSONAL CRIMES					
Robbery	San Jose	39	52	9	---
	Dayton	32	53	13	2
Assault	San Jose	47	41	12	---
	Dayton	37	47	15	1
COMMERCIAL CRIMES					
Burglary	Dayton	5	15	42	38
	San Jose	10	19	36	35
Robbery	Dayton	*	58	*	42
	San Jose	*	53	*	47

*Sample too small to be statistically reliable.

Source: Crime and Victims: A Report on the Dayton-San Jose Pilot Study, LEAA, 1974

1. Offenders.* Data collected in the UCR and by other studies indicate that the majority of offenders in the common predatory crime categories -- and particularly with respect to the indicator crimes of robbery and burglary -- tend to be overwhelmingly male, young, and often nonwhite residents of central-city areas. Table 4-10 summarizes characteristics of UCR Index arrestees for 1972.

2. Victims. Victimization studies have shown that some segments of the population are more heavily victimized by the common predatory crimes than others. In general, the victims of the crimes against person -- such as robbery, assault, murder, rape, and personal larceny -- are likely to be nonwhite and of a low-income bracket. Victims of the crimes against property are somewhat more frequently white and, in both white and nonwhite groups, the more affluent persons are more heavily victimized by these crimes. A victimology survey conducted in Portland corroborates this tendency; when all other socioeconomic variables are controlled, areas with the highest median income are burglarized more frequently.[15] (These findings correspond with the geographic distributions discussed above; the crimes against person are concentrated in the central cities, where low-income and minority groups are predominately located, but the crimes against property show more even distribution.)

*Due to the low percentage of crimes that are cleared by an arrest, offender data are very weak. They are presented here and in subsequent sections to highlight the need for such data, not as an accurate estimate of offender characteristics.

TABLE 4-10

CHARACTERISTICS OF ARRESTEES, 1972

Offense Charged	Percent Male	Percent Female	Percentage Under 15	Percentage Under 18	Percentage Under 21	Percentage Under 25	Percent Distribution Total	White	Negro	Indian	Chinese	Japanese	All Others
TOTAL	84.9	15.1	9.5	25.6	39.3	53.5	100.0	74.0	24.3	0.9	0.1	(1)	0.3
Criminal homicide:													
(a) Murder and nonnegligent manslaughter	84.6	15.4	1.5	10.9	24.6	43.7	100.0	27.5	67.8	.5	.3	. . .	3.8
(b) Manslaughter by negligence	88.2	11.8	1.1	9.4	26.1	46.8	100.0	72.1	24.6	.4	. . .	. . .	2.9
Forcible rape	100.0	. . .	4.2	19.8	40.0	62.6	100.0	37.5	60.0	.6	. . .	. . .	.9
Robbery	93.5	6.5	10.4	31.9	54.0	75.9	100.0	24.9	73.5	.6	. . .	. . .	1.0
Aggravated assault	86.8	13.2	5.8	17.5	30.3	47.3	100.0	49.3	48.8	.6	.2	.1	1.0
Burglary - breaking or entering	94.8	5.2	21.7	51.0	69.8	85.3	100.0	67.7	30.8	.7	.1	. . .	.8
Larceny - theft	70.3	29.7	24.4	49.7	65.2	77.2	100.0	70.1	28.4	.6	.1	.1	.7
Auto theft	94.3	5.7	13.7	33.6	71.5	83.8	100.0	67.2	30.8	1.1	.1	. . .	.9

Source: FBI UCR 1972.

The NORC victimization study findings with respect to the above are presented in Table 4-11. In addition, this study offers some interesting evidence with respect to the interplay of race, sex and age factors. Among whites, men are more often the victims of robberies and assaults while, among nonwhites, women are more heavily victimized. Also, victimization by assaultive crime is found to be highest for men and women in the 20- to 29-year-old age group. It must be borne in mind that, as the young tend to be out on the streets more frequently than older persons, their greatest exposure may explain this finding. However, additional studies have indicated that the elderly are frequently the victims of robbery.[16,17]

Initial results of the 1973 NCP National Victimization Survey are of particular interest with respect to victim characteristics because they afford the most recent available evidence and, furthermore, because stranger-to-stranger incidents are separated out. Tables 4-12 through 4-14 show computations, based upon preliminary results, of distribution of stranger-to-stranger personal victimizations by race, sex, age, and income. Again, one finds that blacks are relatively frequently the victims of crimes against person -- particularly of robbery and rape. By this survey, males -- both black and white -- are more heavily victimized overall than are females. The results for age distribution again point to heavy victimization of the young; here, those under 24 are shown to be bearing the brunt of these crimes. However, this survey also shows the elderly are disproportionately often the victims of robbery,

TABLE 4-11

DISTRIBUTION OF CRIME BY RACE AND INCOME, 1967

Crime *	White			Non-White		
	$0-$2,999	$3,000-$5,999	$6,000-$9,999	$0-$2,999	$3,000-$5,999	$6,000+ **
Part I Total	2,124	2,267	1,685	2,894	2,581	3,387
Homicide	0	0	0	56	0	0
Forcible rape	58	46	0	111	60	121
Robbery	116	91	42	278	240	121
Aggravated assault	146	289	147	389	420	121
Burglary	1,310	958	764	1,336	1,261	2,056
Larceny ($50+)	378	700	565	501	300	363
Vehicle theft	116	183	167	223	300	605

*Rate per 100,000 population of each specific race and income group.

**Too few cases of non-whites above $10,000 to maintain as separate category.

Source: NORC Survey

CONTINUED

1 OF 4

TABLE 4-14

PERSONAL VICTIMIZATION BY FAMILY INCOME, 1973 -- CRIMES AGAINST PERSONS (STRANGER)

	Total Incidents*	Rates**	% Under $3,000	% $3,000-$7,499	% $7,500-$9,999	% $10,000-$14,999	% $15,000-$24,999	% $25,000+	% N.A.
CONTROL TOTALS	161,043		9.7	21.8	12.3	25.4	16.9	5.4	6.4
TOTAL	4,148	25.6	14.3	25.1	13.0	21.4	14.0	5.0	7.2
Assaultive Violence	3,029	18.7	13.2	24.7	13.3	21.1	14.4	5.0	7.5
With Theft	328	2.0	17.8	26.8	13.4	16.6	13.0	4.3	7.9
Rape	6	--***	26.2	50.1	23.9	0.0	0.0	0.0	0.0
Attempted Rape	4	--***	32.3	35.4	0.0	0.0	32.3	0.0	0.0
Serious Assault	186	1.2	15.9	24.7	14.6	16.1	16.7	5.0	7.0
With Weapon	163	1.0	11.8	25.5	17.0	17.8	16.7	2.8	8.0
No Weapon	22	0.1	29.2	21.5	11.7	15.1	16.7	15.8	0.0
Minor Assault	131	0.8	8.1	32.9	10.4	24.7	9.7	6.7	7.5
Without Theft	2,701	16.7	13.1	24.7	12.7	25.6	14.7	5.2	4.1
Rape	26	0.2	32.1	21.4	11.7	16.3	11.7	0.0	6.7
Attempted Rape	93	0.6	10.9	27.2	11.6	15.2	10.9	4.6	3.6
Serious Assault	313	1.9	22.5	28.4	11.1	22.5	5.5	4.6	5.3
With Weapon	275	1.7	22.3	28.4	12.6	19.8	6.3	5.2	5.7
No Weapon	38	0.2	25.1	28.4	10.0	27.2	0.0	0.0	8.3
Att. Assault, With Weapon	780	4.8	12.2	28.5	16.1	21.9	13.9	5.7	6.7
Minor Assault	317	2.0	9.5	20.2	12.6	30.6	15.5	7.0	4.6
Att. Assault, No Weapon	1,173	7.3	12.0	22.2	9.3	30.4	16.5	4.8	4.8
Personal Theft Without Assault	1,119	6.9	17.7	34.5	12.2	10.1	8.0	5.2	4.3
Robbery	358	2.2	10.3	40.3	7.0	22.8	7.2	2.8	9.5
With Weapon	211	1.3	10.2	42.1	6.1	24.9	6.3	4.4	6.1
No Weapon	153	0.9	10.5	39.3	8.2	19.2	9.1	1.0	12.6
Att. Robbery	279	1.7	12.3	24.2	12.5	18.6	14.1	4.4	12.8
With Weapon	124	0.8	18.5	28.6	11.7	12.0	14.5	3.5	11.1
No Weapon	159	1.0	17.7	21.8	12.5	23.6	12.1	5.0	7.2
Pursesnatch, No Force	98	0.6	35.1	21.1	14.1	18.1	7.1	2.2	2.3
Att. Pursesnatch, No Force	76	0.5	15.8	29.5	22.1	11.6	8.4	5.3	7.2
Pocket Picking	308	1.9	23.5	24.7	12.4	12.1	15.3	5.1	7.0

*In 1,000's
**Per 1,000 population
***Too small for significance

Source: Computed by USR&E from NCP's preliminary National Survey results (for first three quarters of 1973).

as well as other personal thefts. Finally, this survey shows personal victimization as falling most heavily upon the lowest income group.

Results of this and other NCP surveys on personal household and commercial victimization are discussed in greater detail in Chapters 5 and 6.

3. Victim/Offender Relationship. The predominant relationship, victim to offender, varies considerably amongst the different crime types. The crimes against property are generally carried out by stealth so that the victim does not see and, presumably, does not know the offender. Table 4-15 presents data from two sources on the frequently occurring crimes of violence. The 17 largest cities' findings are typical of most to date -- indicating that, while robbery is predominantly a stranger-to stranger crime, rapes and particularly assaults tend to occur much more often among acquaintances.**** The more recent NCP data, as shown in the right-hand column of Table 4-15, indicate a far higher stranger-to-stranger percentage for rape and assault, and also for robbery. This suggests either a major reversal of the conventional wisdom or some artifact of the NCP methodology (see Section B of Chapter 3).

****For example, Amir[9] states that 42 percent of rapes occur between strangers; a Field Survey in Washington, D.C.,[2] found only 36 percent of rapes and 19 percent of serious assaults were stranger-to-stranger.

TABLE 4-15

STRANGER-TO-STRANGER CRIMES

Crime	17 Largest* U.S. Cities - 1967 (%)	13 U.S. Cities** 1/2 million or more - 1972 (%)
Rape	53	72-91
Robbery	83	84-97
Assault	21	63-85

*Survey of 17 Largest U.S. Cities 1967 (Police Data), National Violence Commission, Vol. 11: Crimes of Violence, P. 217-18. Data is averaged.

**Advance Reports, National Crime Panel (Victimization Data). Data not averaged (overall range is shown).

F. Displacement

The temporal, tactical, target, territorial, and functional avenues of displacement are important considerations in the total crime picture. Certainly, a crime control strategy that results in total displacement is of little value (except, for example, if the displacement is to a less severe and less fear-producing crime). The result of Reppetto's review of the current research in displacement is contained in a separate document, "Elements of CPTED." That review suggests that the displacement effect of various strategies would differ significantly; that displacement of common crimes in high-incidence areas can be held to a minimum, thus providing a net gain for society; and that displacement research is a priority item in a comprehensive CPTED Program

CHAPTER 5. THE RESIDENTIAL ENVIRONMENT

As stated in the previous chapter, much of the general information on crime and fear is applicable to the residential environment. This chapter addresses the residential environment with a greater degree of specificity, examining crime and fear problems in terms of particular residential subenvironments and including not only crime-related but also environment- and Program-related criteria. The introduction in Section A provides an outline of the chapter contents, while Section B describes available source materials. Following presentation of crime-related information in Section C, the chapter concludes by assessing potential crime/environment targets in light of the three types of criteria. It is recommended that CPTED focus on the crime of burglary among dwelling units located in a neighborhood of single- and multi-family residences in an inner-ring suburb.

A. Introduction

Because the home is the center of the family life and is each person's principal refuge from outside dangers and pressures, its security is essential to a personal sense of well-being. Unfortunately for many residents, this security is constantly threatened. Thus, reducing crimes in or around the home could contribute substantially to a general reduction not only of the amount of crime but also of the belief that crime is a significant danger in our society.

The purposes of this discussion are to describe the types and patterns of crime in and around residences and to suggest how these patterns relate

to the possibility of crime reduction by means of environmental design.* Consideration is limited to those crimes that occur in residential environments principally between strangers, for it is these crimes that environmental design strategies for the residential setting can best be expected to influence. Therefore, murder, rape, and aggravated assault are not considered here as primary CPTED focus, although they may be indirectly affected by CPTED strategies. The remaining predatory crimes are considered, as fully as is possible on the basis of available data, in terms of incidence, severity, and fear engendered. Also, certain patterns that emerge in light of environment-related variables -- central-city and suburban land use and social characteristics, specific sites within residential areas (the dwelling unit itself; halls, lobbies, elevators, and other locales inside the residential building; street, yards, and other outdoor residential areas), and the physical characteristics of housing structures -- are described. Discussions also encompass characteristics of victims and offenders and the victim/offender relationship.

In sum, the following crimes are considered in light of their predominance within the specific residential target sites: (1) Burglary,

*Since it has already sponsored a number of studies of residential crime and security in public housing projects, LEAA feels that understanding of the relationship between environmental design and crime control in public housing has been substantially increased. Consequently, this chapter does not concern itself with public housing.

which constitutes the major residential crime and which takes place inside the residence; (2) robbery, the predominant crime in areas inside the residential building and in neighboring areas; and (3) household larceny, as it occurs inside buildings and within residential areas.

B. Source Materials

Various deficiencies, for purposes of the present study, of available crime data have been noted in Chapter 3. Unfortunately, with respect to the residential mode, none of the available data sources considers (and thus permits simultaneous analysis of) all the pertinent environmental and other characteristics stated in Section A above. One serious drawback arises from the fact that current crime data for the residential mode have traditionally been analyzed in terms of the modus operandi of the offense and/or the characteristics of the offender and his victim, with the examination of the environment in which the crime has occurred receiving relatively scant attention. Because crimes reported to have occurred inside a residence or within the interior of a residential building (basement, laundry room, elevator) are seldom explicitly linked with a specific kind of land use -- primarily residential, mixed residential/commercial, etc. -- it is difficult to develop crime control strategies that are sensitive to locale.

An even more serious deficiency of existing data, perhaps, is that their categorization by the location of the crime is neither standardized nor precise. Frequently, for example, crime data are broadly cataloged as "off the street" or "on the street," categories that could include any

number of environments. In some studies, crimes against the household include property crimes which may have been nowhere near the place of residence but rather occurred to *members* of a household. Even when crimes are identified with some kind of residential environment, the identification is frequently imprecise, lumping adjacent streets, halls, elevators, backyards, and dwelling units into the category of "in or near residence."

Table 5-1 indicates the wide variations between the major source materials used in this chapter and identifies the subject matter addressed by each.

C. Crime/Environment Discussion

This section presents data on severity, fear, environmental patterns, and offender/victim profiles, together with a brief summary of intervention strategies against residential crime. The discussion is organized with respect to the three dominant crime categories -- burglary, robbery, and household larceny -- in the context of their specific subenvironments.

1. Burglary: Inside the Residence. Utilizing the findings of the UCR, victimization surveys, and various analytic studies, residential burglary information is presented below for the crime-related criteria. Discussion primarily centers around the crime pattern in terms of particular residential land use areas and the socioeconomic characteristics of their respective populations.

TABLE 5-1

THE RESIDENTIAL ENVIRONMENT -- SOURCE MATERIALS

Source	Scope		Crime Related Information						Residential Targets		
	National	Local	Severity	Fear	Offender/ Victim	Environment	Displacement	Intervention Strategies	A. Inside Residence	B. Inside Building	C. Near Residence
1) DSSH Victimization Report, Washington, D.C.		x	x	x	x	x			x	COMBINED	x
2) NORC National Victimization Survey	x		x	x	x	x			x	COMBINED	x
3) University of Michigan Victimization Survey	Spotty	x	x	x	x	x			x	COMBINED	x
4) San Jose Victimization Survey		x	x	x	x	x			x	COMBINED	x
5) Five Largest Cities Survey Data		x	x						x	COMBINED	x
6) Crime in Eight American Cities		x	x						x	COMBINED	x
7) National Crime Panel Data	x		x			Spotty			x	COMBINED	x
8) Crimes of Violence	Spotty		x	x	x	x					
9) Uniform Crime Reports	x		x		x	x					
10) Patterns of Residential Crime		x	x	x	x	x	x	x	x	COMBINED	x
11) Patterns of Burglary		x	x		x	x	x	x	x	COMBINED	x
12) Urban Crime Patterns		x			x	x					
13) Crime of Robbery	Spotty	Spotty	x		x						
14) Formal and Informal Social Control		x		x		x					
15) Trends & Patterns in Robbery	Spotty	x	x		x	x	x	x	x	COMBINED	x
16) Burglary in a Suburb		x	x	x	x	x	x	x	x	COMBINED	x
17) Anatomy of a Metropolis		x	x		x	x					
18) Prevention and Control of Robbery		x	x	x	x	x					

a. Severity. The severity of residential burglary can be examined in terms of both numerical incidence and dollar loss. Burglary is at once the most prevalent and the most clearly defined of those crimes that occur in residential areas. In 1972, the UCR[1] noted that 2,345,000 burglaries had been recorded by the police and that 63 percent of these burglaries (or 1,477,000) were residential, a rate of approximately 2.2 burglaries per 100 households.** Moreover, the crime of burglary contributed 40 percent of the FBI Crime Index offenses. The first National Victimization Field Survey,[2] conducted for the calendar year 1965, reported a residential burglary rate of three times that indicated in the UCR for that year. Subsequent victimization surveys have only underscored the magnitude of the difference between official and actual burglary incidence. A study of victimization in three precincts in Washington, D.C., in 1966 found a residential burglary rate four times that recorded by official police statistics.[3]

The most recent victimization data, those obtained from the National Crime Panel (based on crimes which were reported to have occurred in the calendar year 1973 and which, to date, have been tabulated for 9 months of that year) reveal an annual residential burglary rate of 9 per 100

**In 1970, the United States Census reported that approximately 210 million people were living in 68,627,366 housing units.

households. Stated another way and assuming no multiple victimizations of households, 1 of 11 households was subjected to a burglary or an attempt in 1973. The findings of the NCP survey of burglaries in 1972 in the five largest cities (Chicago, Detroit, Los Angeles, New York, and Philadelphia) virtually match the proportions of residential and nonresidential burglary, 62 percent and 38 percent, respectively, as reported by the UCR.

The extent of losses resulting from burglary reiterates the weriousness of this offense when its effects are viewed in total. In 1965, the UCR indicated an estimated total loss of $500 million. As noted above, the actual loss is considerably higher than even this figure would suggest.

In terms of loss per individual incident, losses can generally be termed "moderate." A national survey, also conducted in 1965, reported a net loss after recovery of $170 as the average residential burglary loss, somewhat lower than the average of $255 reported by the UCR.[4] (This difference may perhaps be explained by the likelihood that smaller losses are often not reported to the police.) Reppetto's study of residential burglary found the majority of cases involved losses under $300.[5] In a recent study of suburban residential burglary, the researchers found most striking the amounts and kinds of valuable and highly visible goods that were *not* stolen.[6] However, the results of the National Crime Panel Survey indicate that, in almost every instance of forcible entry (31 percent of all burglaries, including attempts), something was reported to have been taken from the household. The NCP has not yet calculated the incidence

of property loss associated with unlawful entries without force, but there is no reason to believe it is any lower than the incidence of loss associated with forcible entry.

b. Fear. On the basis of the findings indicating that the dollar losses incurred by individual incidents of residential burglary for the most part range from negligible to moderate, several studies have concluded that the greatest consequence of the crime is actually the fear or concern it causes. Despite the fact that burglars rarely enter occupied households, the crime of burglary does generate substantial fear -- fear not only of property loss but, also, concern for the safety of household members, as people tend to project what might have happened had they been present at the time of the break-in. More indirectly, residential burglary causes alarm because it shakes residents' beliefs that their homes are secure from invasion by strangers. In late 1972, a nationwide Gallup poll found that one of six persons reported not feeling safe in his home at night*** -- a particularly alarming fact if it is recognized that surveys consistently have found that most people have no further retreat to safety than their own homes.

***Discussed in Keith D. Harries, "The Geography of Crime and Justice," McGraw Hill, 1974.

c. Environmental patterns

(1) Geographical distribution. By focusing upon the differential crime trends in city and suburban areas, one can begin to discern the relationship of land use and social characteristics to burglary rates as they vary between these areas. In their postwar study of the New York metropolitan region, Hoover and Vernon[7] posited a system for the differentiation of metropolitan areas and their characteristics which is perhaps the most useful one for crime pattern analysis. (This study is more recent than the work of Burgess on Concentric Circles done in the 1920's.) Dividing the metropolitan area into core, inner-ring, and outer-ring suburbs, they define the core as the area where land use is most highly developed, with population density seven or eight times higher than that of the inner ring. The home of many low-income and minority persons, it contains a high percentage of multiunit housing, much of it in poor condition, plus a smaller collection of luxury apartment complexes. In terms of neighborhood development, the core area exhibits processes of downgrading and conversion as young people leave slum areas, which are often converted by urban renewal into low-income housing or luxury apartments. The core area is largely the central-city area, where social problems such as crime are found to be most serious.

The inner ring, by Hoover and Vernon's definition, is considerably less dense and contains as-yet undeveloped land -- much of it, however, currently in the process of development through the addition of apartment buildings. It is primarily the home of middle-income persons living in

single-family homes, although some areas may contain a considerable number of apartments. Inner-ring areas are beginning to experience some of the crime and other social problems of the core areas.

The outer ring consists of the more "countrified" area still containing a considerable amount of vacant land. Its population varies in income range but lives mostly in single-family housing. In the outer ring, commuting to the central core on a regular basis is much more difficult than in the inner. As yet, these areas are not experiencing a significant incidence of social problems.

It would be most useful to provide fine-grained comparisons of burglary and other residential crime rates and characteristics utilizing Hoover and Vernon's distinctions of core and inner-ring and outer-ring areas. Unfortunately, as noted in Section B of this chapter, much of the victimization data does not facilitate such comparisons. However, some pertinent evidence relating to geographic patterns is available.

As noted in Chapter 4, crime rates in general tend to decrease with distance from the metropolitan core. Data collected by NCP victimization surveys in the Nation's major cities indicates a disproportionately high concentration of the residential burglary in these dense urban centers. The NCP survey of the five largest U.S. cities revealed the rates in Table 5-2. Interestingly, the findings of surveys taken in eight other selected large cities show even higher rates of burglary, varying from a low of 116 to 161 per 1,000 households (see Table 5-3).

TABLE 5-2

BURGLARY RATES BY FIVE LARGEST CITIES, 1972

(Rate per 1,000 households)

Weighted Average	Chicago	Detroit	Los Angeles	New York	Philadelphia
104	118	174	148	68	109

Source: Crime in the Nation's Five Largest Cities: Advance Report

TABLE 5-3

BURGLARY RATES BY EIGHT SELECTED CITIES, 1972

(Rate per 1,000 households)

Weighted Average	Atlanta	Baltimore	Cleveland	Dallas	Denver	Newark	Portland
137	161	116	124	147	158	123	151

Source: Crime in Eight American Cities: Advance Report

TABLE 5-4

DISTRIBUTION OF BURGLARY RATES BY RACE AND INCOME, 1965*

Income	White	Nonwhite
$0-$2,999	1,310	1,336
$3,000-$5,999	958	1,261
$6,000-$9,999	764	2,056
Above $10,000	763	**

*Rate per 10,000 population of each specific race and income group.

**Too few cases of nonwhites above $10,000 were found to maintain a separate category; these cases are included in $6,000-9,999.

Source: Ennis

Ennis' national victimization data[2] also indicated that total burglary rates decreased with distance from the city center. The burglary rate for central parts of metropolitan areas was found to be 1,335 per 100,000 of population, while the rate for metropolitan suburbs was 839 and the rate for nonmetropolitan areas was 727. This general pattern adheres in all regions of the United States, with minor exceptions. In the Northeast and in the West, the nonmetropolitan rate is higher than the suburban rate; in the South, the suburban rate is only slightly lower than the central metropolitan rate.

Additional evidence seems to indicate that burglary patterns in the suburbs differ from those in the central city. A study of residential burglary in metropolitan Boston noted that no suburban area had rates so high as certain city areas, the highest rates being found in core area housing projects.[5] Accessibility to the central core seemed to be an important factor in determining the rate of burglary in the suburbs. Scarr's analysis of burglary in the Washington, D.C., metropolitan area[4] uncovered another interesting difference. The study indicated that, while patterns of burglary were stable in the city (certain neighborhoods had high or low rates every year), they fluctuated in the suburbs. There, the rates of burglary tended to vary by neighborhood, from year to year. This study also noted the use of expressways by organized burglary groups. One interesting finding was that, as an inner-ring suburban area increasingly displayed urban characteristics, its crime configuration began to resemble

that of the core city. Another study, in fact, has suggested that, due to rapid increases during the 1960's, residential burglary has become a serious and alarming problem for many suburban communities.[6]

(2) Temporal distribution. Most studies have shown that residential burglaries take place primarily during the daytime and on the weekends. However, an additional difference between core and suburban areas has been suggested by Reppetto's study of residential crime. A detailed analysis of an inner-ring Boston suburb, composed of above-average income persons, indicated that residential burglary occurred mostly at night (61 percent) and on weekends. This was the reverse of the city pattern and stemmed from the fact that suburban residents engaged in recreation away from the home at night and on weekends to a much greater extent than city residents. The advantage of approaching the target in low-density suburban areas under cover of the night may also account for the frequent nighttime attacks.

(3) Demographic Distribution. A series of situations have assessed the relationship between the occurrence of reported crimes (i.e., crimes known to police -- "CKP") and socioeconomic characteristics of city areas (i.e., census tracts and/or social areas). While it is not the intention here to review these issues, it should be noted that the research has established the existence of very high relationship between crime and demographic and socioeconomic characteristics of city areas. In particular, age structure, income level, overcrowding, educational level and percentage of homeownership have proven to be strong correlates of CKP and, by implication, victimization level.

d. Offender/victim profiles

(1) Victims. Findings with respect to the victims of residential burglary show a high degree of correspondence with findings on geographical distribution, since geographical "location" must be taken to represent a coalescence of social and economic factors.

Because of the interplay of various factors, it is not possible to make broad, clear-cut conclusions with reference to which population groups are bearing the brunt of burglary victimization. Initial national victimization survey data collected during the 1960's (see Table 5-4) suggested that blacks, at all levels of income, suffered higher rates of victimization than whites. However, whites were found to experience decreasing rates of burglary as their incomes increased, whereas burglary rates of black households increased as black income increased.

Reppetto's findings for the Boston metropolitan area, on the other hand, suggested that victimization rates rose with income among both whites and blacks, with the highest burglary rates falling on blacks with the highest incomes. This study found the average annual burglary rate of predominantly black (over 63-percent black) areas to be approximately three times that of predominantly white (less than 20-percent black) areas, and approximately twice that of mixed (20-percent black) areas. Similarly, a victimization survey conducted recently in San Jose and Dayton[8] found black families were victimized at twice the rate of white families. Furthermore, black families were far more often, proportionately, the victims of forcible attacks and of burglaries in which loss

exceeded $500. These data also pointed to higher income blacks as the group most heavily victimized; in attacking the inner-city ghettoes, burglars in Dayton seemed to have chosen the more prosperous homes.

Similar patterns between burglary rates and race were revealed in the Five Largest Cities Survey and the Eight Selected Cities Survey. These NCP surveys reported an annual rate of 8.4 per 100 white households, as compared to 13.8 burglaries per 100 black households.

Thus, as several victimization studies have emphasized, the relationship between burglary rate and a certain individual variable, such as victim's income, may be obfuscated by consideration of another variable such as, in this analysis, victim's race. Therefore, data which do not provide controls through cross-tabulation of such variables are difficult to interpret. These considerations apply with respect to analysis of data collected by the NCP surveys, as presented in Table 5-5 on household victimization by amount of family income. In fact, little apparent pattern emerges in the rate of household burglary, except, perhaps, for a tendency of the rate to be highest amongst the wealthiest income group.

Two additional studies offer further evidence of the necessity to consider the interplay of various factors. Analysis of the highest rate and lowest rate residential tracts and two contiguous suburban counties by Scarr's study in Washington, D.C., revealed that the social indicators of poverty and segregation showed only weak association with burglary rates through time in the two suburban counties but correlated fairly well with high burglary rates in the central city.[4] In the latter, medium-high,

TABLE 5-5

HOUSEHOLD VICTIMIZATION BY FAMILY INCOME, 1972

Amount of Family Income	Five Largest Cities Survey*	Eight American Cities Survey*
Less than $3,000	52-154	115-165
$3,000-$7,499	69-185	115-172
$7,500-$9,999	80-182	109-177
$10,000-$14,999	64-173	99-157
$15,000-$24,999	81-192	111-186
$25,000 or more	58-189	159-304

*Range or rates per 1,000 households.

Source: NCP Surveys

positive, rank-order correlations were obtained between burglary and the following social characteristics: Percent overcrowded housing units, percent lower cost residential units, and percent black overcrowded housing units. Similarly, Boggs[10] found (via a partial correlation analysis) that residential burglary occurrence rates were directly associated with the percentage of blacks in the population of the census tract, regardless of its social rank or degree of urbanization. While these studies utilized CKP data, one would expect these relationships to also hold with victimization data.

Other household burglary victimization results are shown in Table 5-6 (by units in structure), Table 5-7 (by type of tenure), Table 5-8 (by age of head of household), Table 5-9 (by family income), and Table 5-10 (by number of persons in household); these tables reflect preliminary NCP National Survey results. In sum, the rate of household burglaries is higher in rented homes, in households whose heads are relatively young (i.e., between 20 and 34 years of age), in homes with moderate to high-family incomes, and in homes occupied by four or more persons. In general however, it is important to note the low association between these variables and victimization rates.

(2) Offenders. Studies of burglary in residential areas have uncovered pertinent data on offender behavior. Boggs' study of crime patterns in St. Louis in 1960[9] indicated that areas that have high occurrence rates for residential burglary also have high offender rates (relative measure of apprehended offenders residing in an area) for residential burglary (intercorrelations = .762 and .635 between burglary

TABLE 5-6

HOUSEHOLD BURGLARY VICTIMIZATION BY UNITS IN STRUCTURE, 1973

	Total		Units in Structure								
	Incidence*	Rate**	1 Unit	2 Units	3 Units	4 Units	5-9 Units	10+ Units	Mobile Home Trailer	Other Than HU's	N.A.
CONTROL TOTALS	68,836		68.3	8.1	2.3	3.1	4.4	9.5	2.8	0.5	0.9
TOTAL***	28,734	417.4	69.0	7.5	2.3	3.7	4.8	9.0	2.3	0.4	1.2
Burglary	6,253	90.8	63.5	9.4	2.6	4.5	4.9	10.1	2.1	0.7	2.1
Forcible Entry	1,907	27.7	61.0	10.0	2.8	5.2	5.7	11.4	1.3	0.6	1.9
Nothing Taken	420	6.1	61.2	9.2	1.9	6.1	9.0	7.1	1.0	0.9	3.4
Property Damaged	315	4.6	64.4	9.8	1.9	3.9	6.7	6.6	1.0	1.1	4.6
No Property Damaged	105	1.5	51.8	7.6	1.9	12.6	14.2	8.8	3.0	0.0	0.0
Something Taken	1,492	21.7	60.8	10.2	3.0	4.9	4.8	12.6	1.7	0.6	1.5
Unlawful Entry Without Force	2,943	42.8	67.5	8.9	2.0	3.6	4.3	8.8	2.6	0.6	1.8
Attempted Forcible Entry	1,392	20.2	59.1	9.8	3.8	5.8	5.3	11.1	2.1	0.3	2.9

*In 1,000's

**Per 1,000 households

***Total number of crimes against property (including larceny and auto theft, which are not shown)

Source: Computed by USREE from NCP's preliminary National Survey results (for first 3/4 of 1973).

TABLE 5-7

HOUSEHOLD BURGLARY VICTIMIZATION BY TYPE OF TENURE, 1973

	Total		Type of Tenure		
	Incidence*	Rates**	Owned or Being Bought	Rented for Cash	No Cash Rent
CONTROL TOTALS	68,836		64.3	33.4	2.3
TOTAL***	28,734	417.4	61.6	36.7	1.7
Burglary	6,253	90.8	55.6	41.9	2.5
Forcible Entry	1,907	27.7	53.5	43.8	2.6
Nothing Taken	420	6.1	46.8	46.5	6.8
Property Damaged	315	4.6	51.9	44.2	4.1
No Property Damaged	105	1.5	36.1	52.6	11.0
Something Taken	1,492	21.7	54.6	43.9	1.8
Unlawful Entry Without Force	2,943	42.8	58.6	39.3	1.1
Attempted Forcible Entry	1,392	20.2	53.2	45.3	1.6

*In 1,000's

**Per 1,000 households

***Total number of crimes against property (including larceny and auto theft, which are not shown)

Source: Computed by USREE from NCP's preliminary National Survey results (for first 3/4 of 1973).

TABLE 5-8

HOUSEHOLD BURGLARY VICTIMIZATION BY AGE OF HEAD OF HOUSEHOLD, 1973

	TOTAL		Age of Head of Household				
	Incidence*	Rates**	% 12-19	% 20-34	% 35-49	% 50-64	% 65 +
CONTROL TOTALS	68,836		1.4	27.7	26.1	25.1	19.1
TOTAL***	28,734	417.4	2.8	34.3	34.7	20.9	7.5
Burglary	6,253	90.8	3.4	35.9	28.0	19.6	12.7
Forcible Entry	1,907	27.7	2.8	38.3	24.2	20.2	14.4
Nothing Taken	420	6.1	4.4	41.7	20.3	22.5	12.2
Property Damaged	315	4.6	4.6	43.0	17.2	24.8	10.5
No Property Damaged	105	1.5	3.8	38.9	22.9	17.2	17.1
Something Taken	1,492	21.7	2.4	37.2	25.8	19.0	15.0
Unlawful Entry Without Force	2,943	42.8	4.8	33.0	31.2	20.5	10.6
Att. Forcible Entry	1,392	20.2	1.5	39.3	26.5	17.7	15.1

*In 1,000's

**Per 1,000 households

***Total number of crimes against property (including larceny and auto theft, which are not shown)

Source: Computed by USR&E from NCP's preliminary National Survey results (for first 3/4 of 1973).

TABLE 5-9

HOUSEHOLD BURGLARY VICTIMIZATION BY FAMILY INCOME, 1973

	Total		Family Income						
	Incidence*	Rate**	% Under $3,000	% $3,000-$7,499	% $7,500-$9,999	% $10,000-$14,999	% $15,000-$24,999	% $25,000+	% N.A.
CONTROL TOTALS	68,836		13.9	26.2	12.2	23.0	14.0	4.3	6.4
TOTAL***	28,734	417.4	10.4	22.5	11.9	25.6	17.8	6.3	5.6
Burglary	6,253	90.8	17.1	27.3	10.3	18.8	13.6	6.1	6.3
Forcible Entry	1,907	27.7	17.4	28.8	9.1	18.4	13.7	5.3	6.6
Nothing Taken	420	6.1	20.6	26.2	5.1	18.1	14.9	7.8	7.2
Property Damaged	315	4.6	20.8	25.9	5.6	19.8	13.3	7.7	6.9
No Property Damaged	105	1.5	19.8	30.2	4.2	9.1	19.4	8.4	8.8
Something Taken	1,492	21.7	16.5	29.7	10.8	18.6	13.3	4.6	6.4
Unlawful Entry Without Force	2,943	42.8	16.1	26.2	10.5	20.0	14.7	7.2	5.3
Attempted Forcible Entry	1,392	20.2	18.9	28.1	11.7	17.0	11.5	4.6	8.2

*In 1,000's

**Per 1,000 households

***Total number of crimes against property (including larceny and auto theft, which are not shown)

Source: Computed by USR&E from NCP's preliminary National Survey results (for first 3/4 of 1973).

TABLE 5-10

HOUSEHOLD BURGLARY VICTIMIZATION BY NUMBER OF PERSONS IN HOUSEHOLD, 1973

	Total		Number of Persons in Household				
	Incidence*	Rate**	% 1	% 2-3	% 4-5	% 6+	% N.A.
CONTROL TOTALS	68,836		19.7	48.4	23.8	8.2	--***
TOTAL****	28,734	417.4	11.6	41.2	32.4	14.9	0.0
Burglary	6,253	90.8	18.1	44.5	25.8	11.2	0.0
Forcible Entry	1,907	27.7	22.6	48.9	18.9	9.4	0.0
Nothing Taken	420	6.1	27.8	43.8	17.9	10.7	0.0
Property Damaged	315	4.6	27.0	42.8	18.5	11.7	0.0
No Property Damaged	105	1.5	31.6	42.3	17.7	8.6	0.0
Something Taken	1,492	21.7	21.0	50.4	19.1	8.8	0.0
Unlawful Entry Without Force	2,943	42.8	14.0	41.8	31.0	13.1	0.0
Attempted Forcible Entry	1,392	20.2	20.7	45.0	24.3	10.0	0.0

*In 1,000's

**Per 1,000 households

***Too small to be significant

****Total number of crimes against property (including larceny and auto theft, which are not shown)

Source: Computed by USR&E from NCP's preliminary National Survey results (for first 3/4 of 1973).

offender rates and residential day and residential night burglary rates, respectively). These data suggest that residential burglars are quite familiar with their targets and the areas around them. The findings of Reppetto[5] support this conclusion: Most of the adjudicated burglars interviewed in this study reported unwillingness to travel more than 1 hour from their homes to commit their burglaries, and half expressed willingness to work in their own neighborhoods. Reppetto also found that the typical residential burglar was male and under 25, had limited education, and used simple attack methods to enter dwellings. Similarly, the UCR analysis of burglary arrestees yielded the following: 65 percent involved youths under 21, and 83 percent involved offenders under 25; and 95 percent of the offenders were male.

A note should be made about the method involved in collecting offender data. Because burglary is a crime of stealth, committed in such a way that the victim rarely has an opportunity to see the offender, it is necessary to rely primarily on arrest data, or interviews with arrested offenders, to determine the burglars' characteristics. Unfortunately, in 1972 only 19 per cent of all burglary offenses reported by the UCR were cleared by arrest. Equally unfortunate is the fact that analysis of offender characteristics fails to distinguish between residential and nonresidential burglary offenders.

2. Robbery: Inside and Near Residences. When people step out of their apartments, either into hallways, elevators, or other public spaces of multiunit buildings, or onto neighboring streets, they fall prey to a

different set of crimes. Among those that tend to occur between strangers, robbery is perhaps the most fear-inducing, as it involves a personal confrontation between offender and victim and the implied or actual use of force. However, it must be noted that, compared to burglary or larceny, robbery is a relatively rare event. As discussed in Chapter 4, the 1972 UCR reported the numerical incidence of burglary for that year to be over six times as high as the incidence of robbery. Victimization surveys also confirm that burglary is a far more frequent occurrence than robbery.

Furthermore, robbery is even more difficult than burglary to analyze because available crime data seldom, if ever, clearly separate noncommercial robberies occurring in residential areas from those occurring elsewhere. Robbery classified as occurring on residential premises constitutes only about 10 percent of all robbery by common measures; however, it is impossible to determine what percent of robberies classified as street robberies actually occur on residential streets or in the vicinity of the victim's residence.

Despite these difficulties, the attempt is made here to draw some useful inferences about robbery from data that do exist, with respect to the crime-related criteria. (In this portion, further discussion of the criterion of fear is omitted. The general findings on fear by victimization surveys as presented in Chapter 4 are applicable here.)

a. Severity. The measures of severity afforded by the available data are: (a) Numerical incidence rate, as estimated by victimization survey and police records; and (b) risk, as calculated on the basis

of specific opportunities. The obstacles to analysis presented by confusion over classification are here discussed with respect to each of these measures.

(1) Incidence rate. A national survey of households conducted during 1965 and 1966[2] found a robbery rate of 94 per 100,000 population, or 90 percent lower than the burglary rate obtained in the same survey. Subsequent studies have shown much higher robbery rates but the same relatively low ratio of robbery to burglary. In the recent Dayton and San Jose survey, for example, personal robbery was reported at a rate of 800 and 700 per 100,000, respectively, while burglary was reported at rates of 12,000 and 12,500 per 100,000, respectively. In the NCP's Five Largest Cities Survey, robbery rates were found to be even higher, ranging from 1,600 per 100,000 in Los Angeles, to 3,200 in Detroit. Again, however, burglary rates were much higher, ranging from 6,800 to 17,400 per 100,000. In the NCP surveys in Eight American Cities, the personal robbery rates ranged from 1,000 in Dallas to 2,900 in Newark, while the burglary rates ranged from 11,600 to 16,100 per 100,000 respectively.

It must be remembered that these figures apply to personal robberies occurring in all types of environments. The data source which is most specific with respect to place of occurrence -- an analysis of the physical distribution of commercial and residential robberies recorded by the police in 17 cities in 1967 -- suggests that very few robberies actually occur in residential environments. As shown in Table 5-11, an estimated 10.8 percent of armed and 22.5 percent of unarmed robberies took place within

TABLE 5-11

PLACE OF OCCURRENCE BY TYPE OF CRIME, 17 CITIES, 1967
(IN PERCENT)

Location \ Major violent crime type	Willful Murder	Aggravated Assault	Forcible Rape	Armed Robbery	Unarmed Robbery
Bedroom	10.0	2.6	33.2	0.5	2.3
Kitchen	2.9	2.2	0.1	0.3	0
Living room, den, study	11.8	15.9	9.1	2.0	2.4
Hall, stair, elevator	7.0	5.4	3.9	3.4	10.1
Basement, garage	2.6	0.2	5.2	0	1.6
TOTAL, home	34.3	26.3	51.5	6.2	16.4
Service station	0.6	0.9	0	3.0	0.5
Chain Store	0	0.4	0	1.7	0
Bank	0	0	0	3.0	0
Other commercial establishment	2.8	3.1	1.4	20.4	3.5
Bar, tavern, taproom, lounge	7.6	2.8	0.6	2.4	0.1
Place of entertainment other than bar, tavern, etc.	0.9	0.9	0.6	0	0
Any other inside location	14.2	11.2	11.3	3.5	5.1
TOTAL other inside location	26.2	19.3	13.9	34.0	9.2
Immediate area around residence	4.2	4.9	2.2	4.6	6.0
Street	24.9	39.1	4.8	37.6	48.8
Alley	1.0	1.2	6.1	2.1	1.9
Park	0.4	1.9	2.5	0.5	7.4
Lot	2.5	0.9	3.2	1.8	3.7
Private transport vehicle	2.1	1.1	11.0	3.5	3.6
Public transport vehicle	0.7	1.0	0	3.8	1.8
Any other outside location	1.3	2.0	4.3	5.4	1.1
TOTAL outside location	36.9	52.1	33.9	59.3	74.3
Unknown	2.5	2.2	0.7	0.4	0
GRAND TOTAL	100.0 (668)	100.0 (1493)	100.0 (617)	100.0 (509)	100.0 (502)

Total number of victim-offender interactions = 3,789
Frequencies weighted according to total reported violent crimes for 1967, by type, in the 17 cities surveyed
Column figures may not add up exactly to 100.0 percent because of rounding.

Source: Mulvihill et al.:

the residence or immediate areas. Furthermore, compared to the other violent crimes (murder, assault and rape), very few armed and unarmed robberies occurred within homes and residential buildings. The proportion of robberies occurring in the immediate vicinity of residences is about the same as the proportion for other violent crimes, but all are rare, ranging from only 2.2 percent to 6.0 percent of total incidents. Perhaps some of the robberies indicated as occurring on streets and alleys actually occurred in residential areas but, in any event, robbery in the residential environment appears to involve only a small portion of total robberies.

Similarly, in the Dayton and San Jose study, which differentiated commercial robberies and personal robberies, only 17 percent and 14 percent of the latter were reported as occurring "in or near own home" in the two cities. The results of other studies reported the distributions shown in Table 5-12. These data suggest that "street" robbery (i.e., people on the public streets, either pedestrians or occupants of vehicles), account for more than half of all robberies, followed by robberies in establishments. Considerably fewer robberies are reported as having occurred in or near residences.

(2) Risk. Normandeau,[11] in his study of robbery in the city of Philadelphia between 1960 and 1966, calculated crime risks on the basis of the Philadelphia police data and data collected by Reiss in Chicago with respect to *specific* environmental opportunities for robbery afforded by each type of target. In Philadelphia, Normandeau found that

TABLE 5-12

ROBBERY SITES IN SELECTED CITIES

	% In or Near Home	% Establishment	% Street	% Other Places
Philadelphia*	7	21	56	16
Washington, D.C.**	3	13	81	3
Chicago+	15	12	58	15
St. Louis++	9	26	65	--

*Normandeau

**President's Commission on Law Enforcement and Administration of Justice, Task Force Report: Crime and Its Impact

+Reiss

++Pittman and Handy; as cited in Normandeau

businesses had a robbery rate of 157 per 10,000 commercial establishments, whereas street robbery had an opportunity-specific rate of 9 per 10,000 persons. Robberies in or near residences exhibited a rate of approximately 1 per 10,000 persons in or about residential premises. Although Chicago showed substantially higher rates for each of these three categories of robbery, the rates were in precisely the same order -- highest for commercial establishments, lowest for residences.

b. Environmental patterns. Inasmuch as specific environmental locales for residential robbery have already been discussed with reference to the confusion in classifying robberies by place of occurrence, information is presented here for overall geographic distribution and for temporal patterns.

(1) Geographical distribution. Robbery has been found to concentrate in the core cities of metropolitan areas. According to the UCR, the 57 large core cities with populations over 250,000 accounted for over two-thirds of all robberies nationwide in 1972. Robbery rates in these cities were found to be over 30 times as high as those for rural areas and 8 times as high as suburban rates. Victimization surveys have unanimously corroborated this pattern. For example, the Ennis national survey[2] found rates declined rapidly from the central city (207 per 100,000 population) to the suburbs (95 per 100,000) to rural areas, where the crime was found to be almost nonexistent.

Feeney's study of robbery patterns in Oakland, California,[12] found that robberies in this city exhibited a high degree of spatial concentration

on the city scale as well. It was found that two-thirds of the half-block sized areas into which the city was divided for analysis had had no robberies (or pursesnatches) during a 3-year period. Robberies were concentrated in areas near the Bay, but, even in these areas, there were large areas with few or no robberies.

(2) Temporal distribution. Data on temporal patterns specific to robberies occurring in residential environments are not available, and information on robbery in general must suffice.

Normandeau's study offers the most detailed analysis of these patterns. In an investigation of the distribution by month in 23 cities, the study found that robberies usually were most highly concentrated in the winter months, particularly in December, and that this pattern was confirmed by UCR data. Normandeau attributed this concentration to the greater number of hours of darkness afforded offenders during these months and the increased business and shopping activities prior to Christmas.

Normandeau also found definite daily and hourly patterns. Nearly 45 percent of robberies in Philadelphia occurred on Fridays and Saturdays alone, a pattern clearly confirmed by comparison with distributions in other cities and attributed to the greater circulation of money on Friday paydays. The most dangerous hours were found to be from 8 a.m. to 2 a.m. (38.1 percent of total) and from 2 p.m. to 8 p.m. (33.8 percent). Feeney's findings in Oakland corroborate this hourly pattern.

TABLE 5-13

DISTRIBUTION OF ROBBERY RATES BY RACE AND INCOME, 1965

Income	White	Nonwhite*
$0-$2,999	116	278
$3,000-$5,999	91	240
$6,000-$9,999	42	121**
Above $10,000	34	---

*Rate per 100,000 of each specific race and income group

**Too few cases of nonwhites above $10,000 to maintain as separate category.

Source: Ennis

c. Offender/victim profiles.

(1) Victims. Analysis of the characteristics of robbery victims specific to residential robberies must await the provision of data that distinguish between robberies in residential and nonresidential areas. However, it may be useful to note that, in Ennis' national survey, the incidence of individual robbery was found to fall mainly on lower income groups and, within each income group, mainly on blacks; these findings are shown in the comparison of rates (See Table 5-13). The recent NCP surveys[13] offer further evidence on these characteristics of robbery victims. In most of the cities surveyed, blacks were victimized by robbery victims. In most of the cities surveyed, blacks were victimized by robbery with injury at rates somewhat higher than those for whites, and by robbery without injury at considerably higher rates. Also, in most cities, persons of low income were significantly more frequently victimized than those of higher income groups.

With respect to victimization by sex, Ennis' study found white males were victimized by robbery twice as frequently as white females but that nonwhite females -- who exhibited the highest rate of all -- were victimized significantly more often than nonwhite males. However, the recent NCP survey findings do not tend to confirm this distinction by race, showing higher rates for males of both sexes. (See Section C of Chapter 4.)

Normandeau's study, the only one to provide information on victims with reference to the site of the robbery, indicated that women were more likely to be victimized by robbery on residential premises than were men. Unfortunately, no data exist that would permit comparison of victimization patterns by type of residential neighborhood (i.e., single-family, low-income-housing, garden apartment, high-rise, etc.).

(2) Offenders. Collection of information on robbery offenders, as on burglary offenders, largely depends upon data for arrested offenders. The 1972 UCR present data on robbers for the 30 percent of total offenses cleared by arrest. Of these robbers, 54 percent were under 21 and 76 percent under 25 years of age. (However, because of the tendency for youthful offenders to work in groups, the percentage of *offenders* attributable to this age group would not be so high.) In addition to their youthfulness, robbery offenders exhibited other characteristics similar to burglary offenders: Over 90 percent were male, and 67 percent were black.

Offender data can also be obtained for robbery from descriptions given by robbery victims. However, victimization surveys (such as the Dayton-San Jose Pilot Survey) that have attempted to collect such data caution that, due to several circumstances, information is likely to be highly inaccurate. The personel stress of the situation, its high emotional content, time elapsed between the incident and the survey interview, and crime occurrence often in the dark and usually involving a stranger all tend to lend great biases to victims' reportage. For these reasons, the

Dayton-San Jose survey found analysis of characteristics of offenders according to victims could not be substantiated. The current NCP national surveys are attempting to collect such information, but it remains to be seen whether reliable data can be obtained.

(3) Victim/offender relationship. As no data pertinent to robberies occurring in the residential environment are available, the general finding for robbery (as presented in Chapter 4) must suffice: By all available measures, robbery is a crime that occurs predominantly among strangers.

3. Household Larceny: Inside and Near Residences. This crime category involves theft or attempted theft of property or cash within or near the home that does not involve forcible or unlawful entry (as does burglary) or personal contact (as do robbery and the related lesser crimes of purse-snatch and pickpocket). On the basis of several criteria, household larceny does not receive detailed study in this report. First, the most pertinent and recent data sources on the crime (the NCP Five Largest Cities and Eight American Cities Surveys) have shown the incidence of this crime to be considerably lower than that of burglary in most of the cities. In terms of dollar loss, as well, the crime is not severe; most household larcenies were found by these surveys to consist of minor thefts of below $50 in value (64 percent) while only 4 percent involved thefts of $250 or more. Also because of the low degree of severity and the absence of contact between victim and offender, little fear is generated by the crime. Finally, virtually no data distinguishing household from other

types of larceny are available from additional sources. Thus, on the basis of the above, household larceny is of very limited significance for the CPTED Program.

4. Intervention Strategies Against Residential Crime.**** Those strategies that are at present commonly suggested or utilized to counter residential crime can in general be summarized into two different categories: Single specific tactics, and comprehensive prevention models.

The specific tactics category includes techniques usually aimed at protecting the interior of the dwelling unit and, thus, at deterring the crime of burglary. The installation of burglar alarms and other such anti-intrusion devices is a much popularized example, although research to date has stressed that the cost-effectiveness of such devices has not been proven. Other tactics frequently suggested or employed include: The improvement of hardware used to construct and secure doors and windows; the use of lights and other devices to simulate occupancy; and identification markings for personal property to counter conversion of stolen goods.

****This section is meant to afford merely a broad outline of the general types of strategies that have been employed to date in countering residential crime. A more comprehensive and detailed listing, with further information on status, function and evidenced effectiveness, appears in a separate document, "Elements of CPTED."

On the other hand, comprehensive models of a far broader scale have been posited for the prevention and control of the spectrum of residential crimes.***** They may be summarized as:

- The *criminal justice model*, by which police patrols and law enforcement investigations attempt to deter, detect, and apprehend criminal offenders in residential areas, while courts and correctional agencies punish or rehabilitate them.
- The *social control model*, whereby residents of a particular neighborhood are encouraged to manifest a strong territorial concern that acts as a deterrent to potential offenders.
- The *limited access or fortress model*, typified by luxury apartment complexes, whereby physical arrangements such as guards, gates, and closed-circuit television prevent unauthorized entry.
- The *distance model*, whereby persons choose to locate their residences at a "safe distance" from the crime problems concentrated in the urban core area.

*****Although these models were devised for application to the residential environments, they could prove successful when applied to any neighborhood environment, including commercial neighborhoods, school neighborhoods, and neighborhoods with a heavy transportation component.

D. Potential Crime/Environment Targets.

The preceding discussion has identified three residential subenvironments and addressed the primary crime problems that exist within each. On the basis of this information, those crimes have been selected for each subenvironment that primarily and secondarily deserve further CPTED attention as potential crime/environment targets. Table 5-14 specifies the selected crimes for subenvironments inside the residence, inside the residential buildings, and near residences. In the table, "1" designates the crime for primary consideration, and "2" for secondary consideration.

For the inside-residence subenvironment, only a primary choice has been made, since the crime of burglary is by an overwhelming margin the most prevalent and the most serious stranger-to-stranger crime occurring within the residence. In the other two subenvironments, robbery has been selected as the crime most appropriate for CPTED attention. Although residential robbery is a relatively rare event, it, unlike household larceny, endangers personal safety and engenders considerable fear, as well as threatening property. As the crime of burglary is confined by definition to the inside-residence subenvironment, household larceny has been designated as the secondary choice in both the other two subenvironments.

1. Previous Crime/Environment Target. The boundaries of the area for CPTED focus can be further narrowed by selection of one subenvironment

TABLE 5-14

POTENTIAL RESIDENTIAL CRIME/ENVIRONMENT TARGETS

	Inside Residence	Inside Residential Building	Near Residence
Burglary	1	---	---
Robbery	---	1	1
Household Larceny	---	2	2

1 = Primary Consideration

2 = Secondary Consideration

and its primary target crime. The crime of burglary inside the residence emerges from this process as the strongest choice on several grounds. First, residential burglary is a crime that, due to its high (and rising) incidence and its threat to personal property and to the privacy and security of the home, causes considerable fear and concern.

In relationship to the Program-related criteria, it can be expected, on the basis of the prevalence of residential burglary, that the impact of CPTED strategies directed against it would be great enough to allow measurement. (Residential robbery, on the other hand, occurring at a low rate and exhibiting no degree of concentration within residential areas, could not be expected to allow sufficient measurement.) Additionally, since burglary is a crime against a fixed physical structure, it can be expected that changes in physical design would have greater potential impact upon it than upon the crimes against persons. (This expectation is substantiated by the fact that several studies have shown that residential burglars do not exhibit a high level of skill in attacking structures.)

Finally, CPTED strategies directed against burglary could be expected to counter other crimes as well. For example, if the CPTED Program were to control access into residential buildings as well as into individual dwelling units, it is quite possible that other crimes (e.g., vandalism, larceny, and robbery in public areas of residential buildings) could be reduced along with burglary. Moreover, a reduction of burglary could allow police to focus more attention on the patrolling of streets and sidewalks

of residential areas which, in turn, could reduce the incidence of the other crimes.

2. Specific Target Locale. Given the choice of burglary (inside the residence) as CPTED's crime/environment target, it remains to specify the geographic lacale that offers most promise. The neighborhood near a central city, though representing obvious organizational problems which will be addressed in the CPTED design, appears to be the logical choice for several reasons:

- As discussed earlier in this chapter, areas nearest the center of an urban area are more likely to experience serious burglary problems than outlying areas.
- Similarly, studies have shown that robbery rates also increased with increased proximity to the city center.
- These observations are corroborated by Reppetto's findings that burglars expressed a general unwillingness to travel a great distance from their homes (which are often central-city areas) to commit burglaries; indeed, half of those Reppetto interviewed expressed willingness to work in their own neighborhoods.
- Residents of central-city neighborhoods are often very socially dependent on those neighborhoods, because of job proximity, unavailability or prohibitive cost of housing elsewhere, and dependence on transportation systems.

6. THE COMMERCIAL ENVIRONMENT

CHAPTER 6. THE COMMERCIAL ENVIRONMENT

Subsections for this chapter are organized similarly to those in the previous chapter on the residential environment. The introductory section contains a general discussion of the commercial environment in relation to specific concerns of the CPTED Program. Section B provides a brief review or the kinds of information available concerning crimes in the commercial environment and of the problems encountered in comparing this information. Section C discusses crime-related information in terms of: The frequency and severity of crimes in the commercial area; victimization by type and size of business; public levels of fear in the commercial environment; spatial and temporal patterns of commercial crimes; and offenders operating in this environment. Also, it provides a brief summary of intervention strategies applied in the commercial environment. Section D summarizes the chief crime problems in the commercial area, with preliminary assessment of targets for potential CPTED focus. Assault, pursesnatch, robbery, and burglary are identified as the crimes of concern in a geographic area containing a commercial strip.

A. Introduction

This chapter deals with the problems of crime in the commercial environment -- a subject that has received limited explicit notice in criminological literature to date. Although a sizeable amount of information is available on the criminal victimization of the various types of individual commercial establishments, only limited information is available pertaining to the commercial environment as a whole. However, the scope and objectives of the CPTED Program address the environment

not only in terms of the individual commercial establishments considered as separate entities but, more importantly, as the array of areas created by configurations of commercial establishments and the spaces surrounding them: Downtown central business areas, shopping centers and malls, groupings of neighborhood convenience stores, and strip commercial areas. Of these various configurations, the commercial strip area has been deemed to display particular potential for the CPTED Program. Strip areas include those business activities that have traditionally developed along major streets and highways to provide services to users of these throughfares and residents of nearby areas. At present, many strip areas are lapsing into a state of general neglect and decline due to a rise in competition from modern shopping centers and malls -- which state often gives rise to serious problems of crime and fear in these areas.

While the decision has been made to deal with commercial crime problems on an areawide basis, the nature of the available data precludes an areawide organization of the crime-related information presented in this report. Information on losses suffered by individual establishments through victimization by various crimes of property is available in abundance. However, comparable data are limited for crimes against person, (such as robbery and pursesnatch) which tend to occur *outside* commercial establishments. Although these are often fear-producing confrontations and, in fact, may be more likely to occur in areas of commercial land use then in any other area, it is difficult to

substantiate their severity in the commercial environment. Therefore, although much of the crime-related information in Section C of this chapter is presented for individual establishments, such presentation must be taken to reflect the constraints of the available data rather than the chosen CPTED focus.

Also, caution must be exercised in applying CPTED selection criteria to commercial target priorities. First, no type of commercial establishment can be eliminated from consideration because it appears to be truly "rare." According to the categories of businesses adopted by the National Crime Panel, presented in Table 6-1, even real estate businesses (which, with banks, are among the least common enterprises) number nearly one-quarter of a million and are common to most geographical areas.

Second, although crimes against commercial establishments generally appear to constitute a relatively small percentage of all crimes, no type of commercial establishment -- with the possible exception of banks -- can be said to exhibit a truly "low" victimization rate, relative to the number of establishments at risk. Taken as an example, the crime of burglary (which is among the most common of all commercial crimes) accounts for only 37 percent of all burglaries, according to the UCR figures for 1972. However, when victimization rates are calculated according to the NCP convention of "crimes per number of possible targets" (e.g., household victimization per thousand households; personal per thousand persons; and commercial per thousand businesses), business establishments appear to carry a disproportionate share of the national

TABLE 6-1

NUMBER OF BUSINESSES BY VICTIMIZATION RATE BY TYPE OF INCIDENTS, BY RECEIPT SIZE, BY KIND OF BUSINESS (Page 1 of 3)

Business Size and Type	Total Business	Victimization Rate (Per 1,000) Total	Burglary	Robbery
TOTAL	6,786,370	233	197	37
$1,000,000 +	395,152	301	258	43
Retail	101,544	402	328	73
Wholesale	70,597	298	251	48
Service	50,558	206	191	15
Real Estate	8,748	77	77	0
Manufacturing	62,410	330	318	12
Banks	25,162	107	0	107
Transportation	5,182	811	579	232
Others	70,322	255	246	10
$500,000 - 999,999	240,054	253	222	31
Retail	97,084	280	209	70
Wholesale	32,197	255	234	21
Service	40,928	199	199	0
Real Estate	6,115	110	110	0
Manufacturing	24,292	396	396	0
Banks	4,971	0	0	0
Transportation	7,040	144	144	0
Others	28,180	195	195	0
$100,000 - 499,999	1,207,113	282	238	44
Retail	634,684	330	264	67
Wholesale	84,418	193	185	8
Service	252,995	307	277	30
Real Estate	31,751	261	0	0
Manufacturing	78,238	160	151	9
Banks	12,379	0	0	0
Transportation	11,091	243	243	0
Others	101,566	131	116	15

TABLE 6-1

NUMBER OF BUSINESSES BY VICTIMIZATION RATE BY TYPE OF INCIDENTS, BY RECEIPT SIZE, BY KIND OF BUSINESS (Page 2 of 3)

Business Size and Type	Total Business	Victimization Rate (Per 1,000) Total	Burglary	Robbery
$50,000 - 99,999	859,821	311	261	49
Retail	418,239	391	319	72
Wholesale	31,379	172	172	0
Service	276,142	289	246	43
Real Estate	27,045	179	179	0
Manufacturing	46,057	176	176	0
Banks	3,815	177	177	0
Transportation	5,171	130	130	0
Other	51,973	81	68	13
$25,000 - 49,999	727,097	235	187	49
Retail	304,495	274	201	73
Wholesale	15,088	179	179	0
Service	311,361	205	174	31
Real Estate	27,697	275	200	75
Manufacturing	23,932	259	259	0
Banks	1,346	500	0	500
Transportation	5,154	196	196	0
Others	38,717	122	104	17
$10,000 - 24,999	804,523	233	196	37
Retail	302,997	312	254	57
Wholesale	13,286	51	0	0
Service	384,955	201	176	25
Real Estate	50,324	180	164	16
Manufacturing	20,329	33	33	0
Banks	1,166	0	0	0
Transportation	2,245	1,200	900	300
Others	29,709	91	91	0

TABLE 6-1

NUMBER OF BUSINESSES BY VICTIMIZATION RATE BY TYPE OF INCIDENTS, BY RECEIPT SIZE, BY KIND OF BUSINESS (Page 3 of 3)

Business Size and Type	Total Business	Victimization Rate (Per 1,000) Total	Burglary	Robbery
Under $10,000	1,158,123	172	149	23
Retail	419,767	255	216	39
Wholesale	15,095	0	0	0
Service	649,891	127	113	14
Real Estate	35,162	182	182	0
Manufacturing	16,667	81	81	0
Banks	1,425	0	0	0
Transportation	5,544	243	0	243
Other	31,287	22	22	0
No Sale	473,068	161	157	4
Retail	9,606	352	352	0
Wholesale	10,699	258	258	0
Service	263,918	222	214	8
Real Estate	8,132	0	0	0
Manufacturing	11,182	0	0	0
Banks	2,457	0	0	0
Transportation	4,521	0	0	0
Other	162,553	71	71	0
Not Available	904,753	179	140	39
Retail	298,802	239	168	71
Wholesale	32,950	248	166	82
Service	408,037	151	127	24
Real Estate	41,797	164	164	0
Manufacturing	43,425	141	141	0
Banks	11,896	0	0	0
Transportation	6,341	425	319	106
Other	61,445	89	67	22

Source: Computed by USR&E from NCP's preliminary National Survey results (for the first three quarters of 1973).

crime burden. The NCP Eight American Cities Survey, for example, indicates a commercial burglary rate of between 355 and 741, averaging nearly 500 per 1000 establishments, whereas the highest holdhold burglary rate for any of the eight cities was 161 per 1000 households.

Additionally, assessment of the degree of fear engendered by commercial crimes and of the profiles of victims must necessarily remain speculative (and hence will not receive detailed treatment in this chapter), since:

- Victimization surveys (the most commonly used source of information about fear levels and the impact of crime on the public) generally focus on neighborhoods in which the respondents reside, or on overall fear levels in a given area; insofar as is known, none request information about fear in commercial areas per se.
- The "population at risk" in commercial crimes is incalculably large and extremely varied. It cannot be confined to employees or owners of businesses, since virtually every member of the public has contact with commercial establishments and is, therefore, a potential witness to or victim of, or is otherwise affected by, crime in this environment.

Finally, small clusters of commercial establishments, or even a single business standing along on a block, can act as crime targets for entire areas, drawing criminal populations into neighborhoods that might otherwise have been perceived as relatively "safe."[1,2] The public impact of these crimes can then be far greater than mere victimization figures would indicate. For this reason, no particular type of commercial establishment can be readily placed outside the concern of the present study, although the following sections suggest relative judgements that can be made among the various types.

B. Source Material

In addition to the general data limitations mentioned in the introduction to this chapter, data on commercial crime evidence all the comparability problems associated with crime statistics in general, as discussed previously in Chapter 3. These include such parameters as differing sources, differing dates, differing scope, and differing definitions. The term "commercial crime" itself is variously defined in the literature. Usually regarded as crime against commercial establishments within the establishment proper, the definition can be extended to cover employees of commercial establishments away from the premises or to include patrons victimized while on the premises. Fortunately for the present purposes, some writers who treat the subject of commercial crime attempt to analyze not only crimes involving commercial establishments directly, but also various other crimes committed in areas of predominantly commercial land use.

Inconsistency in definitions of commercial subenvironments also poses a problem. The UCR, for example, break down robbery statistics for "gas stations," "commercial houses," "chain stores," and "banks," while the NCP's unpublished statistics for burglary and robbery are categorized according to "retail, wholesale, services, real estate, manufacturing, banks, transportation, and other," with some further breakdown for specific business types. The Dayton-San Jose Pilot Study, which preceded the NCP study, lumps retail and wholesale together and does not consider banks or transportation at all. Still other studies (e.g., the Sylvania burglar alarm evaluation) simply categorize crimes as residential versus nonresidential.

The severity of these inconsistently defined crimes is also inconsistently measured. The recent NCP surveys establish a victimization rate of crime per establishment at risk, but most older sources (e.g., UCR), lacking the up-to-date census information available to the National Crime Panel, simply calculate the crimes per 1000 population. While this latter method may provide a perfectly adequate measure of the severity of violent personal crimes (murder, rape, assault), it clearly provides no measure at all of the victimization probability for commercial establishments. Finally, other reports (most notably, the Small Business Administration report) concentrate on the severity of commercial crimes as reflected by dollar loss, rather than by numerical incidence. While this method permits a useful assessment of the consequences of commercial crime by size of business (ratio of dollar loss

to gross receipts), the margin of error in dollar loss estimations, combined with the effects of inflation and other economic trends, renders financial figures of only limited usefulness for any very detailed comparisons.

More commonplace problems (i.e., problems not peculiar to commercial crime data) arise from the differing time periods and locales for which the various data were compiled. Statistics presented in the Small Business Administration report, for example, may reflect overly high incidence and loss figures for several crime categories as a result of the riots and civil disorders occurring in the late 1960's -- the period during which the report was compiled. Other studies conducted in specific locales may report crime characteristics peculiar to those locales but without generic significance.

However, excessive preoccupation with these and other disparities and limitations obscures the usefulness of the limited data that are available. More serious than the problem of noncomparability are the obvious gaps in available data. The topic of displacement, for example, is treated only in a speculative paragraph here and there, and fear-of-crime data for the commercial area are (as noted in Section A) virtually nonexistent. (A few studies suggest that fear levels can be inferred from the level of installation of protective devices and alarm systems, but this suggestion seems so extremely tenuous that the present study made no effort to explore it.)

This assessment of data sources for the commercial environment

would be incomplete without an acknowledgement of the one apparent advantage of commercial crime data over that for other environments, namely, that commercial crimes are apparently more accurately reported. NCP victimization surveys for Eight American Cities indicate reporting patterns as shown in Table 6-2.

The primary sources used in writing this chapter are summarized in Table 6-3, with indications of the subject areas covered by each source.

C. Crime Environment

Discussion in this section focuses primarily on the crime-related criteria of: Severity, as measured per type of crime and per type and size of business; environmental patterns, spatial and temporal; and offender profiles. Because, as noted in Section A, information on fear levels and victims is largely speculative, treatment of these criteria is brief. In addition, intervention strategies for the environment are briefly summarized.

1. Severity.

a. Victimization by type of crime. Aside from the low-visibility crimes of larceny (shoplift) and forgery, the particular crimes most often associated with the commercial environment are burglary, robbery, and, to a lesser extent, larceny and pursesnatch. Burglary is generally acknowledged to be the most common of all crimes classified as commercial. (In fact, burglary and robbery are generally the only crimes specifically classified as commercial, versus residential or personal, in most criminological statistics.)

TABLE 6-2

PERCENT OF VICTIMIZATIONS REPORTED TO THE POLICE, 1972

	Atlanta	Baltimore	Cleveland	Dallas	Denver	Newark	Portland	St. Louis
Personal (Rape, Robbery, Assault, Personal Larceny)	33	41	36	31	35	41	34	41
Household (Burglary, Larceny, Auto Theft)	45	49	49	42	47	51	43	52
Commercial (Burglary, Robbery)	75	83	77	76	78	79	73	73

Source: Crime in Eight American Cities: Advance Report, 1974.

TABLE 6-3

THE COMMERCIAL ENVIRONMENT -- SOURCE MATERIALS

	Scope		Crime Related Information						Commercial Targets		
	National	Local	Severity	Fear	Offender/ Victim	Environment	Displacement	Intervention Strategies	Retail (small)	Wholesale (small)	Service (small)
SBA Study	X	---	X	---	X	X	---	X	X	INDIRECTLY	
Uniform Crime Reports	X	---	X	---	X	X	---	---	INDIRECTLY		
National Crime Panel											
National Crime Surveys	X	---	X	---	X	X	---	X	X	X	X
Dayton-San Jose	---	X	X	X	X	X	---	---	X	X	X
5 Largest Cities	---	X	X	---	X	---	---	---	X	X	X
8 American Cities	---	X	X	---	X	---	---	---	X	X	X
Burglary in San Jose	---	X	X	---	X	X	---	X	X	---	X
Cedar Rapids	---	X	X	---	X	X	---	X	INDIRECTLY		
Sylvania Alarm	---	X	X	---	X	X	---	X	INDIRECTLY		
Feeney/Wilcox	---	X	X	---	X	X	---	---	INDIRECTLY		
Scarr	---	X	X	---	X	X	---	X	INDIRECTLY		
Luedtke	---	X	X	---	X	X	---	X	INDIRECTLY		
Albuquerque	---	X	X	---	---	X	---	X	X	---	X

Although murders, rapes, and (particularly) assaults may occur in commercial establishments (compared with other environments), these crimes are not usually tabulated according to place of occurrence and, consequently, data on their "commercial" frequency are extremely hard to obtain. Information gathered by the task force for the National Commission on the Causes and Prevention of Violence (see Table 5-11) suggests that personal crimes of violence occur relatively rarely in commercial establishments; however, since they appear to occur relatively frequently in the catchall category labeled "streets" (which may or may not be located in commercial areas), no firm conclusions can be drawn about the relative severity of these crime problems in the commercial environment.

For present purposes, it must suffice to note that: (a) Murder, rape, and assault are relatively rare crimes in general, and still more rare in the commercial environment; (b) their occurrence in a commercial environment is more likely to be a random event than to be logically associated with characteristics particular to that environment (as would be the case with burglary, robbery, and pursesnatch); and (c) general rarity and absence of data regarding these crimes would make it extremely difficult to evaluate the effectiveness of CPTED strategies against them. Therefore, the present discussion focuses on the common predatory crimes of burglary, robbery, and larceny pursesnatch. It is anticipated, however, that strategies against these crimes may have an indirect effect on other crimes in the commerical area.

(1) Burglary. As noted previously, the incidence of commercial burglary, when measured relative to the number of establishments at risk, is very high -- averaging nearly 500 per 1000 establishments annually in the eight cities surveyed by the NCP (see Table 6-1). Table 6-4 indicates the relatively greater victimization rates for commercial (versus residential) burglaries, as measured by the data gathered for the nation's five largest cities and for San Jose and Dayton. (It should also be noted in this table that the disparity [i.e., the ratio of commercial to household victimizations] is less significant for the smaller and less centralized cities.) Unpublished data from the NCP's nationwide surveys indicate that the disparity in victimization rates also appears on a national scale.

Furthermore, among crimes which result in dollar loss to businesses (as opposed to loss of life or loss of public "serenity"), burglary appears to be the most significant, accounting for approximately one-third of all losses attributable to crime. Although the average losses attributable to commercial burglary appear relatively small (on the order of $300, according to UCR figures), burglary is, as noted previously, a very common crime; consequently, the gross losses are substantial.

Table 6-5 summarizes the 1967-1968 findings of the Small Business Administration regarding the frequency and financial consequences of the various "economic" crimes for various sizes of businesses.

(2) Robbery. As depicted in Table 6-5, the crime of robbery in the commercial environment appears relatively inconsequential

TABLE 6-4

RATIO COMMERCIAL TO NONCOMMERCIAL CRIME

	Burglary Rate			Robbery Rate		
	Comm/ 1000 Est	Resd/ 1000 Homes	Rat.	Comm/ 1000 Est	Ind/ 1000 Pers	Rat.
San Jose	183	125	1.5:1	21	7	3:1
Dayton	206	122	1.75:1	21	8	3:1
Chicago	317	118	2.5:1	77	26	3:1
Detroit	615	174	3.5:1	179	32	6:1
Los Angeles	311	148	2:1	47	16	3:1
New York City	328	68	5:1	103	24	4:1
Philadelphia	390	109	4:1	116	28	4:1

Source: Data in this table has been extracted from Crime in the Nation's Five Largest Cities and San Jose/Dayton Pilot Study.

TABLE 6-5

LOSSES BY TYPE OF CRIME AND BY SIZE AND LOCATION OF BUSINESS

Item (1)	Total (2)	Burglary (3)	Robbery (4)	Vandalism (5)	Shoplifting (6)	Employee theft (7)	Bad checks (8)
A. Losses:							
1. Amount (in millions)	$3,049	$958	$ 77	$813	$504	$381	$316
2. Percent	100	31	3	27	17	12	10
B. Indexed ratios of losses to receipts by size of business:							
1. Total	100	100	100	100	100	100	100
2. Under $100,000	323	357	333	283	225	350	50
3. $100,000 to $1,000,000	205	200	167	167	250	300	200
4. $1,000,000 to $5,000,000	127	129	133	167	50	250	50
5. Over $5,000,000	9	7	1	17	8	20	25
C. Percent of businesses burglarized or robbed by location:							
1. Total		14	2	15	15	8	37
2. Ghetto		28	9	37	24	11	30
3. Monghetto central city		18	3	18	14	10	33
4. Suburbs		16	2	17	15	9	31
5. Rural		9	1	9	15	4	36

Source: Crime Against Small Business.

financially, probably because it occurs less frequently than other property-loss crimes and incurs a smaller average loss per single offense. UCR figures for 1972 estimate an average loss of $365 for robbery of "commercial houses," but this category explicitly excludes gas stations (with an average robbery loss of $128) and chain stores (with an average robbery loss of $340), and implicitly excludes restaurants, bars, and manufacturing plants. However, it seems unlikely that the average loss of all nonbank commercial robberies would exceed the UCR figures for "commercial houses" quoted above. Indeed, the limited data existent on this subject suggest that the average commercial loss may be even less than the UCR national estimate. Conklin, for example, found only one in three commercial robberies involved losses of more than $100, and only one in ten of more than $500.[3] Similarly, the majority of robberies studied by Feeney in 1969 involved losses between $50 and $200.[2]

However, in spite of the relatively small financial loss attributable to robbery in the commercial environment and because the crime involves not only the loss of property but also a serious, fear-producing threat to the person (and because it is a common, predatory, stranger-to-stranger crime), robbery in the commercial environment constitutes an appropriate concern for the CPTED Program. As discussed in Section A of Chapter 2, the incidence of commercial robbery on an areawide basis is extremely difficult to assess. The UCR record trends of incidence for "commercial house" robberies (i.e., victimizations of employees with-

in commercial premises) and recent NCP surveys have estimated that such crimes occur relatively infrequently as compared to burglaries (in ratios ranging from 1 to 3, to 1 to 7), yet still in significant numbers. (Table 6-1 presents comparative victimization rates for commercial burglary and robbery per type and size of business, as computed from preliminary 1973 national survey results made avalable by the NCP.) However, it is impossible to determine what proportion of the large number of incidents classified as "street" robberies occurred in commercial vicinities. For this reason, the general discussion of the crime presented in Chapter 4 affords a supplement to the discussion of robbery in the present chapter.

(3) Larceny pursesnatch. This crime appears on the list of potential CPTED target crimes because it seems to be a relatively common occurrence in commercial areas. Furthermore, although it is by definition a nonviolent crime, perpetrated with little or no physical contact, it may have a considerable fear-inducing capacity, particularly because its victims are most often elderly.

Unfortunately, information on the incidence and nature of larceny pursesnatch in the commercial environment is even less accessible than information on robbery. Since it is exclusively a "street" crime, data for individual commercial establishments do not include it. Moreover, information on the crime in general is scarce; the conventional source for national crime data, the UCR, does not compile data on this crime, and few analytic studies consider it. Larceny pursesnatch is, however, one

of the crimes against person specifically addressed by the NCP surveys. Rates compiled by the Five Largest Cities and Eight American Cities Surveys (see Tables 6-6 and 6-7) indicate that victimization by this crime is lower than victimization by robbery, but still significant. Preliminary 1973 NCP National Survey data indicate that over half of all pursesnatches take place on the streets or in other outdoor open spaces, with a large proportion also occurring inside nonresidential buildings (see Table 4-8). Thus, one can only surmise that a large part of these crimes take place on commercial use streets or on commercial premises.

Finally, much of the information presented thus far on the nature of robbery, the "indicator" crime for violent crimes, can be generalized to apply to pursesnatch as well. Though pursesnatch is a far less serious crime, it resembles robbery in being a largely stranger-to-stranger, opportunistic crime perpetrated against the individual.

b. Victimization by type and size of business. According to the most recent Bureau of Census statistics, retail and service establishments account for approximately 38 percent each of the total number of business establishments in the country. In contrast, wholesale and manufacturing account for less than 5 percent each, real estate less than 4 percent, and banks less than 1 percent. Table 6-8 summarizes the distribution of various types of business.

Also, approximately 67 percent of all businesses nationwide and approximately the same proportion of all retail businesses have gross

TABLE 6-6

VICTIMIZATION RATES FOR PERSONS AGE 12 AND OVER, BY TYPE OF VICTIMIZATION AND CITY

(Rate per 1,000 population age 12 and over)

Type of victimization	Chicago	Detroit	Los Angeles	New York	Philadelphia
Crimes of violence	56	68	53	36	43
Rape and attempted rape	3	3	2	1	1
Robbery	26	32	16	24	28
Robbery and attempted robbery with injury	7	8	5	5	8
Serious assault	3	5	3	3	4
Minor assault	3	3	2	2	4
Robbery without injury	13	17	6	13	13
Attempted robbery without injury	7	8	5	6	8
Assault	27	33	35	11	34
Aggravated assault	12	10	15	4	17
With injury	4	6	5	2	7
Attempted assault with weapon	8	12	10	2	10
Simple assault	14	15	19	6	17
With injury	4	3	5	1	4
Attempted assault without weapon	11	12	15	5	13
Crimes of theft	87	95	105	51	85
Personal larceny with contact	14	9	7	15	14
Purse snatching	5	4	2	5	4
Attempted purse snatching	2	1	1	2	2
Pocket picking	7	4	4	7	7
Personal larceny without contact	73	85	99	37	81

NOTE: Details may not add to the totals shown because of rounding. In general, small differences between any two figures in this table are not statistically significant because of sampling.

TABLE 6-7

VICTIMIZATION RATES FOR PERSONS AGE 12 AND OVER, BY TYPE OF VICTIMIZATION AND CITY

(Rate per 1,000 population age 12 and over, based on surveys during the months July through November 1972 of victimizations during the previous 12 months)

Type of victimization	Atlanta	Baltimore	Cleveland	Dallas	Denver	Newark	Portland	St. Louis
Crimes of violence	48	56	54	43	67	42	59	42
Rape and attempted rape	2	1	2	2	3	1	3	1
Robbery	16	23	14	10	17	29	16	16
Robbery and attempted robbery with injury	4	8	6	3	6	9	5	5
Serious assault	2	4	3	1	3	4	2	2
Minor assault	1	4	2	1	3	4	2	3
Robbery without injury	7	11	12	4	6	13	5	7
Attempted robbery without injury	5	7	6	4	6	7	6	4
Assault	30	28	28	31	46	12	40	25
Aggravated assault	15	13	15	14	20	6	16	13
With injury	4	6	4	5	6	3	5	5
Attempted assault with weapon	11	7	11	9	14	3	11	8
Simple assault	15	15	13	17	27	6	24	12
With injury	4	3	3	4	7	2	6	3
Attempted assault without weapon	11	11	10	13	20	4	18	9
Crimes of theft	100	79	71	97	134	50	123	73
Personal larceny with contact	11	13	9	4	6	15	5	8
Purse snatching	2	5	4	1	2	7	1	3
Attempted purse snatching	1	2	1	1	1	3	1	1
Pocket picking	8	7	4	2	3	6	3	4
Personal larceny without contact	89	65	62	92	128	35	118	64

NOTE: Detail may not add to total shown because of rounding. In general, small differences between any two figures in this table are not statistically significant because of sampling.

TABLE 6-8

DISTRIBUTION OF U.S. BUSINESSES BY TYPE, 1973

Business Type	Total Business
TOTAL	6,786,367
Retail (38.12%)	2,587,276
Wholesale (4.50%)	305,710
Service (38.8%)	2,638,233
Real Estate (3.48%)	236,772
Manufacturing (4.81%)	326,533
Banks (0.95%)	64,632
Transportation (0.76%)	51,460
Other (8.49%)	575,751

Source: Unpublished data, National Crime Panel, 1973 National Survey, summarized from Table 6-1.

receipts of less than $100,000 annually, while more than 80 percent of all service and real estate businesses have receipts totalling less than this amount. In contrast, more than 50 percent of all manufacturing concerns and more than 67 percent of all banks have gross receipts of more than $100,000 annually. (See Table 6-1.)

Since, as noted above, retail and service establishments far outnumber other sorts of business establishments, it is not surprising that these establishments appear to account for the largest percentage of commercial robberies and burglaries. However, when gross numbers are broken down into rates (crimes per number of establishments), few clear patterns emerge. As is apparent from Table 6-9, retail establishments do appear to be victimized at a higher rate than other types of establishments, but (as noted in Section A) no type of establishment except banks appears to sustain a truly "low" rate.

Data from the NCP surveys of various cities also indicate that retail establishments in urban areas are victimized out of proportion to their number and, in particular are robbed much more frequently than other establishments (as identified in the Five Largest Cities and Eight American Cities Surveys).[4,5] However, rates varied considerably among wholesale, service, and other businesses. When businesses are categorized by size of receipts, no clear patterns emerge; the larger businesses appear just as likely to be victimized as the smaller ones and, among some categories (particularly manufacturing companies), even more likely.

TABLE 6-9

VICTIMIZATION RATES AND NUMBER OF INCIDENTS, BY TYPE OF BUSINESS

BUSINESS	TOTAL BUSINESS	TOTAL INCIDENCE	TOTAL BURGLARIES	TOTAL ROBBERIES	VICTIMIZATION RATE*	BURGLARY RATE*	ROBBERY RATE*
Total	6,786,400	1,581,200	1,336,900	244,300	233	197	36
Retail	2,587,300	800,700	637,200	163,500	309	246	63
Wholesale	305,700	65,200	57,800	7,400	213	189	24
Real Estate	236,800	43,800	41,000	2,800	185	173	12
Services	2,638,200	519,700	459,000	60,700	197	174	23
Manufacturing	326,500	65,200	63,700	1,500	200	195	5
Banks	64,600	4,000	7,000	3,400	63	52	10

*Rate per 1,000 establishments

Source: NCP National Survey

Few efforts have been made to provide a more refined breakdown of business targets by victimization probability and, indeed, most efforts have been substantially less refined than those of the NCP. (The Small Business Administration report,[6] for example, simply classified businesses as "retail" and "other.") The Underwriters' Laboratory does rank burglary targets by type of business (most of which seem to be "retail") but, since this ranking is based only on establishments with alarm systems certified by the Laboratory, it seems of doubtful utility in determining CPTED site priorities. Nevertheless, for informational purposes, the most recent (1973) Underwriters' ranking is presented in Table 6-10.

Finally, in evaluating victimization by type and size of business, it should be noted that victimization per se gains in consequence as the size of the business diminishes. That is, "the smallest businesses, those grossing under $100,000 annually, assume the largest share of the dollar losses relative to their gross receipts...for the crimes of burglary, robbery and vandalism."[6]

2. Fear. As noted in the introduction to this chapter, public "fear levels" for crimes in the commercial environment are extremely difficult to assess and, consequently, judgements in this area must be based primarily on commonsense criteria. With this proviso in mind, the following observations seem merited:

- Crimes against those establishments most accessible to the public and serving the

TABLE 6-10

RANKING OF COMMERCIAL BURLGARY TARGETS
(UNDERWRITERS LABORATORIES, INC.)

Table III

Target	Percent of Total
1. Jewelry	10.6
2. Men's Clothing	10.2
3. Liquor	7.9
4. Food	6.5
5. Appliances	5.6
6. Women's Clothing	5.4
7. Drugs	5.1
8. Auto Accessories	3.5
9. Furs	2.0
10. Guns and Sporting Goods	1.9
TOTAL	57.7

broadest spectrum of the public (namely, retail and service establishments) possess the greatest "fear-producing" potential.

- Crimes against establishments which tend to be located in areas of diverse land use possess a greater fear potential than crimes against more geographically isolated establishments (e.g., manufacturing plants).
- Crimes against establishments where business transactions tend to be personalized (e.g., local grocery stores, drug stores, beauty parlors) have a greater public impact than crimes against more "impersonal" businesses (e.g., large banks, manufacturing plants), although the greater publicity that may be given to the latter can offset this "personalization" factor.

3. Environmental Patterns.

a. Geographical distribution. The crimes of robbery and burglary (like most other serious crimes) are generally conceded to occur most frequently in large metropolitan areas, and the commercial versions of these crimes appear to corroborate this assumption. The

NCP surveys indicate a nationwide commercial victimization rate (both robberies and burglaries, attempted and completed) of 234 per 1000 establishments, but the rate for the larger cities ranges from about 360 per 1000 to about 900 per 1000.*[4,5]

Other studies have not only noted concentration of these crimes in heavily urbanized areas but also their concentration in specific geographic areas within the larger urban areas. For example, the 1967-1968 Small Business Administration survey found that inner city businesses located in what the survey classes as "ghetto" areas sustained a burglary victimization rate of 69 per 100 (compared with 38 per 100 for "non-ghetto central city businesses," 29 per 100 for suburban, and 16 per 100 for rural business establishments). Robberies evidenced a similar propensity to cluster in the "ghetto areas."[6] Data from the NCP

*It should be noted that this pattern of heavy victimization in urban areas may become less marked in future years, as the "flight of the middle class to suburbs" shows signs of diminishing and suburban areas themselves show signs of congestion. In any case, in 1972, for the first time since 1961, the UCR noted an annual decrease in nationwide robbery and burglary rates, primarily attributable to the decrease in rates in cities of more than 250,000 population. Suburban and rural areas, by contrast, registered robbery increases of 9 percent and 11 percent respectively, and burglary increases of 2 percent and 4 percent over 1971-1972. However, the 1973 UCR figures again indicated higher crime rates.

surveys for San Jose/Dayton suggest that commercial burglaries may be less likely to concentrate geographically than robberies and more likely than robberies to occur in nonpoor areas outside the center city proper.[7] However, this apparent tendency may be partially attributable to peculiarities of the two cities surveyed; San Jose is probably less centralized and Dayton more industrialized than typical cities of comparable size.

In regard to robbery in particular, the Feeney/Wilcox study[2] found that all of the nearly 2000 commercial robberies reported to the police in Oakland were concentrated in approximately 12 percent of the city's area and that 31 percent of *all* robberies were concentrated in areas classes as "commercial land use." These "high-crime" areas of commercial land use were not, for the most part, located in the city center but, rather, in areas of less dense commercial activity outside the central business district. (In evaluating these and other findings from the Oakland study, one must keep in mind that Oakland itself is in many ways a suburban city and that its central business district [CBD] is not so clearly defined as those in great metropolitan centers.)

With reference to spatial patterning of crime locales, a few analytic studies offer scattered tendencies, which have been noted within specific areas of certain cities but which may not hold true for others. Examples of such observed tendencies are: The propensity of corner and near-corner establishments to be most frequently victimized by both commercial robberies and commercial burglaries, and the concentration of several

types of crime (including noncommercial) along or adjacent to commercial strip developments (Luedtke[1]); a tendency for commercial crimes to occur at premises located in a primarily commerical land area with six times the frequency of occurrence in residential land use areas; and the concentration of commercial and other robberies on streets adjacent to major arteries (Feeney[2]).

While the Feeney findings and the later Luedtke findings do underscore the desirability of focusing upon a commercial area rather than an individual establishment, it should be noted that, following selection of the actual CPTED demonstration site, further analysis of these finer points of spatial patterning would be required for that particular site.

b. Temporal distribution. Since robberies require the presence of personal victims, and burglaries for the most part require their absence, it is not surprising to find that time patterns for commercial robberies and burglaries seem to diverge according to whether the commercial premises are likely to be occupied or unoccupied. Most commercial burglaries appear to take place at night (according to San Jose/Dayton data, primarily between 12 p.m. and 6 a.m.) and more often on weekends, when businesses are closed, than during the week. Although it is often difficult to determine the exact time of occurrence for a burglary (since the crime is seldom discovered until well after its occurrence), most available information seems to confirm the night time/weekend pattern for the crime.[8,9]

Most data sources concur on the time patterns for commercial robbery, placing the time of most frequent incidence between late afternoon and midnight and, more often than not, toward the end of the week -- particularly on Friday and Saturday. The study of armed robbery in Albuquerque, for example, found that most commercial robberies occurred during the police "swing shift" -- between 3 p.m. and 11 p.m.; while Feeney noted their occurrence primarily between 3-5 and 9-10 p.m. The San Jose/Dayton data indicated that only the time period of 6 p.m. to midnight contained a significant number of commercial robberies.[2,7,10] Thus, although robbers in general show a preference for nighttime hours (see Section C in Chapter 4), commercial robbers seem more likely than others to operate during the day or early evening because businesses open during these hours make available the target victims. The preference of late afternoon and evening as opposed to morning or midday hours may be attributable in part to a preference of offenders for the cover of darkness and the presence of fewer potential witnesses near closing hours, and also in part to the attraction of greater sums of more cash on hand toward the end of the day. As noted in Chapter 4, the presence of more cash has also been advanced as an explanation for the concentration of robberies on Fridays and Saturdays when, presumable, a week's receipts have accumulated and payrolls are being net.

Larceny pursesnatch has been found to be perpetrated primarily during daylight hours, presumable because: (a) The consideration of cover of darkness and presence of witnesses are not so important with reference

to this crime, since it is carried out quickly, without violence and, therefore, with less visible impact; and (b) because its female victims are most often on the streets during daylight hours.**

4. Offender/Victim Profiles.

a. Offenders. Research efforts for this report reveal no evidence of systematic attempts to assess the characteristics of offenders who choose to attack commercial targets. Indeed, the preponderance of information on the subject of offender behavior suggests that very few property offenders (usually classified as "unprofessional" or "opportunistic" criminals[11]) exhibit any exclusive target preferences. For example, a study of residential burglary in Boston found that approximately two-thirds of the interview sample (approximately 100) of residential burglars admitted to having also burglarized stores, one-third to offices, and another approximately one-third to other kinds of commercial targets.[12]

In the absence of evidence to the contrary, it seems probable that the characteristics of commercial robbers and burglars would be more or less similar to the characteristics of robbers and burglars in general (for a description of the latter, see Chapter 4). It also seems probable that, since commercial targets tend to be slightly more lucrative and

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**Based on USR&E's analysis of larceny pursesnatches in the target areas of Hartford, Connecticut ("Residential Neighborhood Crime Control" project).

slightly more difficult to attack than other possible targets, commercial establishments would attract the somewhat older and more sophisticated among the general robber/burglar population. Data from other studies bear out this observation to a limited extent. For example, Conklin found that 32.2 percent of the adults arrested for robbery in Boston in 1968 were arrested for commercial robberies, compared with only 2.6 percent of the juveniles.[3] He also found that a disproportionate share of white robbers were attracted to commercial targets: 48.6 percent of all whites arrested for robbery, compared with 13.8 percent of all blacks. Similar findings for commercial robbers can be noted in the Feeney study.[2] (Table 6-11 presents the NCP figures for perceived age of offenders in commercial robberies but, unfortunately, the failure to break down age categories beyond the age of 20 renders the data of limited interest.)

Larceny pursesnatch offenders tend to be younger than robbery offenders; the majority are under 21 years of age and many in their earlier teens or even younger.*** With regard to other characteristics, they generally resemble robbery offenders.

Regarding the modus operandi for commercial burglary, little information exists to distinguish commercial offenders from their residential counterparts -- which is not surprising in view of the low apprehension

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***As found by USR&E's analysis of police records on arrested and suspected offenders for larceny pursesnatches in target areas of Hartford, Connecticut.

TABLE 6-11

COMMERCIAL ROBBERIES -- INCIDENCE BY PERCEIVED AGE OF OFFENDER

Offender's Age	% of Total	TOTAL	Robberies Completed	% Robberies Completed	Robberies Attempted	% Robberies Attempted
TOTAL	100.00	249,506	181,196	72.60	68,310	27.40
One Offender	43.10	107,406	72,562	67.70	34,844	32.40
Under 12	0.00	0	0	0.00	0	0.00
12-14	0.27	674	674	100.00	0	0.00
15-17	1.68	4,190	1,360	32.50	2,831	67.60
18-20	6.08	15,176	11,031	72.70	4,195	27.30
20 or over	30.73	76,676	52,553	68.50	24,123	31.50
Don't know	4.28	10,089				
Two Offenders or More	50.10	125,040	96,816	77.40	28,224	22.60
Under 12	0.00	0	0	0.00	0	0.00
12-14	0.90	2,215	693	31.30	1,522	68.70
15-17	3.90	9,800	7,075	72.20	2,725	27.80
18-20	6.10	15,223	9,608	63.10	5,615	36.90
20 or over	23.90	59,599	51,443	86.30	8,156	13.70
Don't know	15.40	38,545	28,003	72.70	10,542	27.40
Don't know	6.70	16,722	11,818	70.70	4,904	29.30

Source: Computed by USR&E from NCP's preliminary National Survey results (for the first three quarters of 1973).

rate for burglary in general and the fact that there are rarely any witnesses for these crimes. Scarr does conclude that, "Entry to residential burglary sites is more likely to be by cruder means than is entry to nonresidential burglary sites,"[9] but, however plausible this statement may appear, no hard data are offered in its support.

By contrast, the operating methods of commercial robbers can, according to the San Jose/Dayton report, be distinguished from those of the noncommercial type in three significant respects: (a) Commercial robbers are more likely to be armed (usually with a gun); (b) they are more likely to be successful (i.e., to inflict financial loss on the victim); and (c) they are less likely to injure the victim.[7]

b. Victims. As noted in Section A, due to the extremely broad spectrum constituting the "population at risk" in commercial environments, the reader is referred to the general discussion of victims of robbery and burglary in Chapter 4. It is noted here that, referring again to Tables 4-12 through 4-14, NCP 1973 survey results indicate that victims of the crime of larceny pursesnatch are: (a) For the most part over 35 years of age, with heaviest concentration in the over-50-years age group; (b) primarily from the lower (particularly the lowest) income groups; and (c), as expected, predominately female.

c. Offender/Victim Relationship. As noted frequently in previous discussion, the crimes of robbery, burglary, and pursesnatch are, for the most part, stranger-to-stranger.

5. Intervention Strategies Against Commercial Crime.**** For the most part, strategies currently employed against commercial burglary, robbery, and related crimes tend to focus upon the securing of the individual establishment. Nearly all of these strategies are "target-hardening" techniques -- ranging from technologically elaborate electronic devices (e.g., closed-circuit television surveillance, electronically triggered alarm systems, extensive locking systems in banks) to historically primitive means (e.g., dogs patrolling open areas at manufacturing plants).

A limited number of strategies are aimed at securing the larger commercial area (or, perhaps more often, areas of both commercial and residential components). Of these, the strategy that is currently receiving greatest consideration is the upgrading of street lighting to enhance visibility and thus deter street and other crimes.

D. Potential Crime/Environment Targets

This section presents a preliminary assessment, on the grounds of the relevant criteria, of: (1) Those particular types of commercial establishments that merit CPTED attention; (2) the scope of the potential

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****This section merely provides a broad, general description of strategies commonly employed in countering commercial crime. A more comprehensive and detailed listing (with further information on status, function, and evidenced effectiveness) appears in a separate document, "Elements of CPTED,"

CPTED crime/environment target; and (3) the type of crime most amenable to control by CPTED strategies.

1. Type of Business. Through the use of information from the preceding sections, the crime/environment matrix in Table 6-12 has been devised. The matrix primarily summarizes the valid reasons for eliminating certain types of commercial targets; it does not provide (nor does it purport to provide) a completely convincing rationale for the selection of those targets not subject to elimination.

In general, the larger businesses are eliminated because, having substantial resources of their own, they do not seem appropriate candidates for public assistance. However, it is difficult to eliminate the larger retail and service businesses on these grounds, since these businesses serve such a large segment of the public and the public, therefore, has a substantial interest in safety in these two environments. Real estate offices and small banks are eliminated because they are relatively less common than the other businesses and also because they do not tend to cluster in any kind of environment, which makes it seem unlikely that they would share common crime problems. Since real estate and manufacturing businesses seem to have dealings with such a limited public and also to be geographically removed from the areas of primary public concern, they are deemed to possess a low fear-producing potential. Finally, some businesses are eliminated as having too "few sites" or "low crime," on the basis of information presented earlier.

TABLE 6-12

THE COMMERCIAL ENVIRONMENT -- PRELIMINARY DISPOSITION OF TARGETS

	PRIME REASONS FOR ELIMINATION					CANDIDATE FOR CPTED PROGRAM
	Low Crime	Low Fear	Few Sites	Not In Public Interest	Too Dispersed	
RETAIL						
* Small						x
** Large						x
WHOLESALE						
* Small				x		
** Large		x				
SERVICE						
* Small					x	
** Large				x		
MANUFACTURING						
* Small	x					
** Large		x		x		
BANKS						
* Small			x	x		
** Large	x	x				
REAL ESTATE						
* Small		x	x		x	
** Large		x	x	x	x	

* Small < $100,000 receipts
** Large > $100,000 receipts

Among the "uneliminated" targets (large and small retail and service businesses, and small wholesale businesses), the following (more or less subjective) judgements seem merited:

- The smaller businesses are more appropriate targets for a national program than are larger ones -- primarily because they have fewer resources of their own with which to combat crime. Also, the smaller businesses tend to be located in areas of more diverse land use than the larger ones and, consequently, a reduction of crime in these areas might have a greater impact on public fear levels. (See the discussion of fear in Section C of this chapter.)
- Retail and service businesses are likely to serve a broader segment of the public than wholesale businesses; consequently crimes against these establishments may achieve a greater public impact.

2. Scope. As mentioned in Section A, the decision has been made to focus upon configurations of commercial establishments and the areas surrounding them, rather than upon individual commercial establishments. In this way, CPTED can achieve as great an anticrime impact as possible and avoid committing national crime-prevention resources to solving the

problems of private businesses. Furthermore, the commercial strip area in particular has been found to display the greatest potential as a CPTED demonstration site for a number of reasons. First, as noted in Section A, many strip areas are currently experiencing serious crime and fear problems as a result of their neglect and decline due to competition from shopping centers and malls. These problems are exacerbated by the fact that usership of these areas, which even initially tends to be transitory, is further reduced when local residents cease to use the strip because of the fear of crime. Particularly because the growth of crime problems in the strip area may engender increased crime problems in adjacent residential areas, the vicious cycle of decline-of-vitality/upsurge-of-crime-and-fear in commercial strip areas merits serious counterattack.

Furthermore, commercial strip areas are particularly difficult to defend against crime by conventional means. The fact that stores are not located in clusters but are strung out along the major street complicates the task of police surveillance and makes it easy for potential criminals to exit the scene of the crime. Additionally, breaking and entering at the backs of establishments is a common problem since there are often large, poorly lit delivery areas in the back which are not visible from the street. Furthermore, the proprietor's crime deterrent capacity is limited by the fact that, since users of the strip are often strangers, he often cannot distinguish the potential offender from the legitimate customer. On these grounds, also, the

commercial strip provides a particularly challenging CPTED target. Finally, the commercial strip is generally composed of those types of businesses identified earlier -- smaller retail and service businesses -- as most meriting CPTED attention.

3. Type of Crime. Because the CPTED program has selected to focus its concern on an area rather than an establishment in the commercial environment, robbery would seem a more appropriate crime than burglary. Robbery appears more clearly concentrated geographically. Furthermore, it often provides a more accurate indication of the level of general street crime in a given area. For this reason, strategies against robbery would appear more likely: (a) To additionally deter other crimes in the area, namely pursesnatch; and (b) to have an area-wide effect, unlike strategies against burglary which tend, for the most part, to focus on target hardening of individual establishments. Because existent strategies currently employed (see Section C) appear to operate with varying degrees of effectiveness in protecting individual establishments -- particularly against the crime of burglary -- the question of whether they may also serve in some measure to protect the larger commercial area against robbery and related street crimes (e.g., assaults and pursesnatches) remains to be explored by the Program.

7. THE SCHOOL ENVIRONMENT

CHAPTER 7. THE SCHOOL ENVIRONMENT

This chapter discusses the school environment with respect to the relevant criteria identified in Chapter 2, to the extent possible based upon available information. The introduction to Chapter 7 provides a brief overview of the school environment and the scope and nature of its crime problems in general, followed by preliminary indication of areas for potential CPTED consideration. In Section B, the various types of source materials and, particularly, three serious inadequacies are described. Section C, containing the crime/environment discussion, concentrates largely (due to limitations of data) upon the severity of the various crime problems in school subenvironments. Finally, Section D presents a preliminary assessment of subenvironments and crimes as potential targets for the demonstration in the school environment. Assault, extortion, burglary, and vandalism are identified as the crimes of concern in public secondary schools.

A. Introduction

If a school system, college, or university is viewed as a microcosm of contemporary society, the etiology of the antisocial or criminal activity it exhibits might be expected to parallel that of society at large. This chapter, however, does not purport to identify or attempt to analyze the causal factors which generate criminal activity; rather, it attempts to provide some measure of the gravity and indicate the nature of the crimes committed on academic premises and in peripheral areas.

Crimes against property and persons committed on academic premises and in school facilities have become a major concern for school administrators, law enforcement officials, and legislators. The gravity of criminal activity related to school systems has produced a sense of national concern which is amply illustrated by the following remark by the Executive Secretary of the International Association of College and University Security Directors:

> Schools and colleges have one common problem today. It is no longer student activism, sit-ins, confrontations, and mass demonstrations. It can be summed up in one word: crime.*

Crime taking place in or around academic premises falls into four general categories:

- Crimes Against Person -- Assault, robbery (and extortion), and pursesnatch.
- Crimes Against Property (Public and Private) -- Burglary, vandalism, arson, and larceny (including auto theft).
- Victimless Crimes -- Drug abuse, gambling, and drinking.

*John Powell, quotation from a Special Report on School Security, Educational Resources Information Center, University of Oregon, 1973.

- Civil Disorder -- Large-scale collective violence directed against the established social, political, or academic community (e.g., spontaneous assaults, stonings, and acts of vandalism).

Because the CPTED Program addresses itself, in general, to the common, predatory crimes and, more specifically, to crimes of opportunity (i.e., those crime situations that are readily available to a potential offender, appear to offer a low risk of apprehension, and require little or no preparation to act), the latter two categories are not given further consideration in this chapter. Instead, it attempts to provide information with respect to the crimes against persons and property that can be deterred or prevented within the school environment by manipulation of the physical environment and related social, management, and law enforcement practices. This information would pertain to such crimes that occur in two major school subenvironments: (a) Elementary and secondary school systems operated by public authority and typified by the customary system operated by a unit of local government, and (b) colleges and universities operated by public authority and characterized by the 4-year institution under the control of State government.

Table 7-1 designates the major types of crimes against persons and property that are addressed in this chapter; in addition, the table provides preliminary indication of the known offender groups who perpetrate, and the agencies and individuals who are the chief victims of, these

CONTINUED

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TABLE 7-1

SCHOOL CRIME/ENVIRONMENT CLASSIFICATION MATRIX

MAJOR CRIME SPECIFIC CATEGORIES

OFFENDERS - •	ARSON	ASSAULT	BURGLARY	LARCENY	PURSESNATCH	ROBBERY	VANDALISM
Students	•	•	•	•	•	•	•
Militant Political Activists	•	•	•			•	•
Juvenile Gangs		•	•	•	•	•	•
Drug Pushers		•		•			
Truants and Drop Outs	•	•	•	•	•	•	•
Other Unauthorized Persons on School Premises—Child molesters, sex deviants, rioters, thieves, incendiarists, vandals, etc.	•	•	•	•	•	•	•
VICTIMS - X							
School Departments, Colleges, and Universities, Specialized Learning Centers	x			x	x		x
Teachers and School Administrative Personnel		x			x	x	
Male and Female Pedestrians in School Vicinity						x	
Students		x			x	x	
Bus Transportation Operators							x
Nearby Residential Dwellers		x		x	x	x	
Nearby Commercial Operators—stores, offices, garages, etc.				x	x		x
Nearby Public Facilities—parks, libraries, etc.					x		x

specific crimes. Discussion in Section C focuses on these various categories, utilizing available crime-related information. However, it should be noted that: (a) This chart is not meant to be an exhaustive representation of all possible crimes and their victims and offenders, and (b) the limitations of the available information preclude comprehensive treatment of each of these categories.

B. Source Materials

At the beginning of the CPTED Program, the Research Support team identified available information related to the nature and severity of crime in the two major school subenvironments. Very little information was found. Because of time and resource limitations, no surveys or onsite visits to colleges and universities were made. Presented below are the results of the analysis of the available data.

1. Data Limitations. One important fact has been pivotal in shaping the presentation of crime-related information offered in this chapter -- namely, that, in both subenvironments, research efforts have failed to identify a substantial, nationally representative body of offense and offender data. The data that have been developed seem inadequate for several basic reasons:

- Data are old and do not reflect current crime levels.
- Data may be nonuniform from one jurisdiction to another, thus preventing valid comparative analysis.

- Data are fragmented and there is no national repository for offense and offender data. (An exception to this statement is the UCR program of the FBI, which now publishes crime statistics for about 30 colleges and universities.)

a. The Safe Schools Act of 1971. It is thus evident from recent CPTED research efforts and corroborating evidence gathered from other professionals working in the field that an insufficient amount of "hard," reliable, and nationally representative crime data precludes the development of a conclusive crime/environment taxonomy for the school environment. The insufficient amount of "hard" crime data was a problem consistently cited in public hearings before the Subcommittee on Education of the Committee on Education and Labor of the U.S. House of Representatives on the Safe Schools Act of 1971 (H.R. 2650). This dearth of information on school crime problems is, in part, attributable to the reluctance of some school principals or school systems to collect or publicize such information and, in part, a result of informal handling of offenses, which often are not reported to the police. The consequence of this absence of reliable statistics is the inability to either react to or plan for the problem intelligently.

b. The present safe school study. The passage of recent Federal legislation offers the promise of remedy for the informational deficiencies cited above. A bill to collect a nationally representative

crime data base was passed by the 93rd Congress and enacted into law on August 21, 1974. Section 825.a of that law, quoted below, makes it incumbent upon the Secretary of the United States Department of Health, Education, and Welfare to initiate an extensive inquiry into the nature of crime in the Nation's schools:

> Sec. 825.(a) The Secretary shall make a full and complete investigation and study, including necessary research activities, during the period beginning upon the date of enactment of this Act and ending June 30, 1975, to determine:
>
> (1) the frequency, seriousness, and incidence of crime in elementary and secondary schools in the States;
>
> (2) the number and location of schools affected by crime;
>
> (3) the per-pupil average incidence of crimes in elementary and secondary schools in urban, suburban, and rural schools located in all regions of the United States;
>
> (4) the cost of replacement and repair of facilities, books, supplies, equipment, and other tangible objects seriously damaged or destroyed as the result of crime in such schools; and

(5) the means by which crimes are attempted to be prevented in such schools and the means by which crimes may more effectively be prevented in such schools.[1]

At the present time, the mechanisms for implementing this legislation are not known by the Research Support team, although the National Center for Education Statistics has been given the major responsibility for collecting data on crime in the schools.** Additionally, this organization plans to survey approximately 3000 school districts by survey instruments developed for that purpose.***

2. Scope of Available Data. At the present time, lacking a nationally representative and systematically collected data base, the Research Support team is faced with developing a body of crime-related information on the basis of data currently available. Thus, in compiling this chapter, a wide variety of sources has been drawn upon. Because available data on offenses and offenders are extremely limited, an attempt has been made to substantiate the data through the collection of

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**Letter from Dorothy M. Gilford, Acting Administrator, National Center for Education Statistics, dated October 11, 1974.

***Telephone conversation with Ms. Caroline Breedlove, National Center for Education Statistics, in September 1974.

an amorphous body of information that, due to its fragmented and diverse nature, has been difficult to present in strictly objective terms. This collection includes: (a) Information developed from attitudes and assessments expressed in a set of interviews conducted with local (Boston and Cambridge) school department and police officials and with campus security personnel; (b) like attitudes and assessments on the part of teachers and educators as conveyed in educational journal articles; (c) opinions of criminal justice planners and Westinghouse CPTED Consortium personnel; (d) a collection of newspaper articles detailing the dimensions of bombings and incendiary attacks, describing student assaults, assessing losses due to school vandalism, and noting other such measures of the local school crime problem; and (e) legislative surveys and reports.

Faced with the difficulty of making sound generalizations based upon such an amorphous mass, the Research Support team has attempted to subjectively assess the merits of this body of information and incorporate it into the school environment analysis as an intuitive measurement. In view of the data limitations that have been encountered, the authors recognize that the disposition of the school crime/environment targets (presented in Section D) may appear vulnerable to criticism from many perspectives. Consequently, this assessment should not be viewed as static and unchanging but, rather, as open to modification.

Because, as noted above, the source materials used in preparing this chapter are particularly idiosyncratic in nature and scope, they are described as they are introduced into the context of Section C. Table 7-2 presents the various data sources used and the subject matter covered by each type.

Two sets of statistical data deserve special attention in this section. They are the results of: (a) The National Crime Panel surveys, and (b) the National Association of School Security Directors (NASSD) survey. The first set is described in Chapter 3. A description of the second set follows.

NASSD recently developed a survey instrument (see Figure 7-1) that was distributed to the organization's membership (composed largely of public school system security directors). Approximately 200 questionnaires were mailed out and 43 were returned. For the purpose of in-depth analysis it was deemed that only 27 returns were usable for the following reasons.

- Some returns were incomplete (crime-specific categories were not reported, or crimes were not reported for the entire school system).
- Some returns indicated less than a calendar year reporting period (the survey requested a 12-month reporting period).
- Some returns did not separate crimes into crime-specific categories (for example, a

TABLE 7-2

THE SCHOOL ENVIRONMENT -- SOURCE MATERIALS

Type of Data Source	Scope		Crime Related Information for Secondary and Post Secondary Targets						
	National	Local	Severity	Fear	Offender/Victim	Environment	Displacement	Intervention Strategies
FBI	x	x	x	---	x	x	---	---
Research Reports	x	x	x	x	x	x	---	x
Surveys and Legislative Hearings	x	x	x	x	x	x	---	---
Journal Articles and News Media	x	x	x	x	x	x	---	x
Working Professionals	---	x	---	x	---	x	---	x

School District: _____ Period Covering: _____

Total Enrollment: _____ Number of Security Personnel: _____

Total No. of Buildings: _____ Prepared by: _____

	I. No. of Offenses	II. Dollar Cost	III. Offenses Cleared	IV. Dollar Recovery
I. Arson - the malicious burning or attempt to burn:				
a. School board property				
b. Personal property				
c. False fire alarms				
II. Assaults - the unlawful inflicting of or intent to inflict bodily injury upon another:				
a. On student				
b. On teachers (administrators)				
c. On others				
III. Bomb Incidents - the threat or use of an incendiary or explosive devices (simulated or real):				
a. Threats - total				
b. Evacuations - required				
c. Bombings - accomplished				
IV. Burglary - Breaking - Entering - includes burglary, housebreaking, safe cracking, or any unlawful entry to commit a felony or theft. Even though force was not used to gain entry - includes attempted burglary (count burglaries here not under larceny):				
a. Burglary (loss and number)				
b. Breaking and entering (damage and number)				
V. Larceny - theft of property not resulting from burglary or breaking and entering:				
a. School				
b. Personal				
VI. Vandalism - wanton and/or malicious destruction, defacement, rendering inoperable, unusable property of:				
a. Schools				
1. Facilities/equipment				
2. Windows				
b. Personal				
VII. Robbery - stealing or taking anything of value from a person by force or violence or by putting in fear - includes assault to rob and attempt to rob:				
a. Armed or forcible robbery				
b. "Shakedowns" or extortion (by use of fear)				
VIII. Trespassing - the unlawful presence of a person on school property:				
a. No. of offenses				
IX. Controlled Substances - includes alcohol, coca leaves, opium, cannabis and every other substance neither chemically nor physically distinguishable from them and any other drugs to which the Federal Narcotics Laws may now apply (includes narcotics):				
a. Possession				
1. Alcohol				

Figure 7-1. NASSD Survey Instrument (Page 1 of 2)

	I. No. of Offenses	II. Dollar Cost	III. Offenses Cleared	IV. Dollar Recovery
IX. Controlled Substances (cont.)				
a. Possession (cont.)				
2. Marijuana				
3. Other				
b. Sale				
1. Alcohol				
2. Marijuana				
3. Other				
c. Use				
1. Alcohol				
2. Marijuana				
3. Other				
X. Homicides/Manslaughter				
a. School hours - normal				
b. Outside school hours				
XI. Rape				
a. Student				
b. Teacher				
c. Other				
XII. Other Sex Offenses - includes exposure, molestation and all other unnatural sex acts:				
a. Student				
b. Teacher				
c. Other				
XIII. Weapons				
a. Possession (on the person)				
1. Guns				
2. Knives				
3. Other				
b. Found (in lockers, etc.)				
1. Guns				
2. Knives				
3. Other				
XIV. Demonstrations - a group action in a school setting that disrupts the officially defined educational process:				
a. Riots (massive collective disturbances)				
b. Disorderly (organized, possibly sanctioned but peaceful)				
c. Orderly				
d. Gang conflict				
e. Students				
f. Non-students				
g. Both				
h. Racial (or racial overtones)				
i. No. of days school closed result of student disturbance				
XV. Bus Incidents				
a. Resulting in accidents				
b. Other				
TOTALS				

Figure 7-1. NASSD Survey Instrument (Page 2 of 2)

total incident count might be furnished for the crimes of burglary, larceny, and robbery; and it is not known from that total incident count how much crime is represented in each of the crime specific categories -- burglary, larceny, and robbery).

Although the survey does not cover enough school systems to represent a national statistical base, the responses may provide meaningful insight into school crime problems.

C. Crime Environment Discussion

This section is organized into two major subsections. The first and primary subsection centers on information pertaining to public school systems, although such information may also have relevance for colleges and universities (which are the subject matter of the second subsection). In general, it can be said that, for both subenvironments, information is largely available only with respect to the severity (incidence and dollar cost) of school crimes. The brief and general analyses given the criterion of fear and, particularly, the criteria of environmental patterns and offender/victim profiles, reflect the dearth of available information in these areas. Following these criteria-related discussions, general anticrime strategies currently used in the school environment are described in brief.

1. Public School Systems. This subsection discusses the four crime-related criteria and general intervention strategies in relation to public elementary and secondary schools.

a. Severity. Discussion in this portion first focuses on the severity of acts of vandalism, followed by consideration of the incidence of the various other crimes against property and crimes against person which occur with frequency in this subenvironment.

(1) Vandalism. If the bulk of literature is any index to the severity of crime, then "vandalism" would top the list. Professional teaching journals abound with articles about vandalism and its roots, and with prescriptive packages suggesting solutions. One of the more authoritative research reports on this subject, by Bernard Greenberg of the staff at the Stanford Research Institute,[2] includes an analysis of vandalism costs for 120 California school districts surveyed in 1969. Additionally, the report presents a table on school vandalism costs for selected United States cities for the academic year 1966-1967; this table is reproduced in Table 7-3.

One of the problems associated with comparing vandalism cost statistics from one jurisdiction to another results from uncertainty regarding the variously defined *vandalism*. For example, the definition may vary from the rather inclusive one used by the Greenberg study cited above ("those acts that result in significant damage to schools, including burglary, theft, malicious mischief, property damage, breaking and entering, and arson") to a far narrower one, restricted, for example, to only property damage.

TABLE 7-3

SCHOOL VANDALISM COSTS FOR SELECTED U.S. CITIES, 1966-1967

City School System	Enrollment	Number of Buildings	Cost Per Pupil	Restitution Per Pupil	Net Cost Per Pupil	TOTAL COST*
Newark	76,150	78	$3.30	$.10	$3.20	$ 243,680.00
Cleveland	151,331	185	2.96	.11	2.85	431,455.85
Cincinnati	88,531	114	2.56	--	2.56	226,767.36
Boston	92,892	196	2.30	.01	2.29	212,722.68
New York City	1,000,000	927	1.95	--	1.95	1,950,000.00
Washington, D.C.	148,149	203	1.70	.02	1.68	248,890.32
Milwaukee	128,405	162	1.67	.01	1.66	213,152.30
Detroit	298,027	315	1.72	.07	1.65	491,744.55
St. Paul	47,000	90	1.57	--	1.57	73,790.00
Kansas City, Mo.	73,372	104	1.56	.03	1.53	112,259.16
Syracuse	30,694	46	1.59	.28	1.31	40,209.14
Baltimore	199,983	244	1.34	.04	1.30	259,977.90
Minneapolis	70,989	99	1.23	.01	1.22	86,606.58
Pittsburgh	76,131	113	.95	--	.95	72,371.95
Philadelphia	280,000	297	.89	.01	.88	246,400.00
Memphis	125,000	140	.82	.02	.80	100,000.00
Tulsa	80,000	113	.81	.01	.80	64,000.00
Dayton	62,000	72	.73	--	.73	45,260.00
Wichita	69,755	120	.79	.07	.72	50,209.20
Oakland	71,533	104	.76	.04	.72	51,503.75
Richmond	43,752	66	.92	.20	.72	31,487.04
Louisville	50,000	73	.67	--	.67	33,500.00
Los Angeles	817,393	930	.68	.07	.61	498,610.95
Corpus Christi	44,946	68	.91	.36	.55	24,720.30
San Antonio	75,000	105	.54	--	.54	60,500.00
Portland	78,714	121	.52	--	.52	40,931.28
Norfolk	55,568	76	.46	.05	.41	22,782.88
New Orleans	110,000	130	.34	.02	.32	35,200.00
Tampa	94,475	133	.71	.41	.30	28,342.50
Denver	96,435	120	.30	.01	.29	27,966.15
Beaumont	15,127	31	.36	.03	.28	4,235.56
Birmingham	67,858	102	.31	.07	.24	16,285.92
El Paso	62,000	66	.23	.11	.12	7,440.00
				TOTAL =		$ 6,032,983.32

*This column is not included in the original report. Figures have been computed and included for illustrative purposes.

Source: School Vandalism: A National Dilemma.

From a more recent research report on school vandalism, by Olson and Carpenter,[5] data comparing dollar losses due to vandalism for 11 cities is presented for two academic years (see Table 7-4). Dollar costs incurred by vandalism rose for all but one city, and rose enormously in several. However, caution must be observed in interpreting these figures because reporting procedures can vary from place to place, school enrollments may have increased during the academic years cited, and costs may have risen due to inflation during these periods.

Other more general indicators tend to confirm the magnitude of the national school vandalism problem. For example, the U.S. Office of Education has estimated that damage caused by vandals in public schools throughout the country may run as high as $100 million annually.[4] The National Education Association estimates an annual loss of $200 million;**** and the most recent information, compiled by the U.S. Senate Subcommittee to Investigate Juvenile Delinquency, places the total yearly school vandalism cost in the environs of $500 million.

The most recent and comprehensive indication of the severity of the problem is afforded by the NASSD survey conducted during the summer of 1974, summarized in Table 7-5. This table shows that vandalism is a critical problem, particularly for districts with the smallest and the largest enrollments.

****Fourth Annual School Security Survey conducted by the Industrial Publishing Company, Cleveland, Ohio.

TABLE 7-4

COMPARATIVE ANALYSIS OF DOLLAR COSTS ASSOCIATED WITH SCHOOL VANDALISM
FOR THE ACADEMIC YEARS, 1966-67 and 1967-68

School System	Dollar Loss 1966-67	Dollar Loss 1967-68	Dollar Loss Change 1966-67--1967-68	% Change 1966-67--1967-68
New York City, N.Y.	1,950,000	2,716,757	+766,757	+ 39.32
Los Angeles, California	498,611	940,124	+441,513	+ 88.55
Baltimore, Maryland	259,978	716,602	+456,624	+ 175.64
Tampa, Florida	28,343	683,496	+655,153	+ 2311.52
Boston, Massachusetts	212,723	535,000	+322,277	+ 151.50
Washington, D.C.	248,890	410,463	+161,573	+ 64.92
Milwaukee, Wisconsin	213,152	406,699	+193,547	+ 90.80
Newark, New Jersey	243,680	346,391	+102,711	+ 42.15
Oakland, California	51,504	309,002	+257,498	+ 499.96
Kansas City, Missouri	112,259	253,782	+141,523	+ 126.06
Cincinnati, Ohio	226,767	203,046	- 23,721	- 10.46

Source: A Survey of Techniques Used to Reduce Vandalism and Delinquency in Schools

TABLE 7-5

NASSD SURVEY RESULTS, 1973

Enrollment Classification	No. of Districts in Sample	No. of Schools in Sample	Enrollment	Burglary		Armed Robbery		Assaults		Rape/Other Sex Off.		Vandalism		
				No. of Offenses	Per Bldg.	No. of Offenses	Per 1000 Stud.	No. of Offenses	Per 1000 Stud.	No. of Offenses	Per 1000 Stud.	Total $	$/ 1000 Stud.	$/ Bldg.
Under 25,000	5	142	49,473	194	1.37	0	0	114	2.30	7	0.14	232.2	4,690	1,635.3
25-50,000	4	227	128,641	590	2.56	136	1.05	149	1.16	51	0.40	220.9	1,718	973.1
50-75,000	4	429	267,044	918	2.62	12	0.04	280	1.05	54	0.20	349.7	1,310	815.2
75-100,000	5	703	450,023	1,402	2.15	29	0.06	407	0.90	41	0.09	275.3	612	391.6
100-200,000	7	1,402	969,958	4,989	4.46	130	0.13	2,328	2.40	61	0.06	1,051.2	1,085	749.8
Over 200,000	2	991	817,542	789	2.31	3	0.003	1,984	2.43	24	0.03	1,135.3	1,389	1,145.6
Average	27 Total	3,244	2,682,681 Total	8,882	2.98	310 Total	0.12	5,262	1.96	238	0.09	3,264.6	1,217	1,006.4

Note: Not all school districts included in the sampling reported crimes for the entire base year.

On the other hand, there is an indication that a substantial number of school districts have begun to effectively counter their vandalism problems. The results of a 1974 survey of approximately 1230 school districts indicated that:

> ...while the public school districts surveyed have been spending substantial sums of money for preventive measures (an average last year of $33,000 per district), the amount of money they have lost due to vandalism has been cut substantially (by more than half, on the average, for all districts surveyed). In other words, in the last several years these schools have spent money on security measures in order to save money on vandalism losses -- and it has worked.[6]

Furthermore, while the dollar costs incurred through vandalism may indeed be heavy, its fear-producing potential is generally negligible since it is a crime perpetrated most often against school property.

(2) Other crimes against property. Outside of vandalism, the major crime against property in the school environment is burglary. On the average, according to NASSD survey analysis, each school is potentially subject to approximately three burglaries per year, with the highest rate occurring within school districts having 100,000 to 200,000 enrollment (see Table 7-5).

The significance of burglary within the school environment is emphasized when its incidence is compared to victimization rates within residential and commercial environments. Truly valid comparisons between these environments are not possible, since the rates in the commercial and residential modes are derived from statistically sound victimization studies, while the school data are based on an uncontrolled sample of 27 school districts, and since there are many more residences or commercial establishments than school buildings. However, as indicated in Table 7-6, comparison (on a limited sampling basis) suggests that burglary in the school environment is more prevalent on a per-unit basis than burglary in either the commercial or the residential environment.

Inasmuch as the NASSD survey does not provide a separate classification for the lesser crime of larceny (generally, theft of school property, not involving breaking and entering) and the NCP surveys do not collect information for the school environment on crimes against property, no statistical data on larceny exist at present.

(3) Crimes against person. The NCP national survey, as mentioned earlier, included an "inside school" category in its collection of responses on the victimization of persons by place of occurrence. As indicated in Table 7-7, this survey found that those incidents occurring most frequently in the school environments are minor assaults and unarmed robberies. In no case did more than 10 percent of any major crime category (from a sampling of more than 5 million incidents) occur in the school

TABLE 7-6

COMPARISON OF BURGLARY VICTIMIZATION BY ENVIRONMENTAL MODE IN SELECTED CITIES

Jurisdiction	Commercial Establishments	Residential Households	Schools
Atlanta	0.74	0.16	3.86
Baltimore	0.58	0.12	1.54
Dallas	0.36	0.15	5.00
Detroit	0.62	0.17	2.31
Portland	0.36	0.15	2.02
St. Louis	0.55	0.12	1.60

Source: NCP and NASSD Surveys

TABLE 7-7

PERSONAL INCIDENCE BY PLACE OF OCCURRENCE

	Total Incidence	Inside Home or Other Bldg.	Vacat. Home, Hotel, Motel	Near Home	Inside Non-Res. Bldg., Pub. Conv.	Street, Park Field, etc.	Inside School	Elsewhere	N.A.
TOTAL (Crime against Person)	5,213,200	11.3	0.3	8.8	15.9	46.6	6.8	10.1	0.1
Assaultive Violence	4,108,160	12.5	0.4	9.4	14.3	46.1	6.7	10.7	--*
With Theft	361,480	16.2	0.4	7.9	4.9	58.2	5.0	7.3	0.0
Rape	6,107	49.1	0.0	0.0	0.0	0.0	0.0	50.9	0.0
Attempted Rape	4,240	63.8	0.0	0.0	0.0	36.2	0.0	0.0	0.0
Serious Assault	194,440	14.6	0.7	9.5	2.6	64.1	1.5	7.0	0.0
With Weapon	171,240	13.9	0.8	9.0	2.9	64.8	1.5	7.0	0.0
No Weapon	23,200	19.5	0.0	13.1	0.0	58.9	1.5	7.0	0.0
Minor Assault	156,666	15.8	0.0	6.4	3.1	53.0	9.7	6.3	0.0
Without Theft	3,746,700	12.1	0.4	9.5	15.2	44.8	6.8	11.1	--*
Rape	36,480	31.6	0.0	0.0	0.0	45.4	0.0	23.0	0.0
Attempted Rape	114,307	27.3	0.0	6.1	5.7	47.8	1.8	11.3	0.0
Serious Assault	456,853	11.5	0.3	11.2	14.2	48.9	2.0	11.9	0.0
With Weapon	383,293	10.9	0.3	11.0	14.4	50.7	1.6	10.9	0.0
No Weapon	73,560	14.7	0.0	11.9	12.9	41.5	4.0	15.2	0.0
Att. Assault, Weapon	870,840	8.2	0.7	10.0	15.1	48.9	4.6	12.5	0.0
Minor Assault	560,213	10.0	0.3	6.8	10.4	45.7	8.6	10.5	0.0
Att. Assault, No Weapon	1,708,027	10.9	0.2	10.2	18.1	41.0	9.5	10.0	--*
Personal Theft, No Assault	1,105,040	6.8	0.3	6.6	22.0	49.2	7.3	8.0	0.3
Robbery	354,520	14.3	0.9	9.9	6.7	60.2	4.1	3.9	0.0
With Weapon	157,733	11.8	1.1	13.0	8.3	66.1	0.0	0.5	0.0
No Weapon	177,773	10.3	0.0	7.3	7.5	54.4	12.0	7.0	0.0
Attempted Robbery	268,040	5.8	0.0	6.8	11.4	56.8	11.8	7.3	0.0
With Weapon	111,500	4.4	0.0	12.7	9.6	63.8	1.5	6.0	0.0
No Weapon	156,520	6.9	0.0	2.6	12.7	51.8	19.1	6.8	0.0
Pursesnatch, No Force	100,613	0.0	0.0	7.2	27.9	55.3	5.7	4.5	0.0
Att. Pursesnatch, No Force	74,000	0.0	0.0	4.3	11.3	62.5	8.9	11.0	2.0
Pocket Picking	307,936	2.9	0.0	7.8	49.2	23.2	7.9	13.4	0.5

*Too small for significance

environment. However, although the NCP survey is based upon an extensive sampling, it has limited value for the purposes here because: (a) Victimizations are not separated into the major subenvironmental classifications (public school system and college/university); and (b) crimes occurring on school premises (grounds, parking lots, etc.) are not included. Consequently, it is impossible to determine conclusively, on the basis of the NCP data, the extent of crimes committed against persons in public schools or in colleges and universities.

As discussed in Chapter 4, crimes against property have been found in general to outnumber crimes against person. The school environment is no exception to this rule. However, it is important to note that crimes against person have been generally found to be reported less often than property crimes. Moreover, since there exists a serious deficiency in school reporting practices and in the reluctance of victims to report these crimes, the statistical data on these violent crimes suggest levels lower than their actual incidence.

Table 7-5 indicates that there are no obvious trends in armed robbery between school systems of different sizes for this crime. (However, it should be noted that statistics in the 25,000 to 50,000 category of student enrollment are distorted due to an extremely high number of incidents being reported from one school system.) The crime data on assault generated by the NASSD survey have limited value. The survey instrument asked the respondent school system to report the number of assaults, defined in the instrument as "the unlawful inflicting of or

intent to inflict bodily injury upon another." Therefore, it is impossible to determine how many attempts are included in the incident count, or how many of the assaults are verbal, aggravated, or simple. The NASSD survey (see Table 7-5) findings indicate an average of approximately 2 assaults per 1000 students. Finally, NASSD survey data suggest a low statistical probability of a student's being sexually molested.

It should be stressed that, in interpreting the crime data developed by the NASSD survey, several limitations must be considered:

- Relatively small sampling of crime data.
- Consistency and standardization problems.
- Variations in the political, economic, and social structures in respondent school systems.
- Variations in the level and kinds of security resources in current use within the respondent systems.

In terms of statistically measured incidence, the severity of the various assaultive-type crimes against person appears to be low. However, it is necessary to recognize that mere numerical incidence conveys nothing of the fear or other personal consequences engendered by these incidents, nor does it indicate the extent of the disruptive and demoralizing impact these crimes have. For measures of this nature, it becomes necessary to draw upon the more subjective descriptions and assessments afforded by other sources.

The public hearings held on the Safe Schools Act of 1971 did much to bring to light the gravity of crimes against persons occurring in the public schools, through the testimony of various individuals such as Mr. Albert Shanker of New York City. He indicated the severity of assaults which have been committed on the New York City teachers and students by his statement that, "There have been teachers in our schools who were doused with lighter fluid and set afire -- others who were beaten unconscious -- others who were raped -- and many robbed. And there have been students so badly assaulted that they required plastic surgery."***** Additionally, Mr. Shanker identified a list of assaults committed against New York City school teachers (see Table 7-8).

A 1970 survey of 110 urban school districts produced by the Senate Subcommittee on Juvenile Delinquency showed an alarming increase in some categories of crimes against persons, as well as crimes against property. Table 7-9 shows these increases in percentage figures for the period from 1964 to 1968.[7]

In August 1973, the Senate Subcommittee expanded its research by sending out questionnaires to superintendents of 757 public school districts with enrollments greater than 10,000 pupils. Once again, its purpose was to gauge levels and directions of school crime. The 68-percent response provided some data on trends during the years 1970 through 1973 for the school incidence of homicide, rape, robbery, assault on students, assault

*****-Statement of Albert Shanker quoted from public hearings on the Safe Schools Act of 1971. New York City, 1971.

TABLE 7-8

REPORTED ASSAULTS ON TEACHERS IN THE NEW YORK CITY SCHOOL SYSTEM OVER A 3-MONTH PERIOD, 1971

District	School	Date	Comments
Central	New Utrecht	2/17	Ammonia spraying
12	J.H.S. 136K	2/18	Accosted by several students and beaten
14	P.S. 81K	2/22	Assault by parent
9	P.S. 100K	2/23	Hit in yard
15	P.S. 46K	2/23	Broken teeth
22	P.S. 202K	2/23	Glasses broken
20	P.S. 201	2/24	Knife thrown
2	I.S. 70	2/23	Chair thrown
31	P.S. 13R	2/24	Hand bitten - swelling
1	P.S. 61M	2/25	Robbery
2	Manhattan Voc. H.S.	2/25	Punched on cheek
4	J.H.S. 134	2/23	Chair thrown
13	J.H.S. 294K	2/26	Canned soda thrown
27	J.H.S. 210	2/26	Glasses broken
10	J.H.S. 45	2/28	Teacher attacked with pickaxe
	Claire Barton	3/2	Mace
17	P.S. 202K	3/3	Broomstick handle thrown
3	I.S. 44	3/4	Kicked downstairs
5	P.S.92M	3/4	Purse snatched
	Washington Irving	3/5	Chair thrown
14	P.S. 257K	3/5	Robbery at knife point
14	P.S. 257K	3/5	Attempted rape
1	P.S. 63M	3/6	Attendance teacher robbed at knife point
14	J.H.S. 126K	3/6	Struck by object-glasses broken
	Music Art High School	3/7	Beaten unconscious
3	I.S. 44	3/7	Kicked in groin
3	J.H.S. 54	3/8	Mace sprayed
17	P.S. 202K	3/8	Punched in mouth
20	J.H.S. 201K	3/8	Kicked in groin
4	J.H.S. 134	3/9	Hit in lip with blackjack
	P.S. 10	3/11	Cut by scissors
	P.S. 10	3/11	Chair thrown
	P.S. 10	3/12	Chair thrown
1	P.S. 63M	3/13	Attempted rape
24	Grover Cleveland H.S.	3/15	Knocked down
23	P.S. 144	3/16	Assault at gunpoint
23	J.H.S. 275	3/17	Chair thrown
17	J.H.S. 252K	3/17	Struck on head by books
23	J.H.S. 275	3/19	Finger broken
25	J.H.S. 168	3/22	Purse snatched
13	P.S. 305	3/22	Beaten by parent
1	P.S. 63	3/24	Robbery
13	P.S. 20	3/23	Broken glasses, bruised lips
17	I.S. 210	3/24	Broken beaker attack
17	P.S. 268	3/24	Attempted robbery
3	I.S. 44	3/25	Kicked in groin
5	P.S. 36	3/25	Robbery at knifepoint
17	P.S. 189	3/25	Knocked to ground
27	J.H.S. 210	3/25	Sprained right thumb
9	P.S. 53	3/26	Mugged in front of school
5	P.S. 200	3/29	Robbery at knifepoint
4	P.S. 43	3/29	
23	I.S. 271	3/30	Struck with bottle and stick
23	I.S. 271	3/30	Pushed to floor
17	P.S. 202	3/31	Assault with broomstick handle
16	P.S. 245	4/2	Knocked to ground
27	P.S. 42	4/7	Assault by parent
28	P.S. 140	4/9	Parent assault on pregnant teacher
15	I.S. 293	4/22	Attack by students
15	P.S. 145	4/23	Pushed down flight of stairs
27	P.S. 104	4/26	Kicked in groin
3	I.S. 44	4/27	Glasses broken by blow
22	P.S. 100	4/29	Chair thrown by student
14	J.H.S. 126	4/25	Books thrown
3	I.S. 44	4/30	Struck by [illegible]
15	I.S. 293	4/30	Assault [illegible]

Source: New York City Chapter, American Federation of Teachers, Federation of Teachers

TABLE 7-9

TRENDS OF CRIME IN ELEMENTARY AND SECONDARY SCHOOLS, 1964-1968

Category	1964	1968	Percent Increase
Homicides	15	26	73
Forcible rapes	51	81	59
Robberies	396	1,508	281
Aggravated Assaults	475	680	43
Burglaries, larcenies	7,604	14,102	85
Weapons offenses	419	1,089	160
Narcotics	73	854	1,070
Drunkenness	370	1,035	180
Crimes by nonstudents	142	3,894	2,642
Vandalism incidents	186,184	250,549	35
Assaults on teachers	25	1,081	4,224
Assaults on students	1,601	4,267	167
Other	4,796	8,824	84

Source: Senate Subcommittee on Juvenile Delinquency Survey, 1970.

on teachers, burglary, drug and alcohol offenses, and weapons possession (see Table 7-10). Although the changes in the levels of these crimes offer only limited utility without the 1970 base data concerning the actual level of crime, they do corroborate most of the other evidence regarding the severity of school crime. All of the categories mentioned above underwent nationwide increases during that three-year period, ranging from an 11.8-percent increase in burglaries to an 85.3-percent increase in assaults on students.

The seriousness of violent personal crimes in the school environment is further reflected by the following quotation taken from Today's Education, a national education journal:

> Violence in the schools is increasing and so are assaults on teachers by students, parents, and intruders in the schools. All of the studies indicate that city schools have the lion's share of the shootings, beatings, and rapes that occur in elementary and secondary schools . . .

And an Education U.S.A. survey of 44 urban, suburban, and rural school districts in mid-1970 found that of those reporting increases in violence against students and staff members, the rates ranged from 5 to over 100 percent. However, many districts were unable to give

TABLE 7-10

PERCENT CHANGE BY CRIME TYPE AND BY REGION, 1970-1973*

Crime Type	Percent Increase or Decrease			
	Nationwide	Northeast	Northcentral	South	West
Homicide	+18.5	+20.1	-----	+ 25.4	+26.6
Rape & Attempted Rape	+40.1	+37.9	+60.0	+ 28.4	+52.3
Robbery	+36.7	+39.3	-----	+ 51.7	+98.3
Assault on Students	+85.3	- 2.2	+20.5	+276.9	+77.4
Assault on Teachers	+77.4	-----	+52.4	+316.4	+ 6.4
Burglary of School Buildings	+11.8	-----	+ 2.1	------	+ 2.7
Drug and Alcohol Offenses on School Property	+37.5	+14.8	+97.4	------	+18.1
Vandalism	-----	-12.0	+19.5	------	+15.7
Weapons Confiscated	+54.4	+20.6	+ 6.7	------	-----

*Complete figures are not available for all regions or all crime categories
Source: Preliminary Report of the Subcommittee to Investigate Juvenile Delinquency, 1975

comparisons because they have just started to keep accurate records of violent incidents.[8]

b. Fear. Information pertaining to the fear engendered by crimes against person also serves to focus the picture presented by the statistical data. Statistical evidence related to the fear of crime in schools is limited. However, a recently published research report prepared for the Law Enforcement Assistance Administration by Temple University provides some insight into the problem.[9] Based on a probability sample, over 500 black and 500 white boys born in 1957 and attending schools in a large city were interviewed with their mothers. Analysis of the data provides some indication of the level of fear in the school environment and its consequences, and the uneven distribution of expressed fear by race of the respondents.

The authors reported the following as regards the fear of crime and the quality of education:

> We find that there is fear of danger and violence in regard to school yards, school halls, and school rooms. Our respondents, to a high degree, report an atmosphere of fear . . . [and] ...teachers may also have some of these feelings. ... Under these conditions, given the best good will, the best techniques and the ideal curriculum learning would be minimal in such an atmosphere. ...

* * *

> The further and perhaps not too surprising fact is that the schools attended by blacks and the streets they have to travel are viewed as extremely dangerous. When close to half the black boys and one-fourth of the whites view the streets to and from school as extremely dangerous and one out of five black youths even say the school room is a dangerous place, then it must be admitted that the problem is reaching immense proportions. ... The perceptions of the white boys are somewhat better but even when their answers are examined, from about one-fifth to one-third are afraid of school halls and school yards.

Their findings are tabulated in Table 7-11.

c. Environmental patterns. At present, no existing survey results or research report findings offer information on the severity of crime by region. (The U.S. Senate Subcommittee data presented in Table 7-10 refer only to *trends*.) Although the NASSD survey has tabulated results for variously sized school districts, these results are limited -- because of the serious inconsistencies and deficiencies in reporting described above, and because mere size of a district (with no indication of other socioeconomic characteristics of the area) ignores many of the factors that contribute to its crime problem. However, it can probably

TABLE 7-11

DANGEROUS PLACES AT SCHOOL AND STREETS GOING TO SCHOOL, PERCENTAGE YOUTHS ANSWERING AFFIRMATIVELY

	Black	White
School Rooms	21.0	12.0
School Yards	46.5	29.8
School Halls	27.8	17.5
Streets to School	54.5	24.5

Source: City Life & Delinquency

be assumed, as suggested in the quotation drawn from Today's Education cited above, that "city schools have the lion's share of the shootings, beatings and rapes (and other lesser physical confrontations) that occur in elementary and secondary schools." The school environment would thus tend to display the pattern of geographical distribution noted for crime in the other environments. Furthermore, as this article also indicated, one could expect crime in the school environment to display the same rising trends for all types of areas -- rural, suburban, and urban -- as displayed by crime in general.

Existing statistical data also fail to provide measures of incidence of the various crimes by the specific locale in which they occurred -- either inside school buildings or on the grounds and adjacent areas. Thus, it will be necessary to assess this patterning at the specific site chosen for the CPTED demonstration in the school environment. It should be noted at this point that such an assessment must include consideration of the public school system as a crime generator -- a congregating point for an offender population -- inasmuch as the residential, commercial, and transportation environments all experience, in varying amounts, crime perpetrated by school-age youngsters in connection with their travel to and from school and their activities during nonschool hours of the day.

d. Offender/victim profiles. The existing data also fail to provide useful information with respect to the nature of the offender and victim populations, except to suggest that these groups include not only

members of the school system (students, and teachers [whose national total is approximately 3,000,000, as indicated in Table 7-12]) but outsiders as well. Offenders are also likely to be recent school dropouts, local drug pushers, and robbers and burglars not associated with the system. Victims include persons maintaining businesses or residing in areas peripheral to the school premises. (See Table 7-1.)

On the basis of the information presented heretofore, one can make the subjective assessment that a higher percentage of crimes perpetrated within the school, as compared to other environments, fails to qualify as "stranger-to-stranger" crimes (i.e., a large proportion occurs between persons acquainted with one another through common membership in the school system).

e. Intervention strategies against school crimes. In the identification of approaches taken by school systems to counter crime and the fear of crime, it has been found that effective security countermeasures for application in the school environment must encompass an almost unlimited range of preventive functions, for they are designed to deter illicit activities ranging from minor graffiti inscription to criminal assault. A large number of these strategies consist of "target-hardening" techniques designed to protect school property. Table 7-13, based upon comparisons of two recent surveys completed by School Product News, indicates the type of products used, the extent to which they have been implemented and their respective costs.

TABLE 7-12

POPULATION AT RISK: NATIONAL SCHOOL FIGURES, 1970

	Number of Establishments	Total Number of Students	Size of Faculty
1) Primary (Elementary) Schools K-6	78,392	28,887,000	1,278,000
2) K-12	1,780	22,990,363	1,000,000
3) Secondary (7-12) & Post Secondary	27,342	9,214,860	574,000
4) Higher Education	2,556		

Source: Digest of Educational Statistics, 1970

TABLE 7-13

SECURITY PREVENTIVE MEASURES USED -- PERCENT OF DISTRICTS REPORTING AND AVERAGE COST PER DISTRICT

	1971-1972		1972-1973	
Preventive Measures	Percent	Average Cost($)	Percent	Average Cost($)
Guards	56.0	40,731	56.7	46,097
Vandalism/resistant Windows	45.9	20,422	59.1	13,190
Intrusion/detectors	30.6	10,978	33.5	12,870
Intrusion alarms	34.3	10.656	36.0	7,399
Fencing	21.3	2,471	21.3	5,728
Fire/smoke/heat detectors and alarms	18.7	24,567	20.1	5,233
Special lighting	44.4	2,310	42.1	4,006
Locks	35.1	2,033	38.4	2,148
Other	1.9	7,276	1.8	7,667

Anticrime strategies less traditional than those mentioned in this table and aimed at protecting persons are also finding application in the school environment. For example, the United Federation of Teachers recently authored and distributed a booklet aimed at increasing the personal security of individual students, teachers, secretaries, paraprofessionals, and other school employees.[10]

2. Colleges and Universities. As in the elementary and secondary public schools system, no substantial crime data base for offenses occurring at the college and university levels. A personal conversation with Mr. John Powell, Executive Secretary, International Association of College and University Security Directors, on June 27, 1974, confirmed the Research Support team's findings that there is no national crime data repository possessing any significant amount of offense or offender data.

The Uniform Crime Reporting program of the FBI has published crime statistics for the UCR Index crimes in 1971, 1972 and 1973; however, only a small number of voluntarily participating colleges and universities are represented. A comparative analysis of 17 colleges and universities whose Part I (Index) crimes are published for both the 1971 and 1972 calendar years is presented in Table 7-14.****** This indicates that,

******1973 FBI reported crime data for the colleges and universities have not been included in the comparative analysis table because of newly instituted FBI reporting procedures that might tend to distort the analysis. Prior to 1973, only larcenies of $50.00

TABLE 7-14

COMPARATIVE ANALYSIS OF KNOWN INDEX OFFENSES FOR SEVENTEEN COLLEGES AND UNIVERSITIES, 1971-1972*

College or University	Total Crime Index			Forcible Rape			Robbery			Aggravated Assault			Burglary			Larceny (over $50)		
	1971	1972	% change	1971	1972	% change	1971	1972	% change	1971	1972	% change	1971	1972	% change	1971	1972	% change
Arizona State U.	705	576	- 26.6	1	4	+300.0	---	7	N.A.	57	16	- 56.8	110	137	+ 24.5	566	373	- 34.1
U. Cal. (6 campuses)	2,151	2,700	+ 6.4	12	15	+ 25.0	30	29	- 3.3	39	68	+ 74.4	368	260	- 13.0	1665	1031	+ 10.2
Colo. State U.	531	407	- 23.8	2	4	+100.0	1	--	-100.0	12	10	- 16.7	38	23	- 39.5	471	364	- 22.7
Central Mich. U.	149	261	+ 30.1	--	--	--	--	--	--	2	5	+150.0	20	13	- 35.0	115	247	+ 46.7
Eastern Mich. U.	385	306	- 4.9	--	3	N.A.	9	10	+ 11.1	11	24	+118.2	47	34	- 19.0	308	283	- 8.1
Ferris State Coll.-Mich.	215	176	- 20.2	--	--	--	--	--	-100.0	9	8	- 11.1	35	26	- 25.7	198	138	- 30.3
Mich. State U.	1,470	1,350	- 8.7	9	4	- 55.6	10	15	+ 50.0	78	49	- 37.2	577	477	- 26.0	754	829	+ 9.8
U. Minn.	1,100	993	- 10.0	2	4	+100.0	22	5	- 77.3	18	9	- 50.0	130	92	- 33.3	690	760	- 15.4
U. Miss.	89	107	+ 20.2	--	--	--	--	--	--	6	1	- 83.3	10	16	+ 60.0	72	88	+ 22.2
U. Nebr.	274	257	- 6.2	--	2	N.A.	--	4	N.A.	1	4	+300.0	--	57	N.A.	206	187	- 29.3
New Mexico State U.	190	190	- 4.0	--	--	-100.0	--	--	-100.0	5	4	- 20.0	12	12	0.0	160	163	- 3.0
Kent State U., Ohio	317	555	+ 75.1	3	4	+ 33.3	--	7	+100.0	9	15	+ 66.7	43	218	+407.0	233	293	+ 25.8
U. Okla.	656	646	- 1.5	--	--	--	3	3	--	20	8	- 60.0	154	153	- 0.6	470	454	- 3.4
Slippery Rock State Col.-Penn.	77	51	- 20.8	--	--	--	--	--	--	3	--	-100.0	23	13	- 43.5	51	36	- 29.4
Southwest Texas U.	85	125	+ 32.0	--	--	-100.0	--	3	N.A.	--	3	N.A.	1	62	+6100.0	69	52	- 24.6
U. Texas (6 campuses)	1,042	594	- 44.0	1	1	0.0	10	9	- 10.0	26	30	+ 15.4	307	154	- 49.8	633	366	- 42.2
U. Wis. (2 campuses)	1,020	1,000	- 7.7	2	5	+150.0	0	3	+ 62.5	9	19	+111.1	349	316	- 9.5	646	632	- 2.2
TOTAL NUMBER OF OFFENSES	10,633	9,842	- 7.4	34	46	+ 35.3	97	87	- 10.3	285	272	- 4.2	2067	2019	- 2.3	7633	7095	- 7.1
AVERAGE NUMBER OF OFFENSES AND PERCENTAGE CHANGES	625.5	578.9	- 7.5	2	2.7	+ 35.0	5.7	5.1	- 10.5	16.8	16.1	- 4.2	121.6	110.8	- 2.3	449	417.3	- 7.1

*Auto theft is not included in this analysis because it is not considered as fully within the purview of the CYTED program.

Source: FBI UCR 1971 and 1972

while 5 institutions showed increased crime, 12 displayed a decline in the Total Crime Index; the same diversity of trends is found for each individual type of crime.

The type of statistics cited above undoubtedly has significant value to academic and security administrators at the University of Georgia but adds little to CPTED Program understanding of the severity and nature of crime in the Nation's colleges and universities. At the present time, the Research Support team is unaware of any current plans to enlarge the base of understanding about crime on college campuses.

Occasionally, professional security journals publish articles, reports, feature stories, and other items that may include crime statistics for colleges and universities. A recent example of this type of journalism appeared in the Campus Law Enforcement Journal.[11] In an article entitled, "New Directions in Campus Law Enforcement," by Edward T. Kassinger, Director of Public Safety for the University of Georgia, crime and arrest statistics for the university are published (see Table 7-15).

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and over were listed as Index Crimes; however, beginning in 1973, all reported larcenies are included as Index crimes. Consequently, the larceny count and Total Crime Index for 1973 would be proportionately distorted when compared to previous reports (1971-1972).

TABLE 7-15

UNIVERSITY OF GEORGIA CRIME STATISTICS, 1969-1973

	Total Incidents			
Major Crimes	FY 69-70	FY 70-71	FY71-72	FY 72-73
Robbery	8	0	1	4
Assaults	34	39	18	22
Breaking & Entering	52	47	24	26
Larceny	815	767	671	616
Motor Vehicle Theft	40	27	36	27
Arson	12	11	2	1
Bomb Threats	23	7	6	6
Sex Offenses	82	91	75	32
Total	1,066	989	836	734

	Total Arrests			
Classification	FY 69-70	FY 70-71	FY 71-72	FY 72-73
Students	23	28	53	40
University Employees	12	6	3	5
Non University Related Persons	74	95	56	50
TOTAL	109	139	112	95

The paucity of offense and offender data in the colleges and universities is equalled by the limited scope of information on security programs currently operating. There does not appear to be significant source material available that describes security programming -- type and scope of current resources -- in the Nation's colleges and universities. Under present circumstances, it seems reasonable to assume that such knowledge will not be widely disseminated until the subject area is thoroughly studied and results are published.

D. Potential Crime/Environment Targets

Based upon evaluation of the available information, the following recommendations seem reasonable, as summarized in Table 7-16: That elementary schools be eliminated on grounds of the low degree of crime and fear present in this subenvironment, and that special schools be eliminated due to their relatively few sites and persons at risk. Thus, retention of secondary and postsecondary (college and university) institutions as potential demonstration targets is recommended. Of the two, the secondary public school system target should be given primary consideration on the grounds that: (a) Secondary schools far outnumber colleges and universities and have a much larger population at risk; (b) the presence at school of a large portion of the secondary school population is dictated by law; and (c) the need for crime prevention efforts is greater for secondary schools, since colleges and universities are far more likely to have their own resources available in the form of full-fledged security departments, while most public secondary schools must rely on local police to address their crime problems.

TABLE 7-16

THE SCHOOL ENVIRONMENT -- PRELIMINARY DISPOSITION OF TARGETS

School Mode	Prime Reasons for Elimination				Candidate for CPTED Program
	Low Crime	Low Fear	Few Sites	Low Population at Risk	
Elementary	X				
Secondary		X			X
Post Secondary			X	X	X
Special Schools			X		

These recommendations, however, must be regarded as somewhat conditional, in light of two underlying considerations. First, as has been stressed throughout the text of this chapter, the absence of a substantial, nationally representative body of crime data at the present time threatens to seriously reduce the potential target selections. Second, the above recommendations run counter to the conclusions of at least one major research report which stated its overall recommendation with regard to the problems of crime and violence in public schools in the following way:

> There are many problems of criminal and disorderly behavior among high school aged American young people, which may if we choose be seen as urgent national problems of policing or law enforcement. They cannot be attacked, however, as peculiarly *high school* problems, although some of them may be more intense in schools than elsewhere. High schools no longer take complete responsibility for the public lives of their students, and have given up (or "externalized") many problems; adapting to them rather than controlling them. It is unlikely that an attack on the "youth crime" problem which seeks to return students (in their public and personal behavior) to the jurisdictional control of the high school will be successful.[12]

The statement does concede that an attack on school crime might be successful if marshaled through school organizations. The Research Support team supports this concession and bases its optimism for potential success of a school anticrime demonstration on the inherent mandate of the CPTED Program. In the context of this mandate, the Program is concerned with the reduction of crime *not* (in concurrence with the above position) as a distinctively school-associated problem but as the general occurrence of common, predatory acts which capitalize upon the school environment as affording numerous random targets that offer slight risk of apprehension and require little or no preparation.

Finally, in light of the recommendation for retaining secondary and postsecondary institutions as primary and secondary target environments, respectively, some suggestions are offered with respect to those crimes against which the CPTED demonstration should be directed in these sub-environments. As the sections above have documented, there is a high degree of concern over both crimes against property and crimes against person in this environment. Dollar costs incurred by schools as a result of the property crimes (particularly vandalism, arson, burglary, and larceny) are, as noted, very high.******* Furthermore, crimes of this type

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*******Further example of the severity of this type of offense is provided by Mr. Joseph V. McBrine, Chief of Security, Public Facilities Department, City of Boston, who views arson as a major threat to school buildings and property, and cites an average incident rate

can also cause heavy losses of property in the residential, commercial, and transportation environments as well, since members of the secondary school population perpetrate these offenses in areas adjacent to the school grounds.

While loss of property in the school environment runs high, the severity and consequences of the crimes against persons (assaultive-type crimes such as robbery, assault, and rape) are also great. As indicated in Chapter 3, evidence of the gravity of these types of incidents and of the degree of fear that they induce is best presented through illustration in the form of individual accounts. For example, it has been suggested by Mr. John Powell of the International Association of College and University Security Directors that, perhaps more than any other crime, sexual assaults upon women at colleges and universities are responsible for the alarm over crime currently found among the populations of these institutions. Further illustration is found in newspaper accounts such as the recent article documenting the fact that public school teachers

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of two or three per week. The damage, in many cases, is not serious; however, if the structural integrity of a building is impaired, the fact that the weakened facility is lost to the operation of the educational system entails grave indirect dollar costs.

in a large urban center were arming themselves with handguns as protection from student attacks.

In the selections of the CPTED target crimes, the basic criteria presented in Chapter 2 suggest that the CPTED demonstration should be directed against those crimes that: Occur most numerously, produce a high level of fear, inflict emotional imbalance or physical injury, produce heavy economic losses, and appear to be amenable to impact by environmental design strategies. In assessing the relative weights of these criteria, the CPTED Program subscribes to a two-pronged approach directed towards combating both personal and property crimes, but emphasizing the importance of reducing crimes against persons as a first priority.

In sum, while the assaultive crimes of robbery, rape, and other assaults may not be the most severe in terms of numerical incidence or economic cost,******** the protection of individuals from the physical harm and fear engendered by these crimes is of highest priority in terms of CPTED objectives. Furthermore, it is believed that CPTED strategies for the proper design and effective use of school buildings *can* foreclose opportunities to commit many such crimes.

** ***However, hidden dollar costs for these crimes (such as those due to absenteeism, hospitalization, special security efforts) may not be reflected by common measurements.

CHAPTER 8. THE TRANSPORTATION ENVIRONMENT

This chapter discusses the transportation environment in light of the relevant criteria identified in Chapter 2. Section A provides clarification of the subenvironments that are considered. Data sources and problems are discussed in Section B, while Section C consists of a discussion of crime/environment information pertaining to the subenvironments under consideration -- urban mass transit systems in general, and local bus and local rail modes in particular, plus the secondary subenvironments targets. Finally, Section D identifies potential crime/environment targets for the CPTED Program. Robbery, assault, larceny, and vandalism are identified as the crimes of concern in and around urban mass transit local rail stations.

A. Introduction

Transportation can be narrowly defined as a "means of conveyance or travel from one place to another."[1] This report takes a much broader view of transportation, including not only the vehicles of travel but also the terminals and facilities connected with travel (see Table 8-1). This CPTED interpretation shares some subenvironments with the other major environments treated by this report. For example, public motor vehicles (including taxicabs), parking facilities, service stations, and freight terminals are also defined as commercial establishments, while private vehicles are considered part of the household (and, therefore, residential mode).

Table 8-1 also highlights, by process of elimination, those subenvironments qualifying as candidates for further CPTED consideration.

TABLE 8-1

TRANSPORTATION -- PRELIMINARY DISPOSITION OF TARGETS

	Prime Reasons for Elimination				Candidate for CPTED Program
	Low Crime	Low Fear	Few Sites	Low Social Dependency	
PASSENGER					
Motor Vehicles					
Private	x				secondary
Public (including taxicabs)			x	x	secondary
Parking Facilities				x	secondary
Service Stations				x	secondary
Bus					
Local	x	x	x		primary
Long Distance	x	x			primary
Rail					
Local (including subways)	x	x	x		primary
Long Distance	x	x			primary
Air	x	x	x	x	secondary
FREIGHT					
In Transit					
Truck					
Rail					
Air					
Water					
Terminals					

The candidate subenvironments are divided into two groups: (a) Those labeled as primary (by potential impact considerations) -- local bus* and local rail (i.e., the urban mass transit environment); and (b) those labeled as secondary -- private motor vehicles, public motor vehicles, parking facilities, service stations, and freight terminals.

B. Source Materials

Data to define crime problems in the secondary subenvironment targets are scarce and limited in scope; such data are introduced in the "Secondary Targets" portion of Section C. This section discusses the general limitations of available data and introduces data sources used in this report for the urban mass transit subenvironment.

1. Limitations of the Data Base. While collections such as the FBI UCR and the NCP surveys tabulate data relating to the other major environments on a nationwide basis, virtually no specific information pertaining to urban transportation environments is obtainable from such data sources. In fact, limited transportation data are available even on a local scale; few city police departments around the Nation keep records of individual transit companies -- those kept by special security forces or, in most cases, those of the management itself -- are generally the sole sources of information on the incidence of crime.

2. Major Sources.

a. American Transit Association -- VAPS study. In 1972, the American Transit Association (ATA) attempted to measure the extent and

*School buses, sightseeing buses, etc. excluded.

seriousness of crime and vandalism in urban mass transit by assembling and analyzing, for the first time, the statistical data maintained by individual transit companies. "Vandalism and Passenger Security: A Study of Crime and Vandalism on Urban Mass Transit Systems in the United States and Canada,"[2] (hereafter referred to as the VAPS study) surveyed the records of 37 U.S. and Canadian transit systems for the years 1970 and 1971 (and, in some cases, 1969).

Several difficulties were documented by this report. Virtually no long-term data collections were available; some companies kept no records at all, while those of others were often sketchy or inadequate. The most pervasive problem arose because the transit companies exhibited no uniformity in defining acts of crime and vandalism. Thus, the VAPS authors stressed that it is impossible to draw comparisons between transit systems and that, because the extent of nonreportage is impossible to ascertain, measurements cannot be regarded with certitude.

The VAPS study stressed the serious need for standardization in recordkeeping. It presented a tentative set of standard reporting forms and recommended their use to transit companies around the country. Adoption of standardized procedures on a wide scale would represent an important step towards the accumulation of an adequate and accurate data base for assessing crime and vandalism problems.

b. Urban Mass Transportation Administration -- Chicago study. A second organization provided another prime source of information for

the transportation environment, the Urban Mass Transportation Administration (UMTA) of the U.S. Department of Transportation. The findings of a UMTA-sponsored project for the improvement of transit security in Chicago provide a much-needed supplement to those of the ATA; furthermore, they serve to qualify and even to counter ATA conclusions. Because the Chicago Police Department keeps a record of transit-related crimes, this study[3a] was able to undertake a detailed analysis of both local bus and local rail incidents, and thus to make comparisons between the two modes. The public attitude survey conducted by the study provided more comprehensive information on passenger perceptions of transit security than was previously available.

3. Additional Sources. Other published materials, ranging from brief articles to research reports, provide lesser contributions to an assessment of the transportation crime problems. Table 8-2 summarizes primary source materials for the three urban mass transit subsections (i.e., general, local bus, and local rail) indicating the subject matter addressed by each document.

C. Crime Environment Discussion

To the extent possible and with use of available data, each target is discussed in the context of the criteria identified in Chapter 2. For convenience and clarity, this section includes four subsections dealing with the general urban mass transit problem, the local bus system, the local rail system, and the secondary targets, respectively.

TABLE 8-2

URBAN MASS TRANSIT -- SOURCE MATERIALS

	Scope		Crime Related Information						Transportation Targets	
	National	Local	Severity	Fear	Offender/ Victim	Environment	Displacement	Intervention Strategies	Local Bus	Local Rail
VAPS	Spotty	---	x	x	x	---	---	x	x	x
Chicago CHU	---	x	x	x	x	x	---	x	x	x
LPD	---	x	---	---	---	---	---	---	---	---
UL	---	x	x	---	x	x	---	x	x	x
MC Transit	Spotty	---	x	---	x	---	---	x	x	---
NYC Subway	---	x	x	---	x	x	x	x	---	x
Bus Vandalism	Spotty	---	x	---	x	---	---	x	---	---
Scrip System	---	x	x	---	x	---	---	x	---	---
Methodology			---	---	---	---	---	---	---	---
Subway Security	---	---	x	---	x	x	---	x	---	x
Rail Research	---	---	x	---	---	x	---	x	---	x

1. Urban Mass Transit -- The General Crime Problem. Nationwide focus on crime as a serious problem in urban mass transit systems is a relatively recent phenomenon. The 1960's witnessed an upsurge in transit-related crimes which, spotlighted by the media, alarmed the public as it also aroused serious concern on the part of transit management and law enforcement officials.[4] As a result, attempts have been made in recent years to measure the incidence of transit crimes, to ascertain whether the upward trend has continued, and to determine the impact as registered by public fear of using mass transit. The VAPS study attempted to develop such an information base on a nationwide scale. However, given the inherent difficulties described, the conclusions of the VAPS study are limited.

While the size of the figure for total crime incidents extrapolated by the ATA (33,000 to 39,000 for 1971) indicates a problem of some magnitude, it is difficult to comprehend the severity of the problem on the basis of this figure alone. An additional measure, the crime risk experienced by transit users in comparison with risk experienced under general circumstances, provides somewhat more meaningful evidence. As indicated in Table 8-3, the ATA researchers and the Carnegie-Mellon University team in Chicago, using somewhat different considerations, reached opposite conclusions concerning transit crime risk. The former determined that risk was twice as great in transit circumstances, while the latter found transit risk to be only one-third as great in nontransit circumstances.

In addition, the Carnegie-Mellon team calculated average "crime ridership indexes" per million entries into the CTA rapid transit and bus

TABLE 8-3

CRIME RISK: TRANSIT VS. NONTRANSIT CIRCUMSTANCES

Study	A Basis for Computation (Transit Crime Measure)	B Basis for Comparison (General Crime Measure)	RATIO A:B RISK
ATA: "Transit Violent Crime Exposure Index"	Number of Transit Violent Crimes per Average Number of 15 Minute Trips per Person/14 Major Cities	UCR Index Rates, 14 Cities	2:1
CMU, Chicago: "CTA Rapid Transit Community Risk:	Number of CTA Robberies (Bellweather Indicator of Violent Crime) per Daily CTA User 16 Years or Older	Non-Transit Robbery Rate, Chicago's 21 Police Districts	1:3

system. At 0.7/ million entries for bus and 7/ million for rapid transit, they concluded that the risk factor -- even in recognition of a risk factor of 91/ million in the most "dangerous" part of the network -- could not be construed as cause for alarm.[3b]

Although the ATA and the Carnegie-Mellon team arrived at different interpretations of the magnitude of risk involved, both studies agreed that subjective factors play as important a role in determing public perception of the crime problem as do the purely objective realities. Faced by a steady decline in ridership over past decades, mass transit officials have sought to understand the nature of public perception of transit crime and the extent to which it adversely affects people's decisions to use public means of transportation.

The results of several studies do not yield a simple conclusion. While a Milwaukee attitude survey on the influence of crime, vandalism, and other socially disruptive behavior found no probable influence on ridership, a nearly identical survey in Washington, DC, reached the opposite conclusion. (A later DC study reversed earlier findings, an example of the perplexing problem of accurately measuring rider attitudes.) In studies examining such influences after a serious criminal incident, Baltimore found no related decrease in ridership, while Cleveland found positive evidence of decrease. Thus, the VAPS report concludes with regard to such surveys that crime and vandalism *can* exert a strong influence on ridership decisions but only as subject, in varying degrees, to a multiplicity of factors. Among these are volume of actual incidents

in the area served, transportation alternatives available, and socio-economic status of the respondent. On this issue, the Milwaukee attitude survey found no conclusive evidence that perception of transit crime was affected by the individual user's socioeconomic background; however, those surveyed were users of a route along the length of which the incidence of crime was quite uniformly low. Perhaps more meaningful as evidence are the results of a citywide transit study conducted in Chicago, which found that lower income (and black) users perceived the incidence of crime on the transit system to be much higher than did higher income users. It has been suggested that, due to this group's greater degree of exposure (more frequent trips, greater dependency on public transportation), a greater awareness of crime is understandable.

Overall results of a public attitude survey conducted in Chicago by the University of Illinois[3c] to compare fear in bus and rail are presented in Table 8-4. The survey found that public perception of security did play a significant role in determining transit usage in Chicago. In addition, the ability to compare bus-related responses with rapid-transit-related ones provided a means of assessing the extent to which public perception of transit crime is realistic. In Chicago, the higher degree of fear registered with regard to use of the rail system does correspond with the actually higher degree of risk for rail patrons.

The influence of vandalistic acts on public fear has been recognized; in some cases the influence has been affirmed by attitude surveys, although the degree of impact has remained undetermined. Thus, an upsurge of van-

TABLE 8-4

PUBLIC FEAR/ACTUAL RISK -- BUS VS. RAIL

Transit Type	Measures of Public Fear			Measures of Actual Risk	
	Consider the Safer of the Two Means	Will Not Use Because of Fear of Crime (Nonriders)	Feel Most Secure While Riding (Total No. Responses)	Crime-Ridership Index	% of Total Serious Transit Crimes
Bus	70%	28%	N=9	7/Million entries	25%
Rail	16%	21%	N=40	7/Million entries	75%
			Feel Least Secure While Riding (Total No. Responses)		
			N=16		
			N=60		

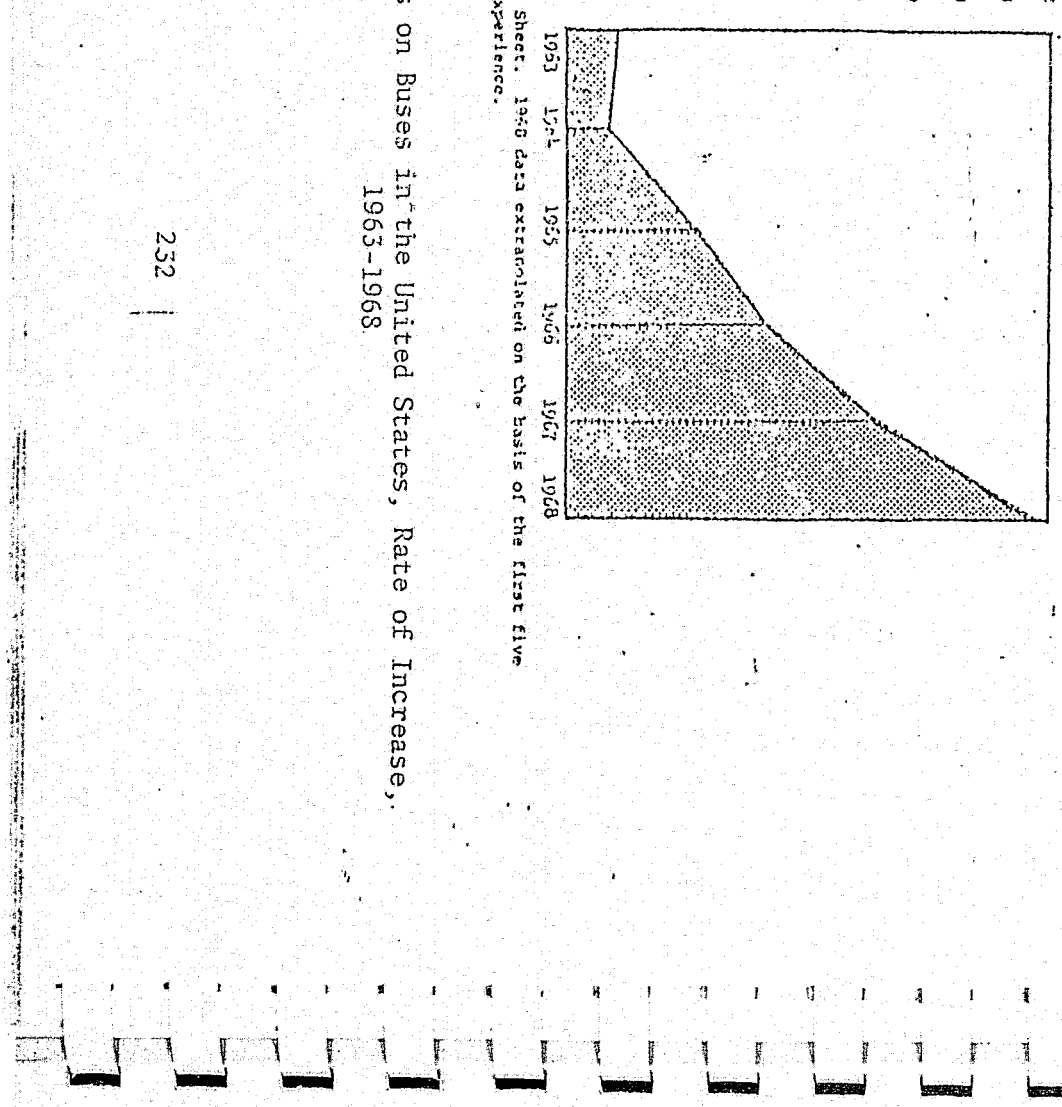
dalism suffered concurrently with the recent escalation of more serious crime has given transit management cause for grave concern; not only in terms of direct dollar loss but also in terms of loss of revenue passengers.

The VAPS researchers found that direct dollar costs -- which amounted to, on the average, only 0.5 percent of operating costs for 1971 -- do not begin to portray the scope and severity of the transit vandalism problem. An article prepared by Lyndall for Fleet Owner[5] concurs with the VAPS assessment of the relative weights of types of damage as measured by percent of total vandalism costs. Window breakage constitutes the largest expense (40 to 65 percent of total costs), followed by damage to seats (20 to 40 percent) and graffitti (up to 10 percent) for both bus and rail.

Some systems, such as the New York City Transit Authority (NYCTA), include in vandalism cost calculations not only standard material and labor costs but also estimated revenue losses, allowance for driver time in preparing accident reports, wages to drivers while out of service, overhead costs, and payment to injured employees. Additional indirect costs may accrue through loss of revenue passengers, due to the demoralizing atmosphere created by destructive acts or as a result of legal fees and claims suits arising from the incidence of vandal-related injuries. The vandalism problem for buses appears greatest in large cities, although the VAPS report found no functional relationship between vandalism and vehicle miles, revenue passengers, vehicle hours, or number of vehicles operated.

2. Urban Mass Transit -- Local Bus. The authors of the 1970 Alameda Contra-Costa Transit study[4] (hereafter referred to as the A-C Transit study) present a general history of bus crime problems. The city bus, they maintain, did not become a threatening environment in the opinion of the public until the late 1960's. They attribute this escalation of fear to one phenomenon above all: A dramatic upsurge during these years of the popularity of bus drivers as targets for violent robberies and assaults. Figures 8-1 and 8-2 portray the rate of increase for these crimes on a nationwide basis during the years 1963 through 1968. By early 1968, many drivers feared to operate their buses and several special security arrangements had gone into effect, among them police escorts, 2-way radios, alarms, and, in some cases, the bearing of arms by drivers themselves.

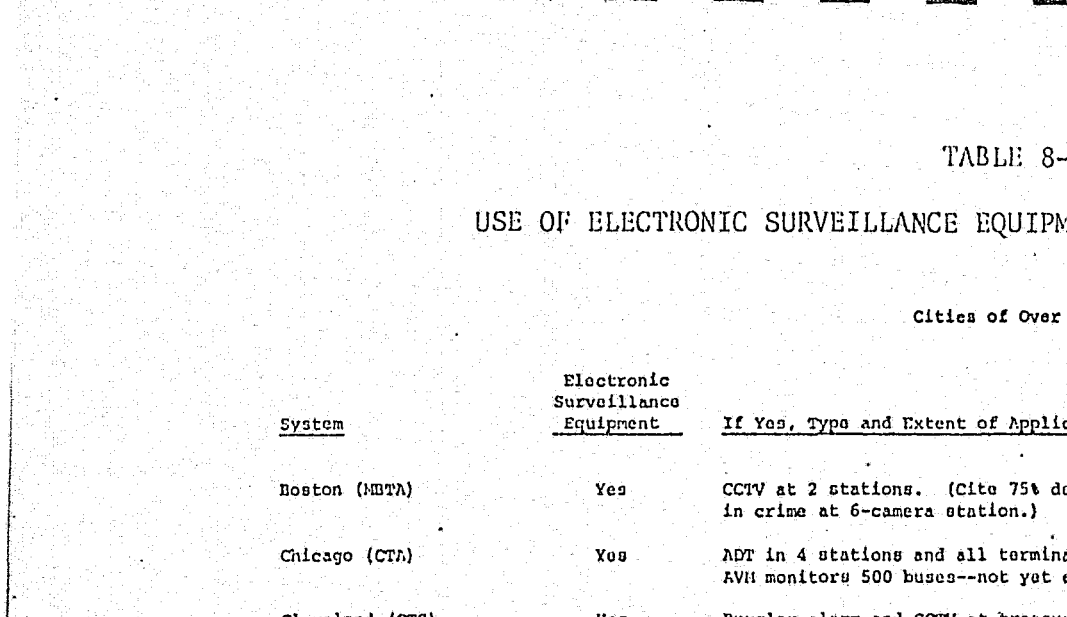
A turning point was reached in May 1968, when a Washington, DC, driver was murdered in a robbery attempt. The degree of driver outrage that followed in the wake of this incident caused a new type of security measure to be undertaken. Responding to pressure by union drivers, the Washington, DC, system became the first to adopt an exact fare plan on an experimental basis, followed shortly by companies in several other cities. By the end of 1969, the majority of systems around the country had instituted such plans. Tables 8-5 and 8-6, indicate the existence and date of initiation of exact fare for bus systems in large and medium-sized U.S. and Canadian cities. In cities of 250,000 to 1 million (in those cases where information was obtained), only one city did *not* report use of exact



Source: ATA Data Sheet. Figures for 1968 are extrapolated on the basis of the first five months and do NOT account for the effects of reduced fare.
* First ready-fare system goes into effect.

Secondary Source: A-C Transit Study, Vol. 2.

Figure 8-1. Bus Robbery in the United States, Rate of Increase, 1963-1968



Source: ATA Data Sheet. 1968 data extrapolated on the basis of the first five months experience.

Figure 8-2. Assaults on Buses in the United States, Rate of Increase, 1963-1968

TABLE 8-5

USE OF ELECTRONIC SURVEILLANCE EQUIPMENT, ON-BUS ALARMS, AND EXACT FARE

Cities of Over 1 Million

System	Electronic Surveillance Equipment	If Yes, Type and Extent of Application	On-bus "Alarm"	If Yes, Type and Extent of Application	Exact Fare on Buses	If Yes, Date Initiated
Boston (MBTA)	Yes	CCTV at 2 stations. (Cite 75% decrease in crime at 6-camera station.)	Yes	Plan for 2-way radios in future.	Yes	N.A.
Chicago (CTA)	Yes	ADT in 4 stations and all terminals. AVM monitors 500 buses--not yet evaluated.	No		Yes	11/69
Cleveland (CTS)	Yes	Burglar alarm and CCTV at treasury.	Yes	Radios on buses. 4-way flashers to alert police --ineffective.	Yes	11/68
Detroit	N.A.		No		N.A.	
Los Angeles (SCRTD)	Yes	Silent and burglar alarms at stations.	Yes	2-way radios and silent alarms on buses.	Yes	11/68
Montreal (MUCTC)	Yes	Automatic fare equipment.	No		N.A.	
New York (NYCTA)	Yes	CCTV. R-44 car and R-10 (1st modern car). Trouble-shooting bus.	N.A.		Yes	9/69
New York (PATH)	N.A.		N.A.		N.A.	
Philadelphia (PATCO)	Yes	Central monitoring tower. CCTV in every station and on some platforms. Automated ticket system.				
Philadelphia (SEPTA)	No	(Discussed, but stations not set up for electronic surveillance)	N.A.		Yes	9/68
Toronto	N.A.		N.A.		N.A.	

Source: American Transit Association, Questionnaire implemented 1971-72, for Vandalism and Passenger Security study.

TABLE 8-6

USE OF ELECTRONIC SURVEILLANCE EQUIPMENT, ON-BUS ALARMS, AND EXACT FARE

Cities of 250,000 to 1 Million -- All Bus Systems

System	Electronic Surveillance Equipment	If Yes, Type and Extent of Application	On-bus "Alarm"	If Yes, Type and Extent of Application	Exact Fare on Buses	If Yes, Date Initiated
Oakland (A-C Transit)	Yes	600 out of 721 buses have radios.	Yes	4-way flashers	Yes	7/68
Albany	No		No		Yes	1/70
Atlanta	No		No		Yes	12/68
Baltimore	No	(Plan to radio-equip all buses)	Yes	4-way flashers	Yes	6/68
Columbus	N.A.		No		N.A.	
Denver	No		No		Yes	4/71
Fort Worth	No	(2-way radios to be installed in 1973)	No		N.A.	
Indianapolis	No		Yes	4-way flashers--found ineffective	Yes	11/68
Milwaukee	No		Yes	4-way flashers	Yes	1968
New Orleans	No		Yes	4-way flashers	N.A.	
Ottawa	No		No		N.A.	
Portland	No		No		Yes	12/70
St. Louis	Yes	2-way radios	Yes	Flashers	N.A.	
San Antonio	No		Yes	4-way flashers	N.A.	
San Diego	Yes	Radios installed, 1972	Yes	Silent alarms installed, 1972	Yes	4/69
Seattle (STS)	Yes	Radios on order for entire fleet	No		Yes	1969
Seattle (MTC)	No		No		Yes (Commutation tickets)	N.A.
Winnepeg	Yes	CCTV at storage area only	No		No	

Source: American Transit Association, Questionnaire, implemented 1971-72, for Vandalism and Passenger Security study.

fare on buses.

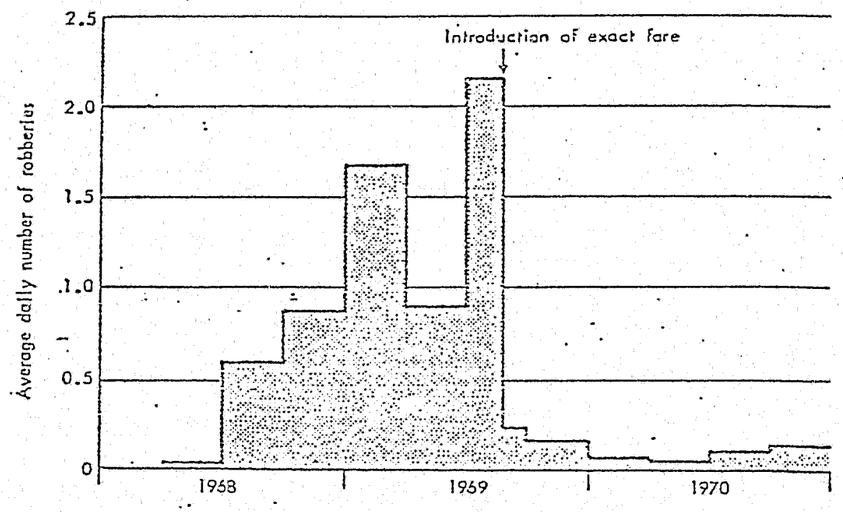
The success of exact fare, immediately and throughout trial periods, was dramatically demonstrated by the virtual elimination of bus driver robberies. The A-C Transit study showed that, for periods following initiation ranging from 4 to 9 months, 15 cities reported monthly robbery rates were 98 percent lower than for periods of 1 to 6 months before the policy took effect. Figure 8-3, representing results in New York City, presents a typically convincing picture.

It was postulated that exact fare would significantly reduce *public* fear as well by reinstating an atmosphere of security aboard vehicles. Indeed, the final report of the Washington demonstration project[6] assumed that such reassurance on the part of the public was the basis for the high degree of passenger acceptance and cooperation with which the plan was met.

a. General crime problem. On the basis of available information, the following generalizations can be made with regard to the severity and patterns of *total* bus crime.

The Carnegie-Mellon University study in Chicago found a low risk of crime aboard buses, only 0.7 serious crimes per 1 million riders. The VAPS study concluded that one cannot assume that the largest cities or systems will have the largest *total* crime problems. However, the data show that in the smaller cities (under 250,000) incidents and rates for *violent* crimes, by whatever measure, are nearly uniformly low or even negligible. The more serious crimes, in any case, are more prevalent in larger cities, although the rates for bus systems, even in these cities, may be low relative to rail or overall city rates.

While the Chicago patrons rated the bus as the safer mode over rail (by 70 percent of the respondents), 63 percent declared there were times



Source: NYCPD Planning Division.

Secondary Source: NYC Subway Report.

Figure 8-3. Average Daily Number of Reported Bus Robberies in New York City, 1968-1970

when they would not ride the bus (see Table 8-7).

As is confirmed by Figure 8-4, such fears correspond with the reality of the crime situation: Risk of bus-related crime is highest at these hours. Figure 8-5 shows that the risk was found to be higher on weekends than during the week.

b. Robbery: operator. It appears that the exact fare strategy has continued to be influential in determining the severity and pattern of this crime.

Tables 8-8 and 8-9 are based on analysis of the VAPS questionnaire to summarize the 1971 data for bus systems in cities over 1 million population, and in cities of 250,000 to 1 million. Given several limitations, such as inability in some instances to separate bus data from rail or driver incidents from passenger, only a few tentative observations are possible.

For cities over 1 million, only five of the nine city systems operating buses break down victimization of passenger/operator for some types of crimes. Although the cities vary, a total of robbery incidents produces an approximately 2-to-1 ratio (passenger-to-operator), a total of aggravated assault incidents produces an approximate 1-to-1 ratio, and a total of all violent crime shows a 3-to-1 distribution.

Cities of 250,000 to 1 million, 14 of which provided data, experience a smaller number of actual incidents, and their passenger-to-operator ratios show wide variation from system to system. Robbery, aggravated assault, and total violent crime seem to be fairly evenly distributed

TABLE 8-7

TIMES OF DAY WHEN RIDERS FEAR TO RIDE

Times of Day	Fear of Riders by Percentage		
	Do Not Fear	Do Fear	Total N
Sometimes	37	63	1027
6 a.m. - 9 a.m.	95	5	640
9 a.m. - noon	98	2	640
noon - 3 p.m.	98	2	639
3 p.m. - 6 p.m.	94	6	636
6 p.m. - 9 p.m.	50	50	643
9 p.m. - midnight	11	89	643
midnight - 6 a.m.	2	98	643

Source: Perception of Crime in Mass Transportation

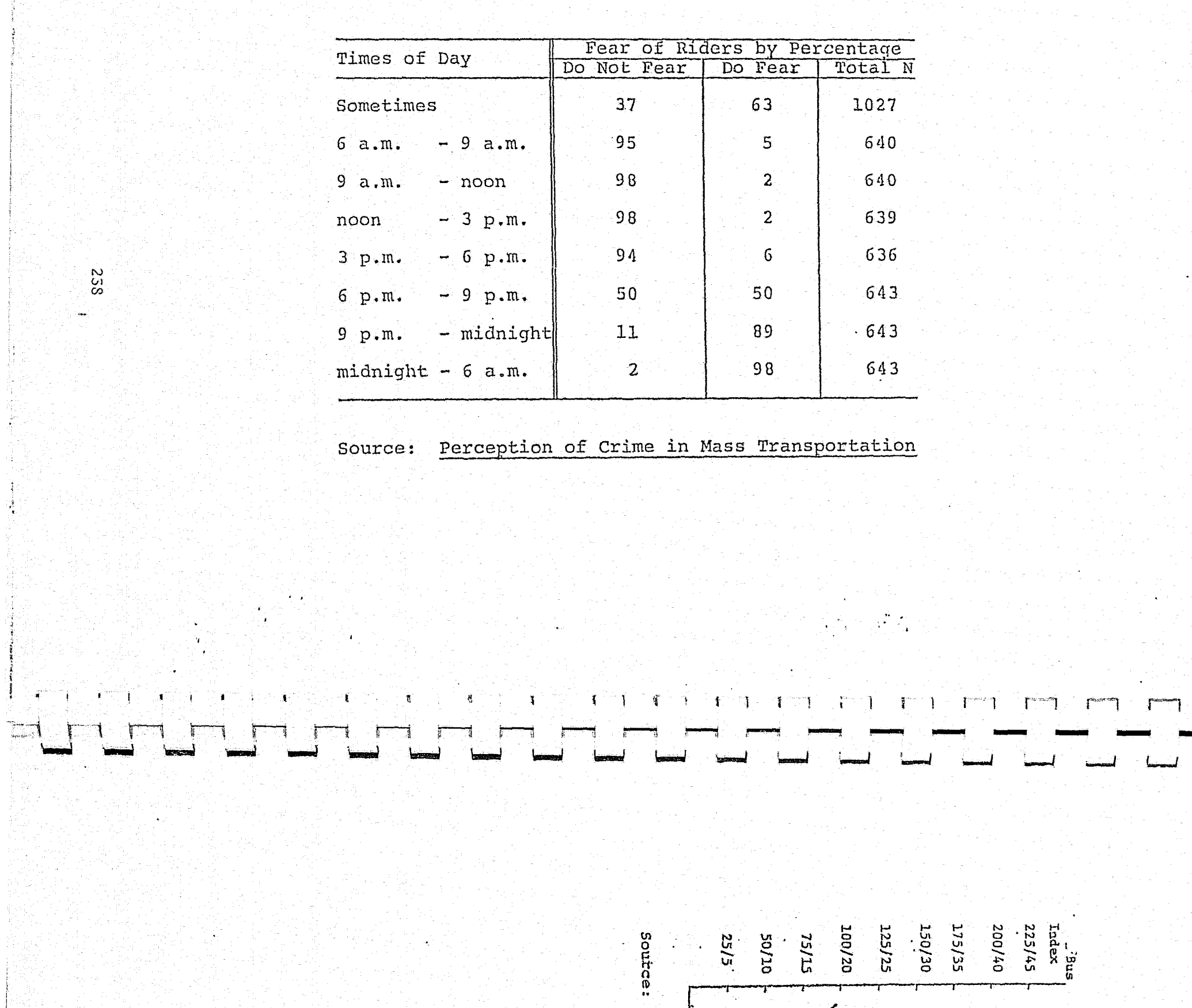


Figure 8-4. Bus Crime Risk by Hour of Day

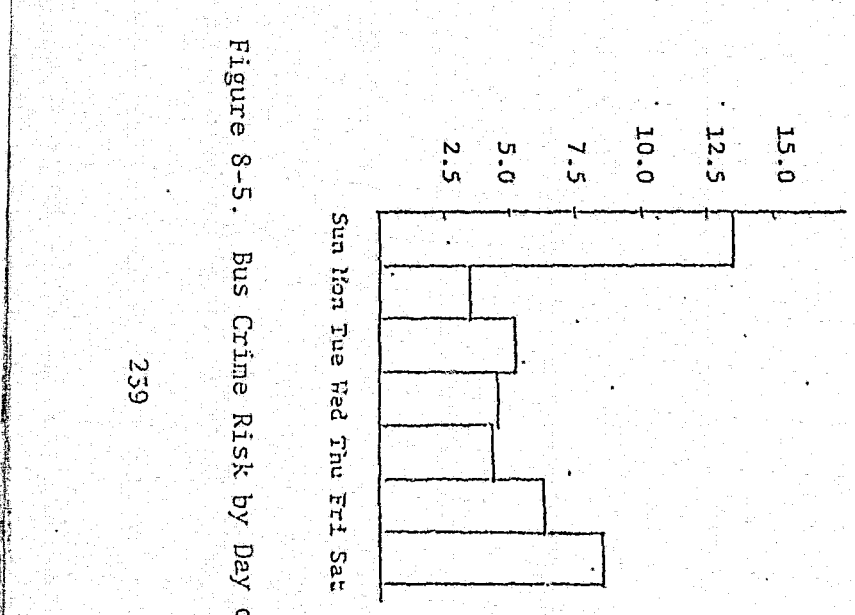


Figure 8-5. Bus Crime Risk by Day of Week

TABLE 8-8

INCIDENTS OF VIOLENT AND OTHER CRIMES IN BUS TRANSIT SYSTEMS OF CITIES OVER 1,000,000

(Bracketed figures indicate [% passenger/% operator] victimization)

System	Violent Crime: Criminal Homicide	Violent Crime: Forcible Rape	Violent Crime: Robbery (Armed or Strong Armed)	Violent Crime: Aggravated Assault	Violent Crime: Total Violent Crime	Larceny (theft, pickpocket, pursesnatch)	Other Assaults
Boston (MBTA)	—	—	—	—	—	—	—
Chicago	1	0	61 [79/21]	110 [47/53]	181 [55/45]	397	100 [50/50]
Cleveland (CTS)	—	—	10	1	11	18	5
Detroit	—	—	—	—	—	—	—
Los Angeles (SCRTD)	0	0	15 [53/47]	72 [33/67]	87 [37/63]	181 [16/84]	—
Montreal (MTCTC)	—	—	1	4	5	21	10
New York (NYCTA)	1 [100/0]	0	71 [85/15]	127 [40/60]	199 [56/44]	180	386
New York (PATH) (no bus - rail only)	—	—	—	—	—	—	—
Philadelphia (PATCO) (no bus - rail only)	—	—	—	—	—	—	—
Philadelphia (SEPTA)	1 [100/0]	0	2 [0/100]	2 [0/100]	5 [20/80]	12 [0/100]	17 [0/100]
Toronto (TTC)	—	—	—	—	—	—	—

(e) = Estimate

Source: American Transit Association, Questionnaire implemented 1971-72, for Vandalism and Passenger Security study.

TABLE 8-8

(Continued)

System	Other Crime: Arson	Other Crime: Weapons - Possession (incl. shooting at buses)	Other Crime: Sex Offenses (except rape)	Other Crime: Narcotics	Other Crime: Disorderly Conduct (incl. drunkenness)	Other Crime: Other Offenses (incl. fare evasion, bomb threats, trespassing)	Total Other Bus Crime	TOTAL All Bus Crime
Boston (MBTA)	—	—	—	—	—	—	—	—
Chicago	—	21	6	1	294	—	819	1,000
Cleveland (CTS)	—	3	—	—	—	—	26	37
Detroit	—	—	—	—	—	—	—	—
Los Angeles (SCRTD)	3	4	7	13	895(e)	—	1,108	1,195
Montreal (MTCTC)	0	5	4	6	19	—	65	70
New York (NYCTA)	5	6	—	—	5,226	—	5,803	6,002
New York (PATH) (no bus - rail only)	—	—	—	—	—	—	—	—
Philadelphia (PATCO) (no bus - rail only)	—	—	—	—	—	—	—	—
Philadelphia (SEPTA)	2	—	—	—	38	—	69	74
Toronto (TTC)	—	—	—	—	—	—	—	—

TABLE 8-9

INCIDENTS OF VIOLENT AND OTHER CRIMES IN BUS TRANSIT SYSTEMS OF CITIES OF 250,000 TO 1,000,000

(Bracketed figures indicate [% passenger/% operator] victimization)

System	Violent Crime: Criminal Homicide	Forcible Rape	Robbery (Armed or Strong Armed)	Aggravated Assault	Total Violent Crime	Larceny (theft, pickpocket pursesnatch)	Other Assaults
Oakland (AC Transit)	0	1 [100/0]	3 [100/0]	2 [0/100]	6 [67/33]	46	48
Albany	0	—	0	3 [0/100]	3 [0/100]	—	—
Atlanta	0	0	0	6 [0/100]	6 [0/100]	3	6
Baltimore	0	0	14 [29/71]	9 [73/22]	23 [48/52]	61 [30/70]	87 [74/26]
Columbus	0	0	3 [0/100]	0	3 [0/100]	1 [0/100]	—
Washington, D.C. (Met.)	—	—	—	—	—	—	—
Denver	0	0	0	0	0	9 [36/44]	7 [0/100]
Fort Worth	0	0	4 [0/100]	1 [0/100]	5 [0/100]	0	0
Indianapolis	0	0	0	21 [38/62]	21 [38/62]	10 [80/20]	30 [33/67]
Milwaukee	—	—	—	73 [36/64]	73 [36/64]	68 [38/62]	57 [74/26]
New Orleans	1 [100/0]	0	4 [75/25]	24 [92/8]	28 [89/11]	90 [100/0]	42 [95/5]
Ottawa	0	0	3 [0/100]	1 [0/100]	4 [0/100]	0	0
Portland	0	0	4 [100/0]	9 [73/22]	13 [65/15]	61	87
St. Louis	0	0	4 [100/0]	6 [33/67]	10 [60/40]	34 [97/3]	21 [32/48]
San Antonio	0	0	0	0	0	0	0
San Diego	0	0	0	2 [0/100]	2 [0/100]	0	—
Seattle (STS)	—	—	—	22 [36/64]	22 [36/64]	15 [47/53]	25 [32/68]
Seattle (MTC)	0	0	0	0	0	0	0
Winnipeg	—	—	—	1 [100/0]	1 [100/0]	—	1

(a) = Estimate

Source: American Transit Association, Questionnaire implemented 1971-72, for Vandalism and Passenger Security study.

TABLE 8-9

(Continued)

System	Other Crime: Arson	Weapons - Possession (incl. shooting at buses)	Sex Offenses (except rape)	Narcotics	Disorderly Conduct (incl. drunkenness)	Other Offenses (incl. fare evasion, bomb threats, trespassing)	Total Other Crime	TOTAL Transit Crime
Oakland (AC Transit)	8	31	0	4	129	—	266	272
Albany	—	6	—	—	13	—	19	22
Atlanta	1	11	1	0	26	—	41	47
Baltimore	2	10	—	—	700	—	860	883
Columbus	0	—	1	0	14	—	16	19
Washington, D.C. (Met.)	—	—	—	—	—	—	—	—
Denver	0	1	0	0	37	—	54	54
Fort Worth	0	2	0	0	35	—	38	43
Indianapolis	16	5	0	0	188	—	249	270
Milwaukee	4	53	1	—	86	—	269	342
New Orleans	2	14	6	—	95	—	249	277
Ottawa	0	6	0	0	6	—	12	16
Portland	2	10	—	—	—	—	160	173
St. Louis	13	7	0	0	78	—	153	163
San Antonio	1	2(a)	0	0	40(a)	—	43(a)	43(a)
San Diego	0	4	0	0	50	—	54	56
Seattle (STS)	8	14	—	—	48	—	110	132
Seattle (MTC)	0	0	—	1	6	4	11	11
Winnipeg	—	—	—	—	3	—	4	5

between passengers and operators. Total larceny incidents for nine cities, however, reveal a 4-to-3 ratio and, for simple assaults, a 2-to-1 ratio.

The reader is cautioned to view these data with two considerations in mind:

- These data are likely to be weighted towards operator victimization because operator incidents tend to be reported more consistently than passenger incidents.
- Some of the robberies appearing on the ATA data sheets as "operator" incidents may in fact be cases of "other employees" incidents involving the robbery of employees collecting cash from fare boxes.

There is evidence from the A-C Transit study that exact fare systems might serve to reduce the *gravity* of bus robbery incidents. Oakland's initial experience was that robberies occurred less often during the nighttime hours, that weapons were used only about half so often, and that robbers were more often under age 21.

c. Robbery: passengers. The possibility that exact fare might displace robberies from bus drivers to passengers must be considered in assessing the severity of passenger robbery.

The A-C Transit study predicted that the displacement to passengers would not result, on the basis of: (a) Evidence from several cities for the initial months following enactment of the plans; and (b) the fact

that, when passengers were aboard the bus during a driver robbery, they were almost never robbed.

However, there does exist more recent evidence to the contrary. As stated in the operator robbery discussion above, on the basis of total 1971 reported robbery incidents for bus systems providing information to the VAPS survey, passengers appear to have been victims about twice as frequently as operators. Chicago and New York report very high percentages of passenger victimization.

The Chicago Transit study may provide the most recent and reliable information. For the 18-month study period, passengers were the victims of 80 percent of bus robberies. Table 8-10 shows that robberies account for about 40 percent of the total serious bus crimes and that such robberies provided grave threats; few were merely attempts; and weapons were used in a majority of crimes, although most victims escaped without injury. In addition, robberies were carried through to completion despite the fact that witnesses were reported in over 50 percent of the cases.

There is some evidence that passengers may be more often assailed by groups of offenders than drivers. While the A-C Transit study found bus driver robbers most often worked alone, the Chicago Transit study found robberies of passengers were likely to be carried out by groups of two or three.

In terms of temporal distribution, the Chicago Transit study found that incident occurrence exhibited two peaks: One during nighttime hours

TABLE 8-10

COMPOSITION OF MASS TRANSIT CRIME

Crime Type	R.T. No.	R.T. % of Type	Bus No.	Bus % of Type	Total No.	Total % of Type
Robbery:						
Armed	523	44	105	48	629	44
Attempted Armed	26	2	4	2	30	2
Strong-Armed	620	52	108	49	728	51
Attempted Strong-Armed	27	2	3	1	30	2
(Coding errors)[1]	(8)	-	(7)	-	(15)	-
	1,204	100	228	100	1,432	99
Battery:						
Physical contact - insulting or provoking nature	97	29	58	20	155	25
Inflicted minor injury - no weapon used	183	55	185	62	368	58
Inflicted serious injury no weapon used	11	3	8	3	19	3
Injured (or attempted) with dangerous object	18	5	23	8	41	7
Stabbed or cut (or attempted	21	6	16	5	37	6
Shot (or attempted)	4	1	5	2	9	1
(Coding error)	-	-	1	-	1	-
	334	99	296	100	630	100
Assault:						
Menaced victim with weapon	21	43	11	34	32	40
Menaced victim without weapon	28	57	21	66	49	60
	49	100	32	100	81	100
Crime Against Person:						
Murder	7	6	2	20	9	7
Rape	12	11	8	80	20	17
Indecency, etc.	85	77	0	-	85	71
Other[2]	6	5	0	-	6	5
	110	99	10	100	120	100
Totals, all crimes	1,697		566		2,263	
Unfounded cases[3]	123		2		125	
Cases analyzed	1,574		564		2,138	

Source: Improvement of Mass Transit Security in Chicago.

(as also found by the A-C Transit study); and the other from 2 p.m. to 3 p.m., perhaps coinciding with groups of young offenders riding the bus after school.

d. Assault: operator. A wide range of evidence exists concerning the risk of assault experienced by bus drivers. The A-C Transit study survey of 594 drivers in four U.S. cities has determined that only 15 percent of all drivers have ever been injured by assault, although 39 percent of all drivers were threatened by assault during the 1-year period under consideration. A further A-C Transit survey of transit management officials in 15 systems concluded that, following the institution of exact fare, incidence of driver injury decreased. The Chicago Transit study measured risk of operator assault only in relation to passenger assault, and determined that drivers accounted for only 20 percent of total bus assaults.

The A-C Transit report concluded that the size and complexity of the assault problem were greater than had been previously theorized. Survey responses revealed that, despite significant reduction of robbery and fear of robbery, fear of assault remained high with exact fare programs in effect. Table 8-11 summarizes evidence of this residual fear.

The A-C Transit study found that driver assault may present a more diversified crime pattern than driver robbery in terms of both offender characteristics and the crime distribution. While threats are typically perpetrated by teenagers, often in groups and of a different race than the driver, assailants may range from the violent robber to the irate

TABLE 8-11

BUS DRIVERS' PERCEPTIONS OF RISK OF ASSAULT

Perception	Percent Drivers in Agreement
Spend at least half of time in high risk areas	34
Spend some time in high risk areas	70
Feel some danger of assault while driving	74
Feel current bus crime level higher than expected from past experience	50

Source: A-C Transit Report

motorist. The A-C Transit study also found that the geographical areas in which assaults occurred were more dispersed than the high robbery areas.

e. Assault: passengers. Passengers are the victims of nearly 50 percent of the bus assault incidents according to the ATA data, and of 80 percent of these incidents according to the Chicago studies. Assaults were the most numerous of the serious bus crimes studied by the Chicago Transit study team. Most incidents involved either the infliction of minor injury without the use of a weapon or physical contact of an insulting or provoking nature. Over 50 percent of the victims were students, and 65 percent of the offenders were in their teens.

f. Other crimes against persons. The Chicago study found the occurrence of such crimes as murder and rape to be extremely low for the bus system. The VAPS bus system data corroborate this finding. Public indecency and similar types of offensive, but relatively non-fear-producing, incidents constituted the major portion of the "crimes against persons" data compiled in Chicago.

g. Less serious crimes. The Chicago study did not consider the less serious crimes of larceny (including pickpocket and pursesnatch). The A-C Transit report presented no data on the incidence of such crimes either, although the authors speculated that these incidents were occurring frequently aboard buses.

The ATA data for bus system larceny suggest that discrepancies may result from varied reporting and recording practices from system to system for this crime. Because so few systems provide victimization

information, it is difficult to determine whether passengers or operators are more frequently victimized. ATA interviews with transit officials hinted that the actual incidence of these crimes is extremely high, both in terms of petty operator-directed thefts (thefts of changers, tokens, or scrip) and of passenger pickpocket and pursesnatch.

While not inherently fear-producing as are the crimes of robbery and assault, numerous and continual incidents of larceny can have a demoralizing effect on drivers and patrons alike.

h. Intervention strategies against bus crime. As noted, exact fare plans are virtually universal in cities over 250,000. Many systems report no use of electronic surveillance or alarm devices. Of the systems in 12 cities under 250,000, half used exact fare systems and none reported use of electronic surveillance or alarm devices. The A-C Transit survey officials, in fact, concluded that all such devices were at best only marginally useful.

Special forces for bus systems are rare; such rarity is even more pronounced in smaller cities. Varying opinions were gathered from the different systems on the need for, and effectiveness of, city police efforts. On this point, the A-C Transit report suggested that, because the average bus crime takes place over a period of 3 minutes or less, even 100-percent police efficiency would result in only a marginal impact.

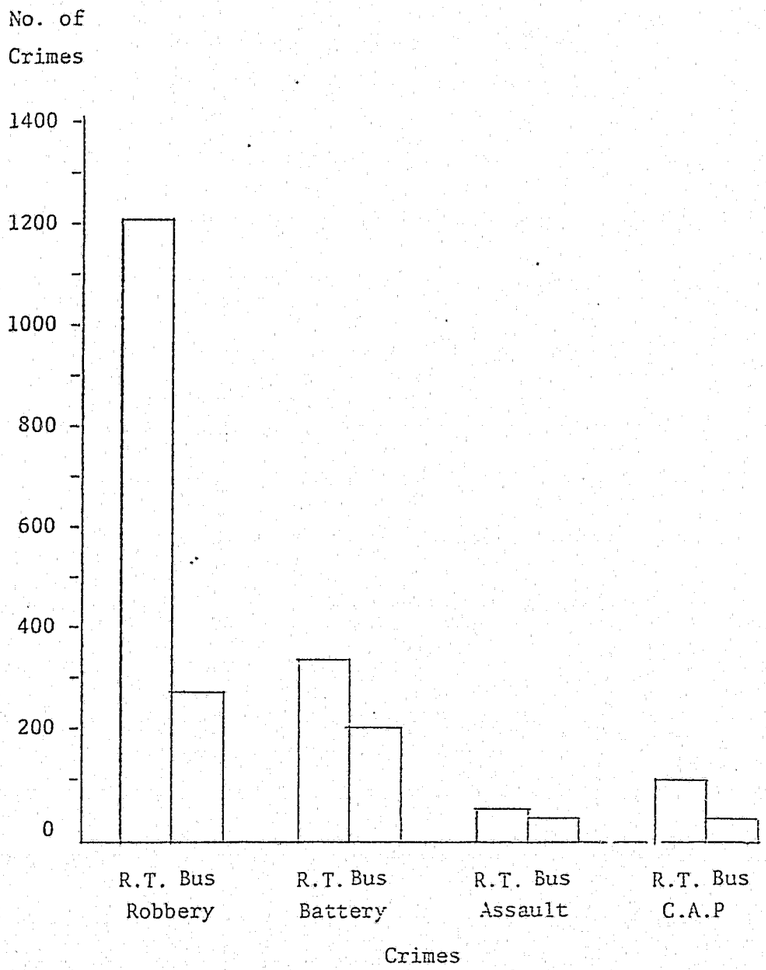
The A-C Transit study emphasized operational "conflict-management" techniques. As found by ATA surveys, many bus system officials do stress the importance of school liaison and community relations programs in their efforts against crime.

3. Urban Mass Transit -- Local Rail. Rail systems appear to bear a disproportionate amount of the mass transit crime problem. Figure 8-6 presents the incidence of the various crimes studies in Chicago (robbery, battery, assault, and total crimes against person) on a comparative basis, mode to mode.

The rail system's user population is significantly smaller than the bus population, and it is easy to dismiss the magnitude of the rail system crime problem. However, roughly one-third of all annual public transit trips are made by rail and the remaining two-thirds by bus.

The rail system provides both a more concentrated and a more complex array of potential targets for crime. While local buses on their routes traverse the streets of the city, the vehicles of elevated and ground level rail systems (and particularly those of subway systems) operate strictly within their own well-defined and confined environments.

Somewhat similarly, the roles of members of the rail transit system may be seen as being both more well-defined and more numerous. The A-C Transit study discussed at some length the "humanizing presence" of the bus driver and his extreme vulnerability. The bus driver is more exposed to crime than any passenger because he is more singly prominent in terms of his physical position ahd his combined roles of operator, payment collector, and keeper of order. In the rail system, however, employees are in general less exposed physically, and roles are usually broken down considerably -- ticket or toll booth agent, conductor, trainman,



Source: Improvement of Mass Transit Security in Chicago.

Figure 8-6. Incidence of Various Crimes -- Local Rail vs. Local Bus

and maintenance and repairman. Thus, rail transit employees present a more dispersed patterning for potential victimization.

a. General crime problem. While limited, those sources of local rail crime data that exist present a relatively uniform picture of the crime problem. The CPTED Research Support team sought to wring from the VAPS raw data those incidents incurred by rail systems which appeared as part of the "total transit" tables for cities over 1 million. Unfortunately, while nine of these cities have rail systems, data for only six systems could be obtained and those data described only some crimes. Some systems could not provide separate figures for rail; from others, data sufficient for tabulation could not be obtained. Such data as could be compiled by the Research Support team are presented in Table 8-12. On the basis of three cities' victimization breakdowns, the following approximate passenger-to-operator ratios emerged: Robbery, 3 to 1, aggravated assault, 2 to 1; and total violent crime, 2 to 1.

The most abundant source of rail data was the Chicago Transit studies. A study of subway crime in New York[7] constituted the sole supplementary source.

The Chicago Transit study's analysis of police records on total serious rail crimes provides the only available data from which a general picture of the crime pattern can be formed. As indicated in Table 8-13, this study found that rail crime eshibited high degrees of concentration in terms of temporal, geographical, and environmental distribution.

TABLE 8-12

INCIDENTS OF VIOLENT AND OTHER CRIMES IN RAIL TRANSIT SYSTEMS OF CITIES OVER 1,000,000

(Bracketed figures indicate [% passenger/% operator] victimization

System	Violent Crime: Homicide	Forcible Rape	Robbery (Armed or Strong Armed)	Aggravated Assault	Total Violent Crime	Larceny (theft, pickpocket, pursesnatch)	Other Assaults
Boston (MBTA)	—	—	—	—	—	—	—
Chicago (CTA)	0	5	386 [62/38]	141 [81/19]	532 [68/32]	530	85 [82/18]
Cleveland (CTS) (no rail - bus only)	—	—	—	—	—	—	—
Detroit	—	—	—	—	—	—	—
Los Angeles (SCRTD) (no rail - bus only)	—	—	—	—	—	—	—
Montreal (MCTC)	0	0	7	2	9	17	24
New York (NYCTA)	5 [100/0]	0	23 [70/30]	78 [33/67]	106 [44/56]	2,403 [71/29]	1,016
New York (PATH)	—	0	22	0	22	12	9
Philadelphia (PATCO)	0	—	—	1	1	0	0
Philadelphia (SEPTA)	0	4 [100/0]	57 [100/0]	36 [86/14]	97 [95/5]	48 [100/0]	63 [60/40]
Toronto (TTC)	—	—	—	—	—	—	—

Source: American Transit Association, Questionnaire implemented 1971-72, for Vandalism and Passenger Security study.

TABLE 8-12

(Continued)

System	Other Crime: Arson	Weapons - Possession (incl. shooting at buses)	Sex Offenses (except rape)	Narcotics	Disorderly Conduct (incl. drunkenness)	Other Offenses (incl. fare evasion, bomb threats, trespassing)	Total Other Rail Crime	TOTAL All Rail Crime
Boston (MBTA)	—	—	—	—	—	—	—	—
Chicago (CTA)	—	61	71	20	825	—	1,592	2,124
Cleveland (CTS) (no rail - bus only)	—	—	—	—	—	—	—	—
Detroit	—	—	—	—	—	—	—	—
Los Angeles (SCRTD) (no rail - bus only)	—	—	—	—	—	—	—	—
Montreal (MCTC)	—	10	16	9	37	—	113	122
New York (NYCTA)	—	0	0	0	1,394	—	4,813	4,919
New York (PATH)	0	4	8	2	32	—	68	90
Philadelphia (PATCO)	—	0	30	1	—	4	35	36
Philadelphia (SEPTA)	7	18	4	—	116	—	256	353
Toronto (TTC)	—	—	—	—	—	—	—	—

TABLE 8-13

LOCAL RAIL CRIME PATTERN CONCENTRATION -- TOTAL SERIOUS CRIME

PATTERN INDICATOR	MEASURE OF RISK	CRIME PATTERN DISTRIBUTION
TEMPORAL	By Hour	Highest risk between 1 a.m.-4 a.m.; 60% of total crime between 8 p.m.-5 a.m.; 70% of users fear to ride between 9 p.m.-6 p.m.
	By Day	Highest risk weekend days; risk on Saturday seven-times that on Wednesday
GEOGRAPHIC	By Route	55% of crime on one route (with 1/3 total stations)
	By Neighborhood	90% of high risk stations in neighborhoods with highest or 2nd highest robbery and unemployment
ENVIRONMENTAL	By General Locale	70% of crime in station (vs. train)
	By Specific Locale	63% of station crime on platform, 17% at ticket booth

Source: Chicago Transit Study

Table 8-14 provides some general description of typical incident locations.

It was noteworthy that offenders demonstrated certain preferred methods of escape. By far the greatest number of station and station-platform offenders made an immediate exit to the street by way of the stairs. Very few boarded trains or hopped barriers. Most on-train offenders exited at the next regular stop; very few pulled the emergency stop signal or moved to another car. Further details on offender escapes appear in Table 8-15.

b. Robbery. On the basis of available data, it appears that robbery dominates the local rail crime configuration, both in terms of severity and degree of concentration.

The Chicago Transit study of both rail and bus found that robbery evidenced more concentrated temporal, geographical, environmental, and victimization distributions than any other serious transit crime. The NYC Subway study largely confirms this pattern. Specific findings of both studies are presented in Table 8-16.

The NYC Subway study discovered that passenger robbers differ from toll booth robbers in several characteristics and postulated that few offenders engaged in both types of crimes. The Chicago Transit study data do not provide robber characteristics by type of victim. The following characteristics provide contrasting offender profiles from the two studies:

- Age -- In New York, passenger robbers tended to be very young (most under 17 years, and some under 10), and the average age of robbers as reported by victims was 17.3. Toll booth robbers, however, averaged 22 years. In

TABLE 8-14

VICTIM LOCATION DURING RAPID TRANSIT CRIME

	Robbery		Battery		Assault		C.A.P.		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
STATION										
On Platform	478	61.2	129	77.3	14	58.3	32	58.2	653	63.4
On Stairs	107	13.7	25	14.9	2	8.3	3	5.5	137	13.3
Betw. Stairs and Entrance	19	2.4	6	3.7	-	-	3	5.5	28	2.7
In Bathroom	-	-	-	-	-	-	2	3.6	2	0.2
In Ticket Booth (Agent)	160	20.2	1	0.6	7	29.2	12	21.8	180	17.5
Washington/ Jackson Tunnels	4	0.5	5	3.0	-	-	-	-	9	0.9
Other	14	1.8	1	0.6	1	4.2	3	5.5	19	1.8
Totals	782		167		24		55		1028	
(Values not Reported)	(12)		(6)		(2)		(3)		(23)	
TRAIN										
Entering Train	1	0.3	-	-	-	-	-	-	1	0.2
Leaving Train	9	3.0	9	10.0	-	-	3	9.4	21	4.8
On Train-in Sta.	40	13.2	28	31.2	3	27.3	3	9.4	74	17.0
On Train-Betw. Stations	254	83.5	53	58.8	8	32.7	26	81.2	341	78.0
Totals	304		90		11		32		437	
(Values not Reported)	20		17		4		12		53	

Source: Improvement of Mass Transit Security in Chicago.

TABLE 8-15

RAPID TRANSIT OFFENDER ESCAPE ROUTE

	Robbery		Battery		Assault		C.A.P.		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Platform:										
Stairs into Station	15	3.9	4	10.8	-	-	1	5.9	20	4.5
Stairs onto Street	251	64.9	14	37.8	4	56.2	5	29.4	274	61.2
Hopping Fence	29	7.5	-	-	-	-	-	-	29	6.5
Getting onto Train	29	7.5	9	24.4	-	-	7	41.2	45	10.0
Running down Platform/ Tracks	29	7.5	5	13.5	2	28.6	2	11.7	38	8.5
Crossing Tracks	3	0.8	1	2.7	-	-	-	-	4	0.9
Other - Platform	31	5.4	4	10.8	1	14.2	2	11.7	38	8.5
Totals	387		37		7		17		448	
Station:										
Station Exit to Street	90	83.3	6	60.0	4	100	16	89.0	116	82.8
Stairs to Platform	9	8.3	1	10.0	-	-	-	-	10	7.2
Other	9	8.3	3	30.0	-	-	2	11.0	14	10.0
Totals	108		10		4		18		40	

	Robbery		Battery		Assault		C.A.P.		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Train:										
Emergency Stop	6	2.5	-	-	-	-	-	-	6	1.9
Off Train into Station	199	84.0	30	56.6	7	87.5	14	70.0	250	78.8
To Another Car	10	4.2	1	1.9	-	-	1	5.0	12	3.8
Other	22	9.3	22	41.5	1	12.5	5	25.0	50	15.7
Totals	237		53		8		20		318	
(Values Not Reported)	(472)		(234)		(30)		(55)		(791)	

Source: Improvement of Mass Transit Security in Chicago.

TABLE 8-16

ROBBERY IN LOCAL RAIL -- CRIME PATTERNS

PATTERN INDICATOR	MEASURE OF RISK	CRIME PATTERN DISTRIBUTION	
		Chicago	New York
TEMPORAL	By Hour	Highest 6 p.m.-Midnight	Highest at night[1]
	By Day	Highest weekends (50%)	
GEOGRAPHIC	By Route	50% on one line	Some routes higher than others
	By Neighborhood	High correspondence between rail robbery rate and surrounding neighborhood rate	High correspondence between rail robbery rate and surrounding neighborhood rate
ENVIRONMENTAL	By General Locale	75% in station (vs. on train)	69% in station (vs. on train)
	By Specific Locale	61% on platform	
VICTIMIZATION	By Victim Type	80% passengers (vs. employees)[2]	70% passengers (vs. employees)

[1]Despite the fact that--largely due to the NYCTA security practice, begun in 1965, of deploying a man in every station and on every train, 8 p.m. to 4 a.m.--the average number of reported nighttime robberies has been lowered significantly.

[2]In both systems employee victims were almost always toll booth agents--rarely concessionaires, trainmen, conductors or servicemen.

SOURCES: Chicago Transit Study
NYC Subway Study

Chicago, over half of the robbery offenders were under 21 years of age, and most were under 30.

- Number of Offenders -- New York passenger robberies were often perpetrated by groups of two or three; toll booth robbers more often worked alone. In Chicago, a substantial number of robberies were perpetrated by more than one offender.
- Use of Weapon -- In New York, very few passenger robbers (8 percent) were armed; however, all but 7 percent of the toll booth robbers carried handguns. About 50 percent of all robbery offenses in Chicago were armed.

c. Assault. Several contrasting elements exist between the assault problem and the robbery problem in the local rail mode. Approximately 20 percent of the serious rail transit crimes studied in Chicago were assaults; a very small percentage were attempted assaults. (On the basis of the scant information provided by VAPS survey, one can only conclude that, in general, assaults appear to occur less frequently than robberies.)

With respect to temporal, geographical, environmental, and victimization distributions, assaults in the local rail environment in Chicago displayed a somewhat more dispersed pattern than did robberies, as indicated in Table 8-17.

Most of the local rail assaults studied in Chicago involved either minor injury without the use of a weapon or physical contact of an

TABLE 8-17

ASSAULTS IN LOCAL RAIL MODE -- CRIME PATTERN AS COMPARED TO ROBBERIES

(Chicago Transit Study)

DISTRIBUTION	ASSAULT PATTERN (IN RELATION TO ROBBERY)	SPECIFIC STUDY FINDINGS: ASSAULT/ROBBERY
GEOGRAPHIC	Slightly more dispersed.	Assault: 50% on one line. Robbery: 55% on the same line but heavier concentration on certain stations.
ENVIRONMENTAL (Locale)	Slightly more even distribution, station/train (but again, highest occurrence on platform.	Assault: 62% in station. Robbery: 72% in station.
TEMPORAL	More evenly distributed across the week.	Assault: Slightly more Wednesday and Thursday than other days. Robbery: Heavily concentrated (50%) on weekends.
	Peak earlier in the day.	Assault: Peak between 4 p.m. and 10 p.m., particularly at rush hour. Robbery: Highest 8 p.m.-5a.m.
VICTIMIZATION	Less heavily passenger;* less heavily toll booth agents.	Assault: 32.7% employee; frequently other employees besides toll booth agents. Robbery: 18.4% employee; almost always toll booth agents.

*Data compiled by VAPS survey appears to corroborate this pattern. An approximate ratio of 3 to 1, passenger to operator, was found for robbery, victimization; for assault, the ratio was about 2 to 1, passenger to operator.

insulting or provoking nature. Several victim/offender and other characteristics appear to agree with this finding. Victims were largely lone white males, frequently (about 25 percent) students. Most offenders were young (under age 30) and black; 50 percent were lone individuals, but a substantial number of incidents (16 percent) were perpetrated by gangs of four or more. In addition, since assaults peaked at rush hour and since many took place during the boarding/exiting process, it was surmised that a significant number arose out of the stress of high-density, restricted-freedom-of-movement situations.

d. Other crimes against persons. The Chicago Transit study offers the only useful information available on these other crimes against persons. Although the study found a substantially higher number of these crimes in rail systems than in bus systems, the total incidence of these crimes is small in comparison to robberies and assaults. Furthermore, the majority of these incidents involved public indecency or the like rather than murders or rapes; only a few were serious crimes.

Most victims and most offenders were lone individuals. While robbery and assault victims tended to be white and male, victims of other crimes against person (which were largely incidents of public indecency and rape) were in 75 percent of the cases women, more frequently black.

e. Less serious crimes. Because the Chicago Transit study did not tabulate data for the lesser offenses, the only remaining source of data on the incidence of these crimes is the VAPS survey. The extremely

wide ranges among the numbers of incidents of larceny, other (i.e., lesser or attempted) assaults, and disorderly conduct provided by the various systems suggests the influence of highly different reporting practices rather than huge differences in actual crime problems.

One can only conclude, on the basis of the magnitude of the numbers provided by some systems, that these lesser crimes may occur with sufficient frequency to pose substantial problems for rail transit systems. Thus, it is possible that an atmosphere that can be perceived as threatening and can thus discourage ridership could be engendered in part by the pervasiveness of these lesser crimes.

f. Intervention strategies against rail crime. Table 8-5 summarized the ATA survey data on electronic surveillance and alarm equipment employed by cities with rail systems; closed-circuit television cameras were the most frequently employed equipment of this type. In the category of security personnel, routine patrol and stake-out tactics, together with use of specially trained dogs, were most frequently mentioned.

One recent work that addresses crim and harassment problems in general and their solution is, "A Methodology for Developing Security Design Criteria for Subways."[8] This document presents checklists for analyzing police data, subway stations, and trains in terms of physical and nonphysical factors conducive to crime and harassment incidents.

4. Secondary Targets. The secondary targets for possible CPTED consideration are private motor vehicles, public motor vehicles (i.e.,

taxicabs), parking facilities, service stations, and freight terminals. The following discussion considers severity of the crime problem, crime-related information, and potentiality as a CPTED target with respect to each of these environments.

a. Private motor vehicles. The overwhelming crime against private motor vehicles is auto theft. The UCR indicate that auto thefts make up 15 percent of the total Crime Index (i.e., Part I crimes) offense volume. The NCP surveys confirm that most (over 90 percent) actual auto thefts are reported to the police (probably for insurance purposes). Consequently, the UCR documentation of the auto theft problem is reliable.

Auto theft rates clearly indicate that this crime is primarily a large city problem, since the highest rates appear in the most heavily populated sections of the Nation. In 1972, the average value of stolen automobiles was $936 at the time of theft. Persons arrested for auto theft tend to be young, male, and white. In 1972, 54 percent of all persons arrested for auto theft were under 18 years of age; 72 percent were under 21.

Although only 17 percent of auto thefts are cleared by arrest, the majority of automobiles are recovered. This high recovery rate is due mainly to the effectiveness of the National Crime Information Center (NCIC), a computerized system operated by the FBI and serving all law enforcement agencies throughout the nation.

Although auto theft is a major crime problem, it would not be, in comparison with other possible transportation crime targets, very re-

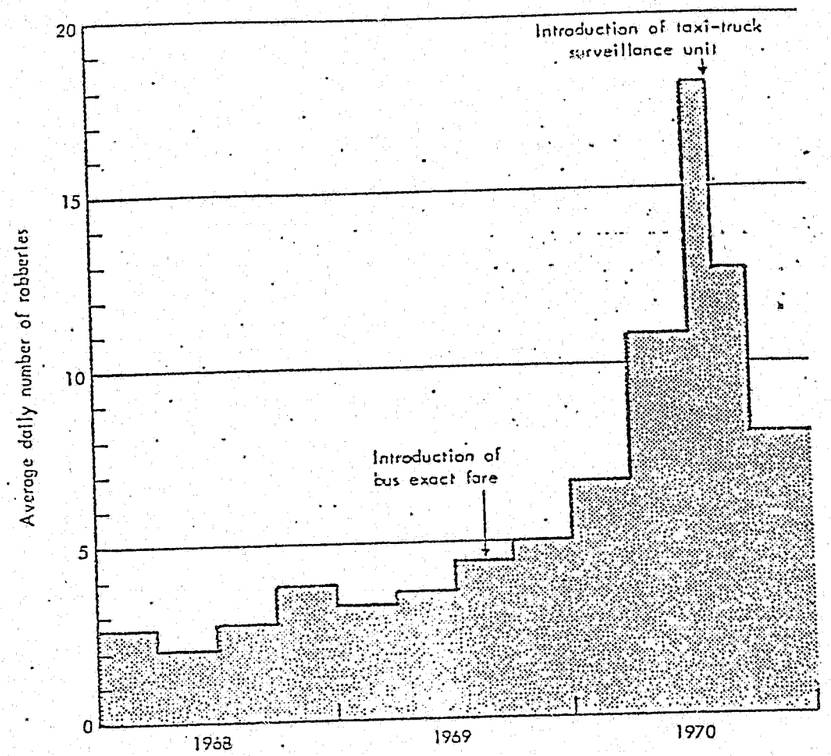
warding to pursue in the current CPTED Program. Auto theft is a property crime that engenders little fear -- anger and inconvenience are the more likely outcomes.

b. Public motor vehicles. Although few data are available, robberies of taxicabs appear to have been increasing in many cities. For example, in New York City, the number of taxicab robberies increased markedly during the period 1968-1970, as exhibited in Figure 8-7. As a result, "gypsy" cabs came into existence. In general, gypsy cab drivers live in the more high crime neighborhoods of the city; often, they have criminal records of their own. Strictly speaking, they are providing cab service in those (high crime) areas that are not being well served.

Figure 8-7 also indicates the introduction of two programs that might have impacted taxicab robberies. The Rand study found that the introduction of bus exact fare did not seem to influence the occurrence of taxicab robberies, while the introduction of a special taxi-truck surveillance police unit did result in a marked decrease in these offenses. In summary, the Rand study concluded that there was no concrete evidence that any displacement occurred between taxicab robberies and robberies in the New York City mass transit (subway and bus) systems.

Other preventive measures that have been used in controlling robbery of cab drivers are:

- Off-duty policemen driving taxicabs.
- Bulletproof shields between cab drivers and passengers.



Source: NYCPD Planning Division

Secondary Source: Chaiken et al.

Figure 8-7. Taxi Robberies in New York City, 1968-1970

CONTINUED

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- Frequent stopping and mailing of excess cash to their homes by cab drivers.
- A limited cash program; excess cash is placed in a keyless deposit box that cannot be opened by the driver. (Feeney[9] reports that the Yellow Cab Company of California was able to decrease robbery by 67 percent by adopting a $5 limited cash program in the Los Angeles area.)
- A signal tie-in with the police.
- Introduction of a credit card system for payment of taxicab service.

In considering cab driver robbery as a potential crime-environment target for CPTED, it should be noted that the crime is both severe and fear-producing. On the other hand, cab drivers are few (compared with the number of passengers riding urban mass transit systems), and there is generally a low social dependency on taxicabs (except for late-night employees going to and from work). Also, it is not clear how effective CPTED strategies could be against taxicab robberies, since taxicabs are moving targets and constitute a dispersed environment.

c. Parking facilities. Although extensive data on parking facility crimes are not available or easily accessible, it is believed that two types of crimes predominate -- robbery and, to a lesser extent, auto theft. Relative to total commercial robberies, Feeney found in

Oakland that robberies in parking garages or lots accounted for less than 2 percent of total robberies.

The relatively low incidence of crime and limited number of sites would put parking facilities low on the priority list of potential transportation targets for CPTED.

d. Service stations. The number of service station robberies is about ten times those occurring in parking facilities -- at least, this was the case in Oakland. In addition, Feeney found that:

> "...in 1968 there were 9,651 service station robberies in cities of 25,000 plus population, an increase of 28.7 percent over 1967. Service station robberies in 1968 made up approximately five percent of all robberies in the U.S. and averaged about $126 each. At least 19 attendants were killed during robberies in 1968-1969. Frequently service stations that stayed open 24 hours a day were being singled out during nighttime hours as easy marks. Employee turnover was high and many service station dealers were considering cutting back on their hours. In one city, the late night, early morning shifts were being referred to as "Vietnam duty."

The "no-change" or "exact-change" program started by Standard Oil of California in 1969 has proven to be an effective, or at least popular, intervention measure against service station robbery. Five major oil companies (Mobil, Phillips, Shell, Humble, and Gulf) have indicated that they would like to expand their use of the program. Although there is some evidence that the program does cause a slight loss of business (at least initially), other potentially dangerous side effects (e.g., bodily injury from thwarted robbers, increased robberies when the service station safe is emptied, etc.) have not been observed. A Humble Oil survey revealed that several other deterrent approaches have been tried, including alarm system, cameras, trained dogs, bullet-proof teller's offices, structural changes, regular police visits, and a reward program. Some remarks about the above mentioned approaches include: "Alarm systems have proven costly and less than satisfactory;" "Cameras are no good and too expensive;" "Dogs have bitten customers;" and "Teller's offices are good only for self-service stations."

Robbery of service station attendants is both severe and fear-producing, thus qualifying it for potential consideration under the CPTED Program.

e. Freight terminals. The U.S. Department of Transportation (DOT) has undertaken extensive national analysis of the cargo theft and pilferage problems in all modes of transportation, with special concentration in the trucking and rail modes.

Losses resulting from cargo theft and pilferage in the transportation industry have been conservatively estimated to exceed $1 billion annually.

Analysis of claims data shows that nine commodities (clothing, electrical appliances, automotive parts, food products, hardward, jewelry, tobacco products, scientific instruments, alcoholic beverages) make up almost 80 percent of total national loss due to theft and pilferage.

An interesting finding of the DOT analysis is that about 85 percent of goods and materials stolen go out the "front gates" on persons and in vehicles authorized to be in loading and unloading areas of transportation facilities. Only about 5 percent involves the afterhours break-and-enter burglary. Although catastrophic and highly publicized, the armed hijack or grand larceny of a tractor-trailer or a complete container amounts to only some 10 percent of the total picture. With regard to the 85 percent lost through authorized vehicles and persons, the DOT analysis shows that about 60 percent consists of thefts in quantities of one case or more but less than a full load. The remaining 25 percent is in the nature of pilferage of less than one case. Consequently, prevention programs should be primarily directed at authorized personnel, most of whom are, of course, employees.

In cooperation with LEAA, DOT has studied the relationship between cargo theft and organized crime. It was determined that organized crime is involved in a great deal of cargo theft. This is because much stolen property is taken to a third party for resale and/or entry into an illicit distribution system. Thus "the existence of what have come to be known as 'fences', although perhaps themselves unorganized, constitute a type of organized crime that contributes greatly to increased cargo theft."[10]

To counter cargo theft at freight terminals, DOT has suggested the following measures:

- Personnel Identification and Control (identification systems, employee screening, visitor screening, maintenance crew screening, package control).
- Controlled Areas (controlled areas, limited areas, exclusive areas, vehicle control).
- Barriers (fencing, entrances, locks).
- Lighting (continuous lighting, glare projection lighting, emergency lighting).
- Alarms and Communications (local alarm system, police connection system, central station system).
- Guards (guards, sentry dogs).

In addition, DOT has developed guidelines for shippers and receivers, the trucking industry,[12,13] and the rail industry.[14]

Although cargo theft is a severe economic crime, it is not fear-producing, nor does it occur in a transportation environment that has a high level of social dependency. However, the nature of the crime and the area specific nature of the environment make freight terminal theft an ideal crime-environment target for CPTED. Use of CPTED concepts in this environment should provide a unique opportunity to test their effectiveness in preventing nonstrangers (i.e., employees and authorized personnel) from committing crimes.

D. Potential Crime/Environment Targets

Based on the discussion of Section C, preliminary recommendations regarding potential CPTED targets in the transportation environment have been developed. Table 8-18 provides a summary; the designation in each matrix cell refers to that group that must be primarily protected by any crime prevention strategy. A brief discussion follows.

1. Local Bus. A single anticrime strategy (the nearly universal institution of exact fare plans during the late 1960's) has been a crucial determinant of the current bus crime picture. Considering the universality and the continued use and acceptance of the strategy, it would seem that exact fare has remained quite effective against bus driver robberies over time.

The robbery of passengers is conceivably the most serious of the bus crime problems. While it is impossible to determine whether exact fare has displaced the robbery to passengers, it is apparent that a large proportion of total serious bus crimes are robberies and that passengers are the victims in the majority of all cases. The crime is highly fear-producing, the threat posed by physical assault outweighing the effects of any dollar loss experienced. Since the crime problem is grave and extensive, CPTED strategies could produce considerable impact.

However, obtainable data on the problem are relevant only to robberies aboard the vehicle, those occurring at the bus stop being classified as street crimes. If the target to be attacked is defined as the interior of the vehicle, some possible strategies would be precluded.

TABLE 8-18

POTENTIAL TRANSPORTATION CRIME/ENVIRONMENT TARGETS

PRIMARY TARGETS		SECONDARY TARGETS				
		PRIVATE VEHICLES	PUBLIC VEHICLES	PARKING FACILITIES	SERVICE STATIONS	FREIGHT TERMINALS
LOCAL RAIL	PASSENGERS		OPERATORS	CUSTOMERS	OPERATORS	CARGO
LOCAL BUS	PASSENGERS		OPERATORS	CUSTOMERS	OPERATORS	CARGO
ROBBERY	PASSENGERS		OPERATORS	CUSTOMERS	OPERATORS	CARGO
AGGRAVATED ASSAULT	OPERATORS		OPERATORS	CUSTOMERS	OPERATORS	CARGO
LARCENY (INCLUDES PURSESNATCH)	PASSENGERS		OPERATORS	CUSTOMERS	OPERATORS	CARGO
AUTO THEFT	VEHICLES	VEHICLES		VEHICLES		
VANDALISM	PROPERTY					

If the target is expanded to include bus stops, its range becomes extremely dispersed and multidimensional.

Because incidents of passenger assault are not numerous, focus upon the assault of drivers is indicated. Although incidents involving only the *threat* of assault of a driver far outnumber those in which an actual assault takes place, evidence of fear nonetheless exists. These threats of assault are highly diversified, ranging from pranks to irate outbursts to the potentially violent reactions of robbers frustrated in their attempts. In addition, assaults and threats display more dispersion geographically and temporally than robberies.

For these reasons, strategies for countering assault must be directed at various levels. Furthermore, because the problem involves human interactions and because the driver's handling of a situation has been found to play a critical role, company policies aimed at reducing the potential causes for conflict and at improving driver training have been suggested as the most effective strategies. While strategies involving physical modification of the bus itself, such as the construction of barriers or turnstiles, might have considerable impact, they have been ill-received by drivers and management in the past.

While it is difficult to determine the extent of larceny incidence aboard buses, it is probable (given that the bus congregates a relatively large number of people in a relatively captive situation) that the level is high. It may be that strategies directed at more serious crimes would have considerable impact on larceny as well.

When the indirect costs of vandalism (revenue losses, driver time lost, overhead, legal fees, and claims suits) are added to the direct dollar costs for repairs and materials, the total cost of vandalism poses a serious problem, especially for bus companies in the largest cities. In addition, the secondary effects of the demoralizing atmosphere created by destructive acts and fear of possible injury resulting from them are considerable. Since these costs are born chiefly by the transit companies themselves, their management has developed programs against vandalism in areas that lie somewhat outside the CPTED framework, such as research in developing vandal resistant materials, and school liaison and community relations programs.

In conclusion, when viewed in terms of severity of incidence and degree of fear produced, robberies against passengers emerge as the prime target for the CPTED Program in the bus environment, followed by assaults against drivers. Obviously, programs directed at the more serious crimes could impact on the lesser crimes and possibly on vandalism as well.

2. Local Rail. All available data sources confirm that incidents of robbery dominate the crime picture in the rail transit environment; furthermore, robbery incidence appears to have increased significantly in recent years. The victims of rail system robbery (as well as all other rail crimes) are predominantly passengers. Thus, given the number of persons exposed to the crime and the high degree of fear which it produces, CPTED strategies directed against rail robbery could have

great impact. In terms of Program-related considerations as well, the crime offers opportunities for impact. Passenger robberies occur most frequently during the low-ridership evening and nighttime hours. They exhibit a high degree of geographical concentration as well, occurring often in certain routes and stations and more frequently in the stations than aboard vehicles. Thus, strategies directed against the crime at a limited number of locations and at certain periods could provide highly effective.

The incidence of assault in rail systems is considerably lower than that of robbery; nevertheless, the crime occurs with sufficient frequency and generates sufficient fear to merit serious attention. The characteristics of the crime render it slightly less amenable than robbery to impact by specifically directed CPTED strategies. Assaults tend to be somewhat more dispersed over the rail network than robberies and to be somewhat more evenly distributed between stations and trains. They are also less concentrated temporally, occurring throughout the afternoon and evening hours. However, they do tend to peak at the rush hour and thus afford opportunity for impact. An example, would be through physical design modifications to control passenger density and movement.

Although lesser crimes such as pursesnatch and pickpocket are inherently less fear-producing than robbery and assault, it is possible that their occurrence with extremely high frequency in certain portions of a rail system might exacerbate or even engender a threatening atmosphere. Thus, CPTED strategies directed at the more serious crimes might have considerable impact upon these crimes as well.

As discussed in relation to the bus environment, while the overall costs sustained by transit systems as a result of vandalism are indeed high, management concern over this problem has initiated the development of various counterstrategies. Thus, for the rail movement, targets with the highest potential for the CPTED Program appear to be the serious crimes -- predominantly passenger robberies, with assaults on passengers as a secondary focus.

3. Secondary Targets. The subenvironments of private vehicles, public vehicles, parking facilities, service stations, and freight terminals have been designated "secondary" because of their less severe crime problems and more limited national importance, as compared to the primary targets of urban mass transit. Thus, only if *all* of the primary targets are eliminated from consideration should CPTED select on of the secondary targets.

Section C has discussed each of the secondary targets to the extent possible, given the limited data that are available. Based on the crime-environment, and Program-related criteria identified in Chapter 2, the freight terminal and its related cargo theft program appear to be the secondary target most pertinent to the CPTED Program. Although cargo theft is not a fear-producing crime, it is economically significant. More importantly, it has been defined and analyzed, and preventive measures have been and are being proposed and implemented by DOT. The potential leverage that could be provided by DOT in this area is an important consideration.

Following freight terminals, public vehicles (i.e., taxicabs) and service stations are of comparable importance for CPTED consideration.

Both have a severe robbery problem which engenders considerable fear. The theft of private vehicles is of lesser priority; although the incidence of auto theft is significant, it is unclear what new preventive measures could be proposed by CPTED. The robbery and auto theft problems in parking facilities remain as potential targets; however, the relatively low incidence of crime and limited importance of parking facilities would militate against consideration by a national program like CPTED.

4. Summary. Urban mass transit has been designated the primary transportation environment for the CPTED Program, on the basis of several environment-, crime-, and Program-related criteria. The urban mass transit systems across the Nation provide numerous potential sites upon which large groups of users depend. Given current awareness of the need to conserve energy and to protect the ecology of our cities, increased dependency on mass transportation has been recognized as a future necessity. The recent passage of the $11.8 billion mass transit bill is evidence of the Nation's awareness that the Nation's mass transit systems must be expanded and improved to meet future transportation demands. Furthermore, urban mass transit systems have experienced in recent years an upsurge of crime that has, in turn, become cause for public alarm. Thus, because both the incidence of crime and fear engendered must be severe if CPTED strategies are to produce measurable impact, mass transit systems provide promising targets.

In addition, because strategies directed against one crime may in fact serve to deter or control other types of crimes as well, the task

of selecting targets must first proceed by identifying the subevnironment that offers the highest degree of amenability to CPTED strategies. This initial step will narrow the scope for a further analysis of particular crimes within that subenvironment.

The first CPTED Workshop, which examined the possible submodes of concern to the CPTED Program, selected the local rail station as the focal point for attention. However, the deliberations of a more recent workshop expanded this focus to include not only a local rail station but the neighborhood surrounding the station, possibly including other urban mass transit components, such as bus stops. This expansion will permit a more comprehensive application of the CPTED approach, based on a composite picture of the physical and social factors in, and the interactions among, the rail station, bus stops, users of the systems, the physically built neighborhood, and neighborhood residents.

NOTES

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