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A Survey of Break-ins in Two Public Housing Sites

BDM Corp., McLean, VA

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16. ABSTRACT *(A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.)*

This report presents the findings of a baseline crime victimization survey conducted in two public housing sites. These findings are part of a test of the validity of security hardware standards developed by NBS. Included in this report is an explanation of the methodology used, demographic and behavior patterns, physical characteristics, and the crime victimization experienced at both sites. Conclusions include the observation that crime patterns indicate the usual complex variables at work and causual relationships are conjectured to be number and skill of criminals, access and exposure of entry portals, number of resident adults in the household, and quality of the building/site security system.

17. KEY WORDS *(six to twelve entries; alphabetical order; capitalize only the first letter of the first key word unless a proper name; separated by semicolons)*

Burglary; crime in public housing; household behavior patterns; housing characteristics (physical); housing security; public housing security; security hardware; victimization survey.

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Daniel R. DeVos

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re: NBS/Doc Contract No. EC-A01-78-00-3530
John S. Stroik, Contracting Officer's Technical Representative, NBS

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A SURVEY OF BREAK-INS

IN

TWO PUBLIC HOUSING SITES

FINAL REPORT

This technical report is being submitted to the National Bureau of Standards (NBS) under Contract No. EO-A01-78-00-3530. The COTR for this study was Mr. John S. Stroik of NBS.

FOREWORD

This report presents the findings of a baseline crime survey conducted in two public housing projects. These findings were developed to provide the context for interpreting the results of subsequent studies of burglary and household robberies in the two projects to be conducted following installation of specially classified security hardware, as part of a test of the validity of security hardware standards developed by the National Bureau of Standards. Ultimately, these studies will enable public and private owners of residential property to compare and select appropriate doors, windows, settings, and locks to protect residents and their belongings.

It should be noted that data contained herein have been compiled as the initial phase of a pre/post-test survey configuration. Therefore, extreme caution should be exercised when making conclusive statements based upon the survey data presented. Also, since sampling procedures for the two survey sites were not controlled relative to each other, direct comparison of the two data bases are not justified.

The preparation of this Final Report was conducted under the direction of Mr. Daniel R. DeVos. Mr. Peter M. Ryan was principal author under the program direction of Mr. J. Timothy Bradley. Substantive contributions were also provided by Dr. Patricia M. Harbour and Ms. Claudia G. Reed.

BDM also wishes to acknowledge the valuable assistance of Mr. John S. Stroik of the National Bureau of Standards who served as Contracting Officer's Technical Representative for the entire study.

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PART 1

EXECUTIVE SUMMARY

CHAPTER I
EXECUTIVE SUMMARY

A. BACKGROUND OF THE STUDY

Crime, especially burglary, is a problem of major consequence in the nation's public housing. Public housing tends to concentrate vulnerable population groups, e.g., the elderly, single women, young children, in the same environment with adolescent and young adult males, a population group which research has shown to be the source of much urban crime. Thus potential predator and prey are brought together in the same environment.

Crime creates a climate of fear and suspicion in areas where it is concentrated, such as housing complexes. Such fear interferes with the formation of closely integrated supportive social structures which could exert social control over public behavior and could simultaneously provide psychological support for crime victims. High levels of crime thus work to erode communities' abilities to defend themselves from crime, creating a terrible self-reinforcing cycle of criminal activity. In short, public housing residents are very likely to experience residential crime.

Historically, the physical design of public housing has often contributed to the vulnerability of the residents. When originally planned, the primary focus was upon providing adequate low cost housing. Security was not a priority concern, and relatively little attention was given to issues of vulnerability and physical security.

The security hardware (doors, windows, and locks), which protects a dwelling unit is only one of a variety of factors which impact crime activity in any particular area. Hardware is critical however, since it constitutes the last line of defense before the householder must physically confront the thief in order to protect property. The increasing severity of crime has led many housing authorities to spend considerable sums of money to improve security in their projects, and the demand for improved security continues.

A large portion of these expenditures has gone for unit security hardware. Housing authorities have often based these hardware selections on insufficient information, for no standards have existed by which the effectiveness of one product could be compared to another. To fill this void, the National Institute for Law Enforcement and Criminal Justice (NILECJ) requested that the National Bureau of Standards (NBS) develop a criterion-referenced set of standards for doors and windows, and related locks. NBS developed a set of standards defining four security classes of doors, windows and hardware, ranging from Class I, which provides minimum protection, through Class IV, which provides a relatively high degree of physical security.

The classification standards needed to be validated by actual experience in the field to assure their applicability and relevance. NBS and the U.S. Department of Housing and Urban Development (HUD) concluded an inter-agency agreement to conduct a field test of these standards using public housing projects as the test sites. NBS contracted with the BDM Corporation in November 1977 to collect data on the incidence and methods of household crime at two test sites.

B. REVIEW OF THE METHODOLOGY

NBS specified two public housing project sites for the study, one each in Washington, DC, and in Baltimore, MD., and provided BDM with a survey instrument to be employed in the study. BDM personnel visited these sites prior to the start of field work to become familiar with the projects, their management and the residents. A pilot test of the survey was carried out, testing all aspects of the survey instrument and field procedures. The instrument was extensively modified and field procedures defined in detail.

The households of each site were stratified according to size of dwelling unit and type of building. Within each stratum a proportional, self-weighting sample was randomly selected to ensure a minimum of 180 completed interviews for Site W (Washington) and 120 completed interviews

for Site B (Baltimore). For each project a 10 percent oversample was included to account for losses due to interview refusals, contact break-offs, or unit vacancies.

BDM conducted a detailed training program for the interviewers, including contact procedures, conducting the interview, carrying out the hardware inspection and photographing unusual security items. Laminated photo-identification cards were issued to each interviewer. Personalized notifications were sent to every selected household, alerting them to the up-coming interview.

The survey instrument addressed three major areas: (1) the household's experience with crime; (2) the characteristics and daily patterns of the residents; and (3) the nature and condition of the unit's security hardware. After conducting the interview and inspection, the interviewer documented any part of the unit's security hardware that differed from the standard, such as an additional lock, a cracked doorframe, or special window locks.

Following each day's interviews, the completed survey instruments were reviewed for inconsistencies and missing data. Wherever either appeared, the supervisor first contacted the interviewer for clarification, and then the respondent, if required.

The completed instruments were subsequently compiled for coding, review, key punch and key verification. The resultant data cards were inputed into the computer files, followed by software screening and final correction. This data base provided the basis for subsequent statistical analysis. The data were processed via the Statistical Package for the Social Sciences (SPSS) and applicable FORTRAN routines. Analysts conducted detailed studies of all reported break-ins, carefully observing for the emergence of any significant patterns.

A basic statistic used in these analyses was the Successful Burglary Ratio (SBR) the computation of which is shown in Exhibit I-1. A statistical correlate of the SBR which is also referred to in the study, the Successful Break-In Ratio (SBIR), combines household robbery with burglary,

$$\frac{\text{SUCCESSFUL BURGLARIES} + \text{UNSUCCESSFUL BURGLARIES}}{\text{TOTAL BURGLARY INCIDENTS}}$$

$$\frac{\text{SUCCESSFUL BURGLARIES}}{\text{TOTAL BURGLARY INCIDENTS}} \times 100 = \text{SUCCESSFUL BURGLARY RATIO (SBR), (\%)}$$

02489/80W

Exhibit I-1. Computation of Successful Burglary Ratio (SBR)

$$\frac{\left.\begin{array}{l}\text{SUCCESSFUL HOUSEHOLD ROBBERIES}\\ \text{SUCCESSFUL BURGLARIES}\end{array}\right\} \rightarrow \text{SUCCESSFUL BREAK-INS} + \left.\begin{array}{l}\text{UNSUCCESSFUL HOUSEHOLD ROBBERIES}\\ \text{UNSUCCESSFUL BURGLARIES}\end{array}\right\} \rightarrow \text{UNSUCCESSFUL BREAK-INS}}{\text{TOTAL BREAK-INS INCIDENTS}}$$

$$\frac{\text{SUCCESSFUL BREAK-INS}}{\text{TOTAL BREAK-IN INCIDENTS}} \times 100 = \text{SUCCESSFUL BREAK-IN RATIO (SBIR), (\%)}$$

02489/80W

Exhibit I-2. Computation of Successful Break-in Ratio (SBIR)

under the concept "break-in". Computation of the SBIR is shown in Exhibit I-2.

C. DEMOGRAPHICS AND BEHAVIOR PATTERNS

BDM's review of the structure and behavior patterns of households in Sites W and B revealed that:

(1) 57% of heads of household (HOH) in Site W and 71% of HOH in Site B did not have another adult living with them

(2) Most of the sampled households were occupied by an adult during the day on weekdays (72%), and on weekends (92% on Saturday and 85% on Sunday). The pattern for Site W townhouses, however, varied significantly from that of other building types.

(3) 94% of sampled householders kept their front doors locked while at home, although only 77% of Site W townhouse residents did so.

(4) Approximately 75% of the householders in townhouses and walkups locked their windows at night and when they went out, while only 25% of sampled high-rise occupants did so.

D. PHYSICAL CHARACTERISTICS

1. Site W

The BDM interviewers' inspection of Site W doors, windows, and locks resulted in several relevant findings:

(1) Few households had installed additional security hardware of their own

(2) Additional items which were used consisted of door chains or make-do substitutes for malfunctioning window locks, such as nails or broom-stick props

(3) 95% of the security assemblies or components were in operable condition

(4) In all units, with the exception of Area 1 townhouses, virtually every door was equipped with a functioning vertical deadbolt lock

(5) The vast majority of windows (83%) had locks which were in at least operable condition.

2. Site B

The BDM interviewers' inspection of doors, windows, and locks at Site B also resulted in several relevant findings:

(1) Few households had installed additional security hardware of their own

(2) Additional items consisted of door chains or make-do substitutes for malfunctioning window locks

(3) Virtually all (98%) the security assemblies and components were in operable condition

(4) Virtually every door had been equipped with a functioning vertical deadbolt lock.

E. HOUSEHOLDS' EXPERIENCE OF CRIME

1. Site W

The 182 sampled households in Site W reported the following experience during the preceding year:

0 Successful household robberies
1 Unsuccessful household robbery
10 Successful burglaries
10 Unsuccessful burglaries, and
8 Vandalisms.

Of the 21 break-in incidents (unsuccessful robberies + unsuccessful burglaries + successful burglaries), 20 (95%) were burglaries, suggesting that criminals in the area were careful to avoid confrontation with their victims or residents.

BDM's analysis resulted in several key findings for Site W:

(1) Walkup units were the target of 79% of the reported burglaries

(2) 33% of the successful break-ins resulted in little or no damage to the units' security hardware, suggesting that keys may have been used or that the doors may have been unlocked, and

(3) Townhouse units accounted for less than 10% of burglary and robbery incidents.

(4) The most frequent break-in points of entry (POE) were front doors (53%), followed by windows (43%), and rear doors (4%).

2. Site B

The 120 surveyed households at Site B reported the following household crimes for the previous year:

10 Successful robberies
3 Unsuccessful robberies
19 Successful burglaries
3 Unsuccessful burglaries, and
11 Vandalisms.

Of the 35 break-in incidents, 13 (37%) were robberies. This rather high rate suggests that the criminals operating at Site B are relatively bold and/or that the residents are not sufficiently cautious when opening their doors.

BDM's analysis of the crime data revealed several key findings regarding Site B:

(1) Burglaries were distributed among townhouses and high-rise units in rough proportion to the number of units

(2) In the high-rises, second floor balcony doors were often attacked (18%), most likely by burglars climbing up from the ground, and

(3) A significant proportion (20%) of the successful break-ins in which doors were the POE resulted in no evident damage to the doors or locks, suggesting that keys may have been used or that the doors were not locked.

(4) Front doors were the most frequent POE for break-ins (76%), followed by windows (18%), and rear doors (6%).

F. CONCLUSIONS

While both housing complexes experienced exceedingly high burglary rates, the seriousness of the problem has reportedly been sharply reduced over the past two to three years. Victimization surveys carried out for HUD in the winter of 1975-76 by Brill and Associates 1/2/ established the annual rate of burglary attempts at Site W at 500 per 1000 households and at 593 per 1000 households at Site B. The survey carried out by BDM in the summer of 1978 revealed annual burglary incident rates at Site W of 110 per 1000 households and at 183 per 1000 households at Site B. The Site W rate is comparable to national data for low income families recently published by the Law Enforcement Assistance Administration (LEAA) 3/. The scope of the present project does not provide for a more in-depth analysis of this precipitous decline in the burglary rate at the two sites.

Despite the great drop in burglary incidents, the SBR covering the same time period has risen sharply. In Site W the SBR has risen from 19% to 47%, and from 32% to an extremely high 85% at Site B. These findings indicate that while fewer burglaries are being attempted, at both sites, a far greater percentage of those being attempted are successful.

BDM's study of the patterns of household crime in the two complexes found that:

(1) Household crime levels were almost twice as high at Site B (one incident/every 16 units) than at Site W (one incident/every 28 units)

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1. Brill, W., and Associates, VICTIMIZATION, FEAR AND ALTERED BEHAVIOR. . . . . (Site W, Washington, D.C.); U.S. Department of Housing and Urban Development, Washington, D.C., (April, 1977)

2. Brill, W., and Associates, VICTIMIZATION, FEAR AND ALTERED BEHAVIOR. . . . . (Site B, Baltimore, MD.); U.S. Department of Housing and Urban Development, Washington, D.C., (April, 1977)

3. LEAA, Criminal Victimization in the United States, Washington, D.C., (November, 1976)

(2) Site W Townhouses experienced the lowest SBIR (25%) of the three building types. Townhouses also had more multiple adults (versus single HOH) living in them than did walk-ups or high-rises.

(3) Townhouse residents also followed more standard work patterns of weekday vacancy and weekend presence than did residents of the other housing types, and

(4) The condition of security hardware appeared to have little or no relation to criminals' choices of targets; in fact, Site W townhouses, which reflected the lowest SBIR also had the poorest hardware rating.

G. ORGANIZATION OF REPORT

The remainder of this report is divided into two parts - Background and Findings. "Background" includes chapters discussing the origin of the study and the methodology by which it was conducted. "Findings" presents the results of the study in chapters on the demography and behavior of residents, characteristics of the units' security hardware, and victimization. Each of these chapters contains discrete segments dealing with each housing complex.

PART 2

BACKGROUND

CHAPTER II
BACKGROUND OF THE STUDY

A. CRIME IN PUBLIC HOUSING

Crime rates in public housing are generally extremely high. Studies conducted in recent years suggest that urban residents of public housing projects suffer the highest rates of predatory crimes such as robbery and burglary of any segment of the population.

These findings are borne out by the figures presented in Exhibit II-1. In three public housing projects studied by HUD in 1975-1976, the robbery rate was more than triple that for other center city residents and nearly six times that for the low-income population nationally. Burglary occurred at a rate more than five times that prevailing among the nations' low income population. The present study focuses on the problem of break-ins in public housing, including burglary and attempted burglary as well as robbery and attempted robbery.

Public housing, as a rule does not provide adequately for the security of its residents or their possessions. The social structure and demographic characteristics of public housing populations are generally considered to significantly contribute to this lack of security. A particulary large and vulnerable segment of this population is the single head of household (HOH), many of whom are female, elderly, or both. When absent from their dwelling, no one is normally present to deter entry or protect the dwelling's contents. Even when another resident is present, he or she is likely to pose little threat to a determined robber.

Another significant segment of the typical public housing population (both resident and transient) consists of adolescent and young adult males. Research has shown that the majority of burglars are of this age-sex classification.1/ Thus, public housing often tends to concentrate both potential victims and assailants in the same environmental space. In

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1. Repetto, T., RESIDENTIAL CRIME; Ballinger, Cambridge, Massachusetts (1974).

RATE PER 1,000 POPULATION 12 AND OLDER	LEAA[a]			HUD[b]
	NATIONAL		CENTRAL CITIES	3 PUBLIC HOUSING PROJECTS
	ALL INCOMES	INCOME LESS THAN $3,000	ALL INCOMES	LOW INCOME
ROBBERY	6.7	11.6	19.0	68.6
PERSONAL LARCENY WITH CONTACT	3.1	5.8	8.4	24.4
ASSAULT	25.1	37.4	25.3	33.2
SEXUAL ASSAULT	0.9	2.3	1.5	9.3
RATE PER 1,000 HOUSEHOLDS				
BURGLARY	91.5	110.2	96.7	567.8
SUCCESSFUL BURGLARY	71.3	86.5	73.9	211.7
ATTEMPTED BURGLARY	20.2	23.7	22.8	356.2
LARCENY	125.2	102.3	89.8	230.5

SOURCES:

a. U.S. DEPARTMENT OF JUSTICE, LAW ENFORCEMENT ASSISTANCE ADMINISTRATION, CRIMINAL VICTIMIZATION IN THE UNITED STATES, 1975, NO. SD-NCS-N-7, DECEMBER 1977.

b. BASED ON FIGURES PRESENTED IN A SERIES OF THREE REPORTS PUBLISHED BY THE U. S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT ENTITLED VICTIMIZATION, FEAR OF CRIME AND ALTERED BEHAVIOR PUBLISHED DURING 1976.

3961/78W

Exhibit II-1. Comparison of Crime Rates

addition, the public housing social structure also does little to protect vulnerable residents. Residents tend not to seek the active association with other public housing residents 2/ which would contribute to their mutual protection. Environments characterized by low social cohesion have consistently reflected higher rates of burglary than those with greater social cohesion.

While these social and demographic factors increase the probability of criminal activity in public housing, burglary success is also related to the physical vulnerability of the dwellings themselves. The original design and construction of most public housing stressed economy. Site plans and designs were drawn up on small budgets, and high priority was given to providing habitable dwellings in which to temporarily place individuals without other socially acceptable living accommodations. The physical security of the units did not appear to be of major concern and therefore received little attention.

In typical public housing configurations, doorways and windows are often hidden from the view of casual observers or are far removed from such observation. This design characteristic increases the likelyhood that a burglary-in-progress will go undetected. Furthermore, doors and windows in most public housing cannot withstand the physical assault of even the most amateurish burglar. The materials of which they are constructed and in which they are set are generally insubstantial and easily broken through. In addition, the locking devices which secure them are generally ineffective against virtually any forced entry, even when in perfect working order. In reality, doors and windows are often not in working order and locks and bolts often malfunction or are broken. Most public housing residents cannot afford to buy more adequate security devices for their dwellings or are not inclined to install such devices in a dwelling that does not belong to them. Furthermore, door frames and window settings often sag, warp, or otherwise deteriorate, preventing proper closure.

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2. Cooper, C., EASTER HILL VILLAGE; Free Press, New York (1972).

Apartment dwellers, especially those who are poor, are not likely to have the physical ability, expertise, tools or other resources to correct these conditions.

In view of the above factors (e.g., social structure, demographic characteristics, design and construction of housing units), residents of public housing constitute a population with a high risk of being victimized by burglary.

B. APPROACHES TO PREVENTING RESIDENTIAL CRIME

The problem of residential crime, regardless of its particular location, has stirred a variety of responses in past years. Attempts at prevention have generally focused on one of several areas, beyond the simple and direct response of residents arming themselves for self protection:

(1) Police patrol methods
(2) Housing management techniques
(3) Dwelling unit security devices
(4) Housing environment design
(5) Residents' characteristics
(6) Residents' organization
(7) Social programs

In the past, policy and decision-makers frequently fastened onto one or another of these approaches as the key to solving the residential crime problem. Whether such solutions involved more police on foot, tenant patrols, recreation centers, resident aides, better lighting, physical rehabilitation, or defensible space, any such one-dimensional approach was generally found to be unsuccessful. In the last five to ten years, it has been increasingly recognized by HUD as well as other agencies that a multi-faceted problem such as residential crime requires comprehensive solutions. This awareness has produced such efforts as the Law Enforcement Assistance Administration (LEAA) Monograph Residential Security, 4/ which provides an overview of the interactions of various approaches to residential security.

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4. LEAA, NILECJ, RESIDENTIAL SECURITY, Washington, D.C.: US Government Printing Office (December 1973).

Just as residential crime is a complex problem consisting of many dimensions and factors, effective residential security derives from solutions involving a number of interdependent dimensions. One dimension of residential security is security hardware for individual dwelling units. As suggested previously, when the limits of social control are reached physical defense measures must provide additional protection.

C. STANDARDS FOR RESIDENTIAL SECURITY HARDWARE

A householder's fundamental expectation and hope concerning the security of his home is that once a door or window has been closed, it will be opened again only by one with a right to do so. In many situations, social codes and pressures are sufficient to prevent property invasion. But in a densely populated environment, if social codes are not sufficiently binding to prevent unauthorized entry, a householder relies on the physical barrier constituted by doors and windows and the devices which secure them to keep intruders out of his house.

As concern regarding residential crime increased in recent years, the demand for more and better locking devices has likewise increased. Unfortunately, at the time there existed no standards for lock performance or quality, allowing great disparities in the security hardware market. Furthermore, because a strong lock attached to a weak door or window sash provides little more protection than an inferior lock in the same location, the frame in which a door or window is set is equally important to the security of the dwelling. Since no standards existed for break-in protection existed for any of these devices either, owners of residential property had no criteria to guide their selection of doors, windows, or locks.

LEAA's National Institute for Law Enforcement and Criminal Justice (NILECJ) responded to this need by arranging for the National Bureau of Standards (NBS) to establish standards for residential security hardware. NBS subjected existing equipment to laboratory tests and evaluation, and conducted research leading to the development of several series of documents, including national voluntary equipment standards, user guidelines,

and state-of-the-art surveys. In May, 1976, "Physical Security of Door Assemblies and Components" (NILECJ-STD-0306.00) promulgated the standards summarized in Exhibit II-2. In September 1976, a draft of "Physical Security of Window Units" (NILECJ-STD-0316.00) provided standards for windows summarized in Exhibit II-3.

The Law Enforcement Standards Laboratory (LESL) and the Center for Building Technology (CBT) at NBS developed these standards for four classifications of both door and window hardware. Class I provides a minimum level of security, while Class IV reflects a relatively high degree of physical secrity. Classes II and III are intermediate levels. The classifications are empirically-based, derived from the varying levels of effort that burglars might exert in typical attempts to penetrate residential doors or windows. A typology of attacks was developed following consultation with experts in fields of security and law enforcement. These attacks were then replicated in the laboratory and translated into measurements of physical effort. These measurements were converted into the standards previously mentioned, and extensive laboratory work carried out to develop consistent techniques and criteria for testing and classifying security hardware available in the commercial marketplace.

Even with this comprehensive process, however, questions remained pertaining to the actual "real world" application of the standards.

D. The Need for Field Validation of the Standards

While the standards had been developed and completely tested in the laboratory, NBS could not be sure that hardware meeting different standards would actually perform differently under actual field conditions. Certain key issues could be resolved only through a controlled field test:

(1) Will each class of hardware show measurable differences in effectiveness from the other classes, or will one be as effective as another?

(2) Will the relative effectiveness of the hardware coincide with the order of the classifications?

DOOR ASSEMBLY TESTS	TEST METHOD PARAGRAPH	COMPONENT TEST	MEASURED PARAMETER	REQUIREMENT CLASS I	CLASS II	CLASS III	CLASS IV
BOLT PROJECTION STRIKE HOLE	5.6	LOCK	PROJECTION SIZE	14.3mm (9/16 in) *	14.3mm (9/16 in) *	17.5mm (11/16 in) *	17.5mm (11/16 in) *
BOLT PRESSURE	5.7	LOCK	RESISTANCE	670 N (150 lbf)	670 N (150 lbf)	670 N (150 lbf)	670 N (150 lbf)
JAMB/WALL STIFFNESS	5.8	JAMB/WALL	FORCE TO SPREAD	6,000 N (1,350 lbf)	8,000 N (1,800 lbf)	16,000 N (3,600 lbf)	22,000 N (4,950 lbf)
			INCREASE IN LOCK-FRONT TO STRIKE SPACE	9.5mm (3/8 in)	9.5mm (3/8 in)	13mm (1/2 in)	13mm (1/2 in)
KNOB IMPACT**	5.9	LOCK	RESISTANCE-100 JOULE (74 ft-lbf) IMPACT	ONE BLOW	TWO BLOWS	FIVE BLOWS	TEN BLOWS
CYLINDER CORE TENSION	5.10	LOCK	RESISTANCE	1,300 N (290 lbf)	4,800 N (1,080 lbf)	11,000 N (2,470 lbf)	11,000 N (2,470 lbf)
CYLINDER BODY TENSION	5.11	LOCK	RESISTANCE	---	---	---	16,000 N (3,600 lbf)
KNOB TORQUE**	5.12	LOCK	RESISTANCE	25 Nm (18.5 lbf-ft)	50 Nm (37 lbf-ft)	110 Nm (81 lbf-ft)	160 Nm (118 lbf-ft)
CYLINDER TORQUE***	5.13	LOCK	RESISTANCE	---	---	100 Nm (81 lbf-ft)	160 Nm (118 lbf-ft)
CYLINDER IMPACT***	5.14	LOCK	RESISTANCE - 100 J (74 ft-lbf) IMPACT	---	---	FIVE BLOWS	TEN BLOWS
DOOR IMPACT	5.15	DOOR	IMPACT RESISTANCE AT CENTER AND PANEL	2 BLOWS OF 80 J (59 ft lbf)	CLASS I REQUIREMENTS PLUS 2 BLOWS OF 120 J 120 J (89 ft lbf)	CLASS II REQUIREMENTS PLUS 2 BLOWS OF 160 J (118 ft lbf)	CLASS III REQUIREMENTS PLUS 2 BLOWS 200 (148 ft lbf)
			IMPACT RESISTANCE OF GLAZING--100 J (74 ft-lbf)	ONE BLOW	TWO BLOWS	FIVE BLOWS	TEN BLOWS
HINGE PIN REMOVAL****	5.16	HINGE	RESISTANCE	225 N (50 lbf)	225 N (50 lbf)	900 N (200 lbf)	900 N (200 lbf)
HINGE IMPACT	5.17	DOOR HINGE JAMB/WALL	IMPACT RESISTANCE AT HINGE	2 BLOWS OF 80 J (59 ft lbf)	CLASS I REQUIREMENTS PLUS 2 BLOWS OF 120 J (89 ft lbf)	CLASS II REQUIREMENTS PLUS 2 BLOWS OF 160 J (118 ft lbf)	CLASS III REQUIREMENTS PLUS 2 BLOWS OF 200(148 ft lbf)
BOLT IMPACT	5.18	LOCK DOOR JAMB/ STRIKE	IMPACT RESISTANCE AT BOLT	2 BLOWS OF 80 J (59 ft lbf)	CLASS I REQUIREMENTS PLUS 2 BLOWS OF 120 J (89 ft lbf)	CLASS II REQUIREMENTS PLUS 2 BLOWS OF 160 J (118 ft lbf)	CLASS III REQUIREMENTS PLUS 2 BLOWS OF 200 (148 ft lbf)

*DEAD LATCH PLUNGER MUST NOT ENTER STRIKE HOLE WITH LATCH BOLT.
**APPLIES TO TYPE A LOCKS ONLY.
***DOES NOT APPLY TO KEY-IN-KNOB LOCKS.
****APPLIES TO OUT-SWINGING DOORS ONLY.

SOURCE: U.S. DEPARTMENT OF JUSTICE, LEAA, PHYSICAL SECURITY OF DOOR ASSEMBLIES AND COMPONENTS, NILECJ-STD-030600, MAY 1976.

3961/78W

Exhibit II-2. Door Assembly and Component Requirements

TEST	TEST METHOD PARAGRAPH	MEASURED PARAMETER	MINIMUM REQUIREMENT CLASS I	CLASS II	CLASS III	CLASS IV
LOCKING DEVICE OPERATING FORCE *	5.8	FORCE TO MOVE LOCKING DEVICE	44N (10 lbf)	44N (10 lbf)	44N (10 lbf)	44N (10 lbf)
LOCKING DEVICE STABILITY	5.9.1 (TYPE A)	RESISTANCE TO UNLOCKING MOTION	50 CYCLES BY HAND	50 CYCLES BY HAND	50 CYCLES BY HAND	50 CYCLES BY HAND
	5.9.2 (TYPE B, C, D AND F)	---	50 CYCLES AT 220N (49 lbf)	50 CYCLES AT 220N (49 lbf)	50 CYCLES AT 220N (49 lbf)	50 CYCLES AT 220N (49 lbf)
LOCKING DEVICE STRENGTH	5.10.1 (TYPE A)	RESISTANCE TO STATIC LOAD	220N (49 lbf)	670N (151 lbf)	1335N (300 lbf)	3335N (753 lbf)
	5.10.2 (TYPE B, C, D, AND F)	---	---	670N (151 lbf)	1335N (300 lbf)	3335N (753 lbf)
STATIC LOAD	5.11.1 (TYPE A)	RESISTANCE TO STATIC LOAD	PRIMARY 220N (49 lbf) SECONDARY 220N (49 lbf)	PRIMARY 445N (100 lbf) SECONDARY 670N (151 lbf)	PRIMARY 445N (100 lbf) SECONDARY 1335N (300 lbf)	PRIMARY 445 N (100 lbf) SECONDARY 3335N (753 lbf)
	5.11.2 (TYPE B, D, D, E AND F)	---	220N (49 lbf)	670N (151 lbf)	1335N (300 lbf)	3 35N (753 lbf)
IMPACT RESISTANCE	5.12.1 GLAZING	RESISTANCE TO IMPACT	---	ONE IMPACT OF 50J (37 ft-lbf)	ONE IMPACT OF 100J (74 ft-lbf)	TEN IMPACTS OF 100J (74 ft-lbf)
	5.12.2 SASH FRAME	RESISTANCE TO IMPACT	---	ONE IMPACT OF 50J (37 ft-lbf)	ONE IMPACT OF 100J (74 ft-lbf)	TEN IMPACTS OF 100J (74 ft-lbf)
	5.12.3 SECURITY BARS (GRILLE)	RESISTANCE TO IMPACT	---	---	---	TEN IMPACTS OF 100J (74 ft-lbf)

*DOES NOT APPLY TO WINDOW UNITS WHICH CANNOT BE LOIDED, (SEE 5.7).

SOURCE: U.S. DEPARTMENT OF JUSTICE, LEAA, PHYSICAL SECURITY OF WINDOW UNITS (DRAFT), NILECJ-STD-0316.00 SEPTEMBER 1976.

3961/78W

Exhibit II-3. Window Unit Requirements

(3) Will Class IV prove resistant to all but the most sophisticated burglars, as expected?

NBS, therefore, developed plans to conduct a field test of the standards with the following objectives:

(1) To determine the validity of the standards, and

(2) To establish the relative effectiveness of security hardware meeting the various standards.

Conduct of the field test required specific knowledge of the standards, which the National Bureau of Standards had, and an appropriate environment in which to conduct the test, which HUD could provide. Accordingly, interagency agreement No. H-58-76 was executed whereby HUD and NBS would jointly conduct the field test of the door and security standards developed for NILECJ. The study of which this survey is part is being conducted under the auspices of that interagency agreement.

PART 3

FINDINGS

CHAPTER III
DATA COLLECTION METHODOLOGY

A. INTRODUCTION

Fundamental to the analysis documented in this report was the performance of an extensive data collection effort in the form of face-to-face interviews of a sample of randomly selected households. Prior to the conduct of the study, the survey instrument provided by NBS was extensively modified and cleared by the Office of Management and Budget (OMB). Subsequently, survey personnel were trained in the correct use of the instrument. To provide quality control, the collected survey data were coded, checked for consistency and accuracy, keypunched, key-verified and subjected to computerized editing. This process produced the cleaned data file which served as the basis for the subsequent statistical analysis. This Chapter describes in detail the manner in which these steps were carried out by the BDM project team.

A basic statistic used in this study is the Successful Burglary Ratio (SBR), which reflects the percentage of successful burglaries versus the total number of burglary incidents for a given location over a specified period of time. Computation of the SBR is shown in Exhibit III-1. A statistical correlate of the SBR, the Successful Break-In Ratio (SBIR) combines household robbery with burglary to form the cummulative category, "break-in". Computation of the SBIR is shown in Exhibit III-2.

B. THE HOUSING COMPLEXES

1. Introduction

The public housing projects selected for the study consisted of one site in Washington, referred to as Site W, and one site in Baltimore, referred to as Site B. These projects are both administered by municipal housing authorities and are typical of such urban projects, consisting of a mixture of dwelling sizes and building types concentrated in a densely-populated urban setting.

$$\frac{\text{SUCCESSFUL BURGLARIES} + \text{UNSUCCESSFUL BURGLARIES}}{\text{TOTAL BURGLARY INCIDENTS}}$$

$$\frac{\text{SUCCESSFUL BURGLARIES}}{\text{TOTAL BURGLARY INCIDENTS}} \times 100 = \text{SUCCESSFUL BURGLARY RATIO (SBR), (\%)}$$

02489/80W

Exhibit III-1. Computation of Successful Burglary Ratio (SBR)

$$\frac{\left.\begin{array}{l}\text{SUCCESSFUL HOUSEHOLD ROBBERIES} \\ \text{SUCCESSFUL BURGLARIES}\end{array}\right\} \rightarrow \text{SUCCESSFUL BREAK-INS} \; + \; \left.\begin{array}{l}\text{UNSUCCESSFUL HOUSEHOLD ROBBERIES} \\ \text{UNSUCCESSFUL BURGLARIES}\end{array}\right\} \rightarrow \text{UNSUCCESSFUL BREAK-INS}}{\text{TOTAL BREAK-INS INCIDENTS}}$$

$$\frac{\text{SUCCESSFUL BREAK-INS}}{\text{TOTAL BREAK-IN INCIDENTS}} \times 100 = \text{SUCCESSFUL BREAK-IN RATIO (SBIR), (\%)}$$

02489/80W

Exhibit III-2. Computation of Successful Break-In Ratio (SBIR)

2. Site W Project

The Site W housing complex actually consists of three distinct, but closely grouped projects in Southeast Washington, D.C. (See Exhibit III-3). An elevated freeway separates one of the project groups from the other two. To the north and northeast of the complex, urban restoration has transformed once decrepit row-houses into expensive town-houses. Schools, serving a mixed population, bound the northwestern corner of the complex. To the west, stands a newspaper plant, parking lots, and an area of run-down houses mixed with an occasional auto shop or liquor store. A walled and fenced Navy Yard lies to the south. An aged warehouse and office building forms the southern portion of the eastern border of the complex. The area north and east of the complex contains a supermarket, Marine Barracks, and an area of small shops, bars, and restaurants. Principal bus routes run east and west through the center and along the southern boarder of the complex.

The three projects making up the complex were built at different times and reflect distinct variations in layout and building type from one to another. The oldest project consists of townhouses and walk-up buildings. One group of walk-ups and one group of townhouses face into bare earth malls. The remaining townhouses face onto the streets. The second housing group is made up of townhouses and three story walk-ups. While most of these stand at different angles and distances from the street, the walk-up units on two blocks face outward, surrounding inner yards. Narrow passageways connect each yard to the sidewalks. Some privately-owned row-houses and a store intersperse the city-owned units. The newest project consists of two components; four 6-story high-rise buildings to the last and a cluster of townhouses to the west. The management office, recreation center, and security headquarters are located in the high-rise section. The townhouses face outward surrounding each block's inner core, which includes backyards, a parking area, and a trash area. The entire complex contains 824 dwelling units, the distribution of which is summarized in Exhibit III-4. Considering each row of townhouses as one building, the complex is comprised of 38 townhouse buildings, 20 walk-up buildings, and 4 high-rises, for a total of 62 different buildings.

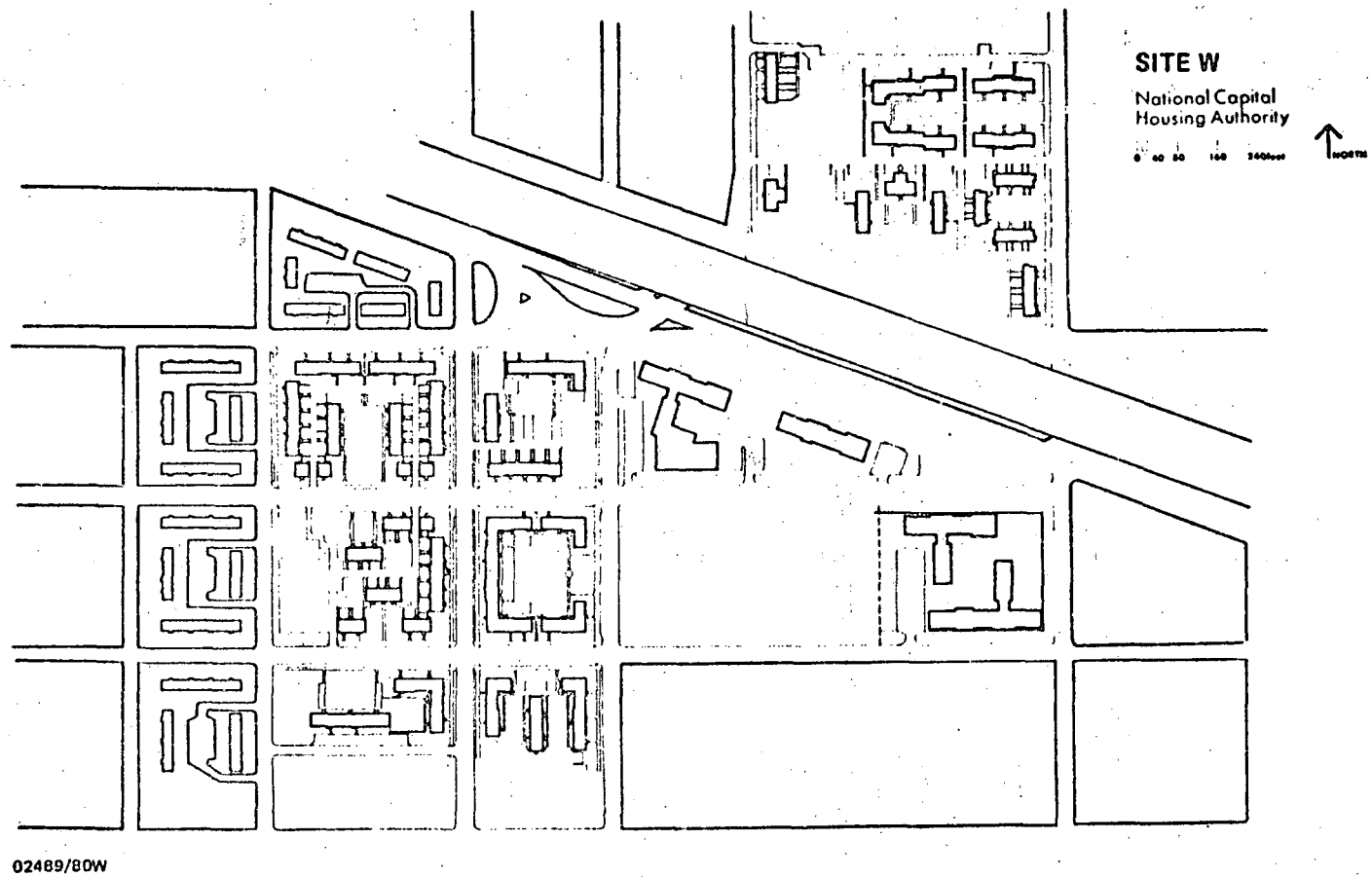

Exhibit III-3. Site W, Washington, D.C.

	1 BR	2 BR	3 BR	4 BR	TOTAL DWELLING UNITS
TOWNHOUSES	--	87	87	25	199
WALK-UPS	168	132	36	--	336
HIGH RISE	43	227	10	--	280
TOTALS	211	446	133	25	824

Exhibit III-4. Distribution of Site W Dwelling Units, By Building Type

Victimization data from a 1976 survey 1/ reveals a Successful Burglary Ratio (SBR) of 19.0% for the entire (Site W) complex. This relatively low SBR, when compared to the high rate of burglary incidents (500 per 1000 households) for the complex, suggests that a high proportion of the burglars were non-professionals. Also various housing authority personnel indicated to the BDM Project Team that drug use was not a severe problem within the Site W complex. These findings are consistent with those of Tom Reppetto, 2/ who suggests that these conditions should reflect a reduced proportion of professional burglars operating in the complex.

The intensity of security surveilence at Site W has recently been increased. In June the housing authority police were granted the power of arrest and were authorized to carry firearms. Recently, additional patrolmen were assigned to the complex. The security force has also recently occupied a new headquarters building located just south of the management office.

3. Site B Project

This housing complex, completed in 1964, is located just west of downtown Baltimore. The project consists of two "superblocks" joined at one corner to form a large "V". (See Exhibit III-5)

The southern border of the complex is formed by a major thoroughfare and a large elevated freeway, currently under construction. The other side of the V has been razed, leaving a desolate expanse of bare earth between Site B and an area of private houses to the northwest. A school and small concrete play area occupy the angle of the V. Two and three story rowhouses interspersed with occasional liquor stores, carry-outs, and other shops stand at the open end of the V and beyond.

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1. Op cit., Brill, W., and Associates, (Site W, Washington, D.C.), April, 1977.

2. Op. cit., Ropetto, T., RESIDENTIAL CRIME, 1974

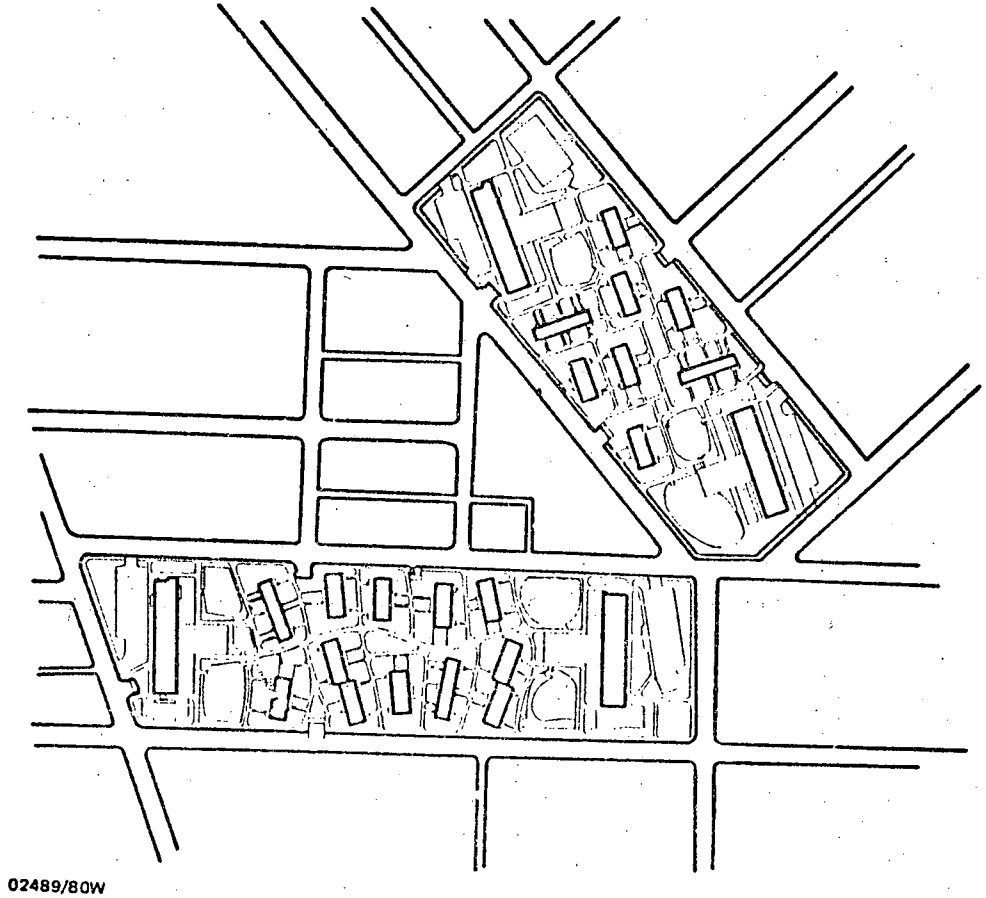


Exhibit III-5. Site B, Baltimore, MD

A fourteen-story high-rise looms at the end of each of the superblocks, towering over the two- and three-story townhouses in between. The entire complex contains 758 dwelling units, the distribution of which is shown in Exhibit III-6. It should be noted that, the majority of the housing units in Site B (658 or 87%) are high-rise apartments. The remaining 100 dwelling units are contained in 18 low-rise buildings distributed through the middle of each block.

The previously victimization survey by Brill and Associates revealed a SBR of 43% in 1976. This relatively high rate of burglary success suggests that a significant proportion of the burglars involved were probably skilled or semi-skilled professionals. The manager of the complex frequently mentioned the high level of drug traffic at the site. As Reppetto's research pointed out, chronic drug users in such areas often turn to burglary to support their habits and, over time tend to become quite skilled. The BDM project team believes, therefore, that this data reflects a relatively high percentage of activity by professional burglars at Site B.

The principal burglary and vandalism activity at Site B is concentrated in the high-rise buildings. Visitors are warned to be cautious in or near these structures. The Housing Authority of Baltimore City has also installed a rather sophisticated security system, including controlled entranceways with 24-hour guard service, remote controlled television monitors on the ground floor corridors, sound monitors on all floors and stairways, and distress calls in the elevators. Problems continue to plague residents of these buildings, however, despite these elaborate efforts.

	EFFICENCY	1 BR	2 BR	3 BR	4 BR	5 BR	TOTAL DWELLING UNITS
TOWNHOUSES	--	--	--	46	44	10	100
HIGH RISE	52	184	238	184	--	--	658
TOTAL	52	184	238	230	44	10	758

Exhibit III-6. Distribution of Site B Dwelling Units, By Building Type

C. THE SAMPLING PROCEDURE

1. Development of Strata

The sampling procedure selected for this study was a stratified random sample. The strata were developed based upon two primary factors: unit size (measured in terms of number of bedrooms) and unit type (high-rise, townhouse, or walk-up). These strata were determined on the basis of prior research performed for and in support of LEAA and HUD. LEAA victimization studies consistently show a positive correlation between burglary rate and unit size when unit size was used as a proxy in developing the strata. Stratification by building type stems from research by Oscar Newman, and others, which identifies building type as a key factor affecting burglary rates.

2. Selection and Notification of Sample

Once the strata were determined, the unit list for each complex (not to be confused with the project roster, which contains names of families occupying the units) was examined and sorted according to the previously described strata. The total sample size was previously determined to be 300 units-180 in Washington and 120 in Baltimore. Past experience in this type of survey indicated that BDM should expect an approximate 10% loss rate, due to refusals, break-offs and vacancies. Therefore, an oversampling of an additional 30 units, 18 in Washington and 12 in Baltimore, was included to assure adequate sample size while accounting for these losses. The sample size for each city was then distributed according to the overall strata for that city, as shown in Exhibits III-7 and III-8.

Once the sample strata were determined, a random selection of households was made, based upon the project lease numbers. The selected lease numbers were then matched with the management rosters to determine the status, i.e., vacant or occupied, of the unit. Additional sample units were drawn to compensate for vacancies.

BUILDING TYPE	ONE BEDROOM	TWO BEDROOM	THREE BEDROOM	FOUR BEDROOM	TOTAL
TOWNHOUSE	*	21	21	6	48
WALK-UP	41	32	9	*	82
HIGH RISE	10	55	3	*	68
TOTAL	51	108	33	6	198

* NO UNITS OF THIS TYPE EXIST

Exhibit III-7. Stratification of Site W Sample

BUILDING TYPE	EFFICIENCY	ONE BEDROOM	TWO BEDROOM	THREE BEDROOM	FOUR BEDROOM	FIVE BEDROOM	TOTAL
TOWNHOUSE	*	*	*	8	7	2	17
HIGH-RISE	9	32	42	32	*	*	115
TOTAL	9	32	42	40	7	2	132

* NO UNITS OF THIS TYPE EXIST

Exhibit III-8. Stratification of Site B Sample

Finally, letters of introduction (See Exhibit III-9) were hand-delivered to each residence in the sample prior to the initial interviewing process. This introduction was provided to inform the residents of their inclusion in the survey sample and to request their cooperation.

D. THE SURVEY PROCEDURE

1. Contact Process

At the beginning of the survey, the Field Supervisor prepared a "correlation list" substituting each respondent's name and address with an identification number on the survey instrument. The correlation list remains the only means by which any survey instrument can be match to the respondent. The list is kept under lock and key under the control of the Program Manager and Program Director, with access limited to those directly involved in the project.

During the course of the survey, interviewers were assigned individual households to be contacted and administered the questionnaire. Once made, these assignments could only be changed by the Field Supervisor. Each contact by the interviewers and its resultant action-appointment, refusal, breakoff, partially complete, or complete-was recorded on a call record sheet (Exhibit III-10). The call record sheet thus allowed the Field Supervisor to track progress for each household contacted in the sample and to act to support the interviewer, where necessary. After three unsuccessful attempts to establish a contact, the interviewer consulted the Field Supervisor concerning subsequent action. In a few cases, units were determined to be vacant and substitute units were randomly selected from among the preselected substitutes in the stratum, in order to maintain proper sample size.

2. Conduct of the Interview

a. Interview Process

Upon establishing contact with the respondent, the interviewer explained the purpose of the study and the respondent's importance to its successful completion. All interviewers carried ID badges similar

7915 Jones Branch Drive, McLean, VA 22102 • (703) 821-5000

THE BDM CORPORATION

Writer's Direct Dial Number:

Dear

The National Bureau of Standards (NBS) and the Department of Housing and Urban Development (HUD) are attempting to determine the types of doors, windows and locks that stop burglars. Your help is vital to this study of housing security.

As part of this study, The BDM Corporation, a research organization, is conducting a crime and vulnerability survey under contract to NBS. This survey will help determine:

1. the extent of burglaries, robberies, and vandalism; and

2. the extent to which people like you are protected from these crimes.

The BDM research team has randomly selected your household from a list of households in your development. We would like you to participate in this survey by allowing us to interview you at your home. At that time, we would also like to photograph some of the locks and other security devices installed in your home. These actions will assist in determining the level of protection provided to residents of public housing.

BDM recognizes your concerns about privacy. We emphasize that any information collected during this study will be protected by BDM's Privacy Protection Procedures. These procedures, which have been reviewed by NBS, provide that:

1) No one except the BDM-NBS research team will ever see the questionnaires or pictures; and

2) The survey, once completed and verified, can never be traced back to a particular household.

Exhibit III-9. Letter of Introduction

You do not have to participate, but your help is badly needed. HUD and NBS must find out what types of doors, locks, and windows will really stop burglars. This study will help them determine the effective hardware and should lead to better protection for everyone, including you.

A BDM interviewer will call on you between June 10 and June 24, 1978. For your security, he/she will present identification. If you are busy or not at home when the interviewer calls, another appointment will be made.

Thank you for your help.

Very truly yours,

THE BDM CORPORATION

Peter M. Ryan
BDM Program Manager

Exhibit III-9. Letter of Introduction (Continued)

DATE	TIME AM PM	TYPE OF CONTACT	ACTION TAKEN	COMMENTS

TYPE OF CONTACT:

T - BY TELEPHONE
P - IN PERSON

ACTION:

A APPOINTMENT MADE
R REFUSAL
B BREAKOFF
PC PARTIALLY COMPLETE
C COMPLETE

Exhibit III-10. Call Record Sheet

to that shown in Exhibit III-11, which included a photograph of the interviewer. Every effort was made to put the respondents at ease, and insulate them as much as possible from distractions such as television, radio or other residents, during the course of the interview.

Each interview lasted between 25 and 45 minutes, depending upon the type of unit, victimization history, and number of persons in the household. The interview concentrated upon three areas: Victimization History, Household Profile, and Dwelling Unit Inspection.

The Victimization History section contained five parts:

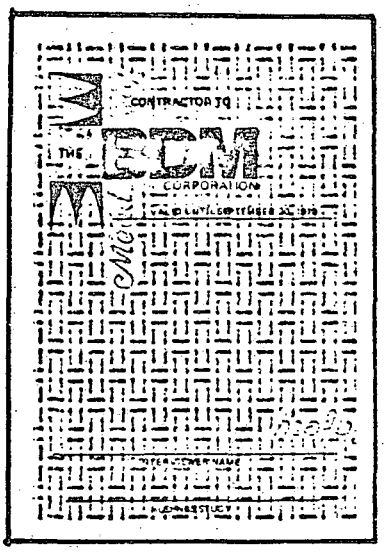
(1) Robbery
(2) Attempted robbery
(3) Burglary
(4) Attempted burglary
(5) Vandalism

A probe was also conducted to reveal any other illegal entries, such as a break-in assault, (none were identified). For each category of crime the interviewer determined the number of break-in incidents, location, attack method, and whether it occurred in daylight or darkness. The second section, Household Profile, ascertained the basic household composition, routine security procedures, and daily behavior patterns. The final section, Dwelling Unit Inspection, determined the types of security hardware presently installed, documented atypical configurations and recorded significant features external to the unit, e.g., front yard, traffic, street lighting, etc. At the close of each interview the respondent was requested to read and sign a form (Exhibit III-12) explaining the purpose of the interview, the authority under which the data were collected, and the manner in which it was to be used. Respondents were then thanked for their participation.

b. Interview Form

1) Organization

A standarized, computer-coded survey form provided the basis for the conduct and documentation of each interview. The survey form, shown in its entirety in Appendix A, reflects the organization



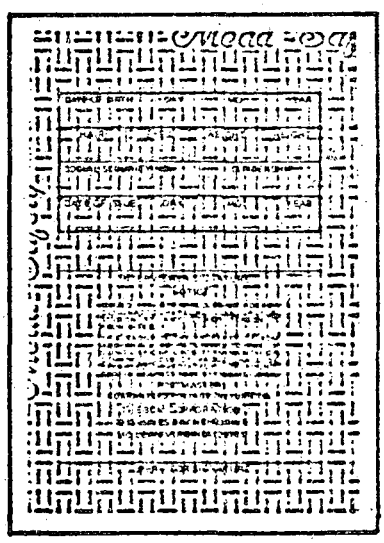


Exhibit III-11. ID Badges Worn

RELEASE FORM

I have willingly taken part in this survey administered by The BDM Corporation. I understand that:

1) This survey is conducted by BDM under contract to the National Bureau of Standards, Center for Building Technology and the Department of Housing and Urban Development
2) It is conducted under authority of the Housing and Urban Development Act of 1970
3) The research is designed to learn what kind of doors, locks, and windows will best protect people from burglaries and other break-ins
4) The researchers will not reveal any personal information about me or my family, which might be harmful or embarrassing
5) I could refuse to answer any question that I did not feel was appropriate and I could stop the interview if I wanted.

_____

SIGNATURE

Exhibit III-12. Release Form

discussed in the preceding section. Each BDM interviewer was trained in the use of the instrument, wth particular attention upon clarity, consistency and completeness in both the conduct and documentation aspects of the survey process.

2) Constraints

Some constraints were identified in the design and utilization of the survey form during the conduct of the study. Although these constraints never seriously threatened the value or usefulness of the results obtained from the survey, they did suggest areas where alternatvie or supplementatl methods may have produced more complete data.

The primary constraints inherent to the survey form which were identified were:

(1) The physical limitations of the instrument prevented the coding of the full range of responses received, resulting in some restriction upon the sensitivity of the survey,

(2) Although, the open-ended design of the instrument facilitated documentation of prior incidents, it did not fix exact time and location to the degree desired, and

(3) Respondants (and to some degree interviewers) appeared to have some difficulty differentiating between burglary and robbery incidents.

3. Data Handling Procedures

Following each interview, the instrument was edited by the interviewer and turned in to the Field Supervisor. When the supervisor identified an inconsistency or unclear entry, he immediately requested clarification from the interviewer. Where necessary, either the interviewer or the supervisor recontacted the respondent to assure the correctness of recorded response. In addition to such checks, the supervisor carried out random and selective interview verifications. Several of each interviewer's assigned households were chosen at random and contacted to verify that an interview had in fact taken place and to assure that certain key data were correct. The Field Supervisor also verified data on any instrument in which responses showed suspicious patterns to assure that an

interview had actually taken place, and that the data in question were correct. All break-offs and refusals were also verified. The supervisor logged the completion of the interview, edited the instrument, packaged it with others and sent the packet to BDM. At BDM, the Data Coordinator logged the receipt of each instrument, scanned each, and coded locational and other data not already coded in the field. The instruments were then key punched at BDM's in-house facility. Following key-punching and key-verification, data from each interview were machine-scanned by a BDM computer program which performed a variety of error checks. This process checked the range, character, logic, and consistency of the data, assuring that each case formed a consistent whole. Any deviations from expected patterns were "flagged", and the entire record printed with the questionably entry marked. When errors were detected, cards were repunched or the data file corrected. These cleaned data were then inputed into an analytical program using the Statistical Package for the Social Sciences (SPSS), which created a fully labeled working data file. Later programs generated a series of tables upon which subsequent analysis was based.

4. Analytic Procedures

BDM's Project Research Analyst and Program Manager conducted extensive analyses of the data, focusing on two major areas:

(1) The nature and condition of security hardware encountered, and

(2) The incidence and concomitants of household victimization.

In examining the hardware data, the BDM analysts focused special attention on equipment which appeared to deviate from that installed by the housing authority. It was inferred that such equipment would generally indicate special concern by the resident, as well as improved unit resistance to attack. Special attention was also given to the condition of the hardware, based upon the assumption that poorly maintained security devices provide less protection from break-ins than well-maintained ones.

Several analyses of break-in data were conducted. Analysts examined in detail the information for each household reporting a victimization during the previous year. Each incident was documented according to building type, unit size, floor, and point of entry or attempted entry.

The analysts further examined each attack according to the nature and extent of damage that occurred. Further analysis of both successful and unsuccessful attempts at entry were conducted to reveal any latent patterns in the data.

The BDM analysts developed and programmed a typology of household structure for use in the analysis. This typology was based on the number of adults in the household, their relationship to the head (HOH), and the presence and age of children in the household. The structural characteristics of those households reporting victimizations were then compared with the remainder of those in the sample.

The analyses controlled variance resulting from project and building type by classifying the households according to type and location as shown below:

Site W		Site B
Area 1 Townhouses	Area 1 Walk-ups	Townhouses
Area 2 Townhouses	Area 2 Walk-ups	High-rises.
Area 3 Townhouses	Area 3 High-rises	

These categories were treated as subfiles for the purpose of the computer analyses.

CHAPTER IV
DEMOGRAPHIC AND BEHAVIOR PATTERNS

A. OVERVIEW

BDM classified the households along two dimensions; the number and relationship of adults in the household and the presence and ages of children in the household. The households were divided into the following groups, irrespective of the presence of children:

(1) Those in which the head of household (HOH) lived without any other resident adult (single HOH) regardless of marital status,

(2) Those in which the spouse of the HOH lived in the unit (married HOH) irrespective of the presence of other adults,

(3) Those in which the HOH shared the unit with at least one other adult who was not a spouse, whether a parent, child, friend, etc.

Along the other dimension, households were divided into the following groups based on the number of resident children (18 years of age and under) irrespective of adults in the household:

(1) Those where no children resided,

(2) Those in which at least one adolescent (between 13 and 18 years) resided, regardless of the presence or age of other children,

(3) Those where only juveniles (12 and under) resided.

The intersection of these two dimensions classifies the households by both their adult and child populations, providing a complete picture of household structure. Special analytic attention focused on households headed by a single adult and on all households with children, since many issues of housing management concern the problems of single HOH and children in dense housing areas.

The BDM researchers also closely examined certain behavior patterns related to security, such as when and whether doors and windows were regularly locked, and at what times during the week and weekend adults were normally home.

The sampled households in Sites W and B shared many common demographic patterns, including:

(1) A large proportion of households (46%) composed of single HOH living with children,

(2) A small proportion of households (9.8%) composed of husband, wife and children,

(3) High levels of concern for security.

These patterns are documented in Exhibit IV-1 and, IV-2 and discussed in detail in the balance of this Chapter. Detailed demographic breakdowns for each site, by building type, are shown in Exhibits B-1 through B-8 of Appendix B.

B. SITE W

While the households of Site W reflected many characteristics typically indicative of a high incidence of crime, (e.g., many HOH without resident spouse) the same households also showed other characteristics typically related to a low incidence of crime (e.g., long-term residence).

Few households in the complex sample could be described as "complete families", i.e., husband, wife, and children. As shown in Exhibit IV-1, only 22 households (12.1%) fit this pattern.

Many of the HOH were isolated. Of the 182 sampled households, 103 (57%) were living without another adult in the household. In 26 (14%) of these households, the HOH lived entirely alone. Most were elderly. Only 29 (16%) of the households included a husband and wife. The remaining 50 households (27%) consisted of the HOH and some other adult. Many of these were mothers living with adult daughters (Exact percentage unknown).

Many children were found being raised by only one parent. Of the 128 households where children resided, only 22 households (17%) were headed by a husband and wife combination. 77 (60%) of these households with children had a single HOH. Several other aspects of household structure stood out:

(1) A very large share of households in the Area 3 townhouses (64%) included adolescents,

RESIDENT CHILDREN INCLUDE:	NONE[1] N (% OF TOTAL)	ADOLESCENTS[2] N (% OF TOTAL)	JUVENILES ONLY[3] N (% OF TOTAL)	TOTAL
HOH IS LIVING:				
ALONE	26 (14.3)	31 (17.0)	46 (25.3)	103 (56.6)
WITH SPOUSE	7 (3.8)	8 (4.4)	14 (7.7)	29 (15.9)
WITH OTHER ADULT(S)	21 (11.5)	16 (8.8)	13 (7.1)	50 (27.5)
TOTAL	54 (29.7)	55 (30.2)	73 (40.1)	182 (100)

1. NO OTHER RESIDENT 18 YEARS OR UNDER
2. AT LEAST ONE OTHER RESIDENT BETWEEN 13 AND 18
3. AT LEAST ONE RESIDENT 12 YEARS OR LESS AND NO RESIDENT ADOLECENTS

Exhibit IV-1. Site W Household Composition

RESIDENT CHILDREN INCLUDE:	NONE[1] N (% OF TOTAL)	ADOLESCENTS[2] N (% OF TOTAL)	JUVENILES ONLY[3] N (% OF TOTAL)	TOTAL
HOH IS LIVING:				
ALONE	26 (21.7)	22 (18.3)	37 (30.8)	85 (70.8)
WITH SPOUSE	1 (.8)	9 (7.5)	0 (0)	10 (8.3)
WITH OTHER ADULT(S)	7 (5.8)	15 (12.5)	3 (2.5)	25 (20.8)
TOTAL	34 (28.3)	46 (38.3)	40 (33.3)	120 (100)

1. NO OTHER RESIDENT 18 YEARS OR UNDER
2. AT LEAST ONE OTHER RESIDENT BETWEEN 13 AND 18
3. AT LEAST ONE RESIDENT 12 YEARS OR LESS AND NO RESIDENT ADOLECENTS

Exhibit IV-2. Site B Household Composition

(2) A rather large proportion of households in the Area 1 walk-ups (28%) consisted of an adult living completely alone,

(3) Less than 4% of the households in the Area 1 walk-ups contained a spouse, and

(4) A large proportion of households in the Area 2 walk-ups (36%) consisted of a single adult living with children under 12.

Details of these data are presented in Appendix B.

Site W households tended to be made up of relatively long-term residents, averaging 6.8 years of residence at their current address. Only six households (3%) had lived in Capper Dwellings for less than a year, while eight (4%) had lived there for twenty years or more. The 182 units housed a total of 561 residents, for an average density of 3.1 persons per unit or about 1.6 per bedroom.

The type of security precautions taken by the sampled households varied among building types, apparently reflecting the resident's estimate of likely points of entry. For example, only 5% of the high-rise dwellers locked their windows at night, while 30% of those living in walk-ups and 84% of those living in townhouses did so. These figures reflect the inaccessibility of the high-rise windows and the relative inaccessibility of walk-up windows as contrasted to the easy access to townhouse windows, especially at ground level.

Behavior patterns related to locking the dwelling's front door also varied with building type. In the high-rises and walk-ups 98%, of the residents locked the front door when at home, but only 77% of the townhouse dwellers did so.

Most of the households in the Site W sample indicated that an adult was normally in the home during each of the times mentioned in the survey, i.e., 9-5 on weekdays, 9-5 Saturdays, 9-5 Sundays, and in the evenings. There was, however, some variation in these patterns between building types. A relatively large portion of townhouse dwellers had full-time jobs, leaving their houses vacant during the weekdays and occupied on weekends. In the three townhouse areas, 31 households (70%) indicated that an adult was at home from 9-5 on weekdays, while 43 (98% of 44) indicated

that adults were home during the day on Saturdays and Sundays. In the walk-ups, 72% of the households had adults at home during the weekdays, 85% on Saturdays and 81% on Sundays. In the high-rises, 81% of the units had adults home during the weekdays and 85% and 81% on Saturdays and Sundays, respectively. The differences between the patterns for townhouses and highrises are significant at the $\alpha < .05$ level.

C. SITE B

While many of the households of Site B exhibited characteristics generally associated with a high incidence of crime, e.g., HOH without a resident spouse, some of the same households also exhibited characteristics associated with a low incidence of crime, e.g., long-term residence. Few households consisted of a complete traditional family of a husband, wife and children. As can be seen in Exhibit IV-2, only 10 of the 120 sampled households (8%) were of this type.

Many of the HOH are isolated. Of the 120 sampled households, 85 (71%) were living without another adult in the household. In 26 (22%) of these households, the HOH lived alone. Most of these were elderly. Only 10 (8%) of the households included a husband and wife. The remaining 25 households (21%) consisted of the HOH and some other adult.

Of the 86 sampled households where children resided, only 9 (10%) were headed by a husband and wife combination. 59 of these households with children (67%) had a single HOH. The remaining 23% were headed by a person living with another adult. A review of the questionnaires revealed that most of these "other adults" were grown daughters living with their mother (exact % unknown).

BDM's detailed household analysis revealed other salient patterns:

(1) A very high proportion of the households (71%) were headed by single adults,

(2) A significant large proportion of these single adults (22%) lived completely alone, and

(3) Of the 16 townhouse households, 8 (50%) had adolescent residents, while only 31.7% of highrise households contained adolescents.

Residents of Site B also appeared to experience relatively long tenancy and little crowding. The households tended to be made up of relatively long-term residents, averaging 6.3 years of residence at their current address. Only six households (5%) had lived in the complex for less than a year and eleven (9.2%) had lived there for fifteen years or more. The 120 households included a total of 398 residents, for an average density of 3.3 persons per unit or about 1.5 per bedroom.

The type of security precautions taken by the sampled households varied between the high-rises and the townhouses, with their ground and second floor windows, reflecting residents' recognition of likely POE. For example, only 40% of the high-rise dwellers locked their windows at night, while 94% of those living in townhouses did so. When leaving their homes for a short time 100% of the townhouse residents, but only 52% of the high-rise dwellers locked their windows. 96% of the high-rise householders locked their front door while at home, while 100% of the townhouse residents did so (not a significant difference).

Most (85%) of the households in the Site B sample indicated that an adult was normally in the home during each of the times mentioned in the survey, i.e., 9-5 on weekdays, 9-5 Saturdays, 9-5 Sundays, and in the evenings. Little variation occurred between building types, with the only significant difference being that fewer high-rise households (79%) than townhouse households (100%) indicated that an adult was usually home during the day Sundays ($\alpha < .05$).

CHAPTER V
PHYSICAL CHARACTERISTICS

A. OVERVIEW

The security hardware in the two housing projects studied was for the most part in good condition. However, given the high levels of criminal activity perceived by both residents and management, it was significant to find that:

(1) A considerable number of doors and windows were permitted to go without functioning locks, and

(2) Very little security hardware had been added by the residents.

Generally, Site B units had superior door and window protection to those in Site W. This was primarily the result of the installation of solid core doors and improved locking devises in the Site B highrises.

B. SITE W

The Site W townhouses typically had both front and rear doors, while neither the walk-up or high-rises units had rear doors of any sort. The doors of the townhouses were generally constructed of wood panels with an aluminum screen door. Most of the doors were set in wooden frames, although some had metal frames. The walk-ups and highrises had metal doors which were in good overall condition. The door components were also in generally good condition with the exception that in the Area 1 and 3 Townhouses 50 percent of the frames and door materials were rated in poor condition. Front doors and back doors were generally of the same material and in comparable condition.

Vertical deadbolts installed by the housing authority were the most common front door protection device. Most of the doors also had peepholes and chain "interviewers" on them, some of which of the latter were the locking type.

Locks were generally found to be in operable condition. Only 43 (8.6%) were listed as in poor condition, i.e., loose enough to make a break-in attempt more likely to succeed.

Vertical deadbolts, also installed by the housing authority, were also the most common rear door protection in the townhouses. The rear townhouse doors had glass windows. The most common security items installed by the residents themselves were chains.

The locks on the rear townhouse doors were also generally in at least operable condition. Only 11 (8%) were listed as in poor condition, i.e., loose enough to make a break-in attempt more likely to succeed.

The 180 surveyed units included a total of 1280 windows. Approximately 50 percent of the windows were listed as inaccessible, primarily reflecting the proportion of high-rise units in the sample. Of the remaining group, consisting primarily of windows in the townhouse and walk-up units, 26 percent were judged accessible and 33 percent accessible with effort. Nearly all (99%) of the windows were glazed with glass, and none had plastic glazing.

None of the sampled units had bars or metal grillwork on the windows. Nearly all (1260, or 98%) of the windows were found to have locks on them, with most (1099, or 87%) of these locks in working order. Clamshell thumblatches were the principal window locks, being found on 914 (72%) of the windows. Very few locks of other types had been installed. Only 19 (1.5%) of the windows had locks other than those originally installed. The window locks were generally at least adequate. Only 89 (7%) were inoperable, while 101 (8.2%) were in poor condition, i.e., so loose or weakened as to be easily broken through. When locks failed to operate, it generally resulted from windows not closing properly or lock parts breaking. In a few cases, clamshell locks had simply broken from the frame. Where locks were broken or missing, residents often used nails as locks or inserted a prop, such as a broomstick, to keep the window from being pushed open.

1258 (98%) of the windows surveyed had drawn shades or closed drapes. Generally, it would be difficult for someone to see the interior of a unit, even if the shades were open. However, for 107 (59%) of the first and

second story windows in the sample, the furniture in the rooms could be seen by someone standing nearby at ground level. 34 (19%) required that someone stand at the window in order to see the interior. The remaining 37 (22%) could not be seen into at all from the ground outside.

C. SITE B

Site B consists of two and three story townhouses and high-rises. Most of the townhouses are built back-to-back and have no door other than the front one, although a few do have balcony doors. The high-rises are of fourteen stories each and have both front and rear doors, the rear door providing access to a narrow concrete balcony. These rear doors each have a small single glass window. In addition, each unit has windows which face out onto the balcony.

The 120 surveyed units contained 224 doors, of which 75% were in good condition with many in excellent condition. Door components, frames, hinges, latchs and knobs were also in adequate to good condition, with only 18 (1.7%) in poor condition. None of the doors in the sample were missing any of their main structural components.

Door locks and other security devices were generally found to be in adequate to good condition. As at Site W, vertical deadbolts were found on virtually all doors, both front and back. All of these devises were found to be in at least operable condition.

The sampled units included a total of 746 windows, Of the 399 windows in the high-rises, only 29 (5%) were judged accessible from the ground. An additional 160 (27%) were accessible only with effort. These data reflect the highrise balcony configuration, which permits movement along the outside wall horizontally or even vertically, with considerable effort and risk. On the other hand, 53% of the townhouse windows were directly accessible with an additional 21% accessible with effort.

The vast majority of windows (735 or 99%) were glazed with glass. The 11 remaining windows (1%) were covered with other material such as wood or cardboard. All frames were aluminum. Clamshell thumblatches were the

principal locks, being found on 603 (82%) of the windows, while other makeshift devices (e.g., plungers, broom handle props, etc.) were found on 83 (11%). The remaining 54 (7%) windows had no locking device of any sort.

647 or 94.5% of the locks were found to be in at least operable condition, while the remaining 39 (5.5%) were totally inoperable. 152 (98.7%) of the townhouse windows had working locks. These statistics may well reflect a perceived greater vulnerability of the townhouses and consequently greater attention to the window locks.

Generally, it was very difficult to see directly into the interiors of the sampled units even if the shades were open. 115 (98%) of the sampled units interiors were not visible at all from the outside. Only 2 (2%) of the units' interiors could be seen easily, and both of these units were on the first floor.

CHAPTER VI
HOUSEHOLDS' EXPERIENCE OF CRIME

A. INTRODUCTION

BDM conducted extensive analyses of the patterns of household crime in the two public housing complexes. Particular attention was given to likely "explanatory" independent variables such as unit size, building type, height above grade, household size, household structure, behavior patterns, hardware condition and additional security devices. Points and methods of entry were documented and examined in relation to other factors related to break-in success.

The specific crimes upon which the survey focused were:

(1) Household robbery--any effort to take money or property from the dwelling by the use of force or threats upon another individual; may be either successful (SR) or unsuccessful (UR)

(2) Burglary--any effort to take money or property from the dwelling which does not involve personal confrontation; may also be either successful (SB) or unsuccessful (UB)

(3) Vandalism (V)--any incident in which damage is done to the dwelling unit or residents' property which does not appear to have been an attempt to break into the unit.

As shown in Chapter III, BDM has defined the term "break-in" as the sum of robberies and burglaries. Key statistics in the analysis were the Successful Burglary Ratio (SBR) and the Successful Break-In Ratio (SBIR), the computation of which are also shown in Chapter III. BDM's analysis of vandalism was limited to a review of each incident to determin whether it should be reclassified as a burglary, based upon the respondent's description and interviewer's comments.

BDM analysts conducted extensive "Chi^2" and "t" tests to establish whether differences found in the data were statistically significant.

"Alpha" levels were stated when less than .10, reflecting the probability that the findings could have resulted from normal, random, or chance distribution. Thus, $\alpha < .10$ means that the chances that the stated findings could occur by chance distribution are less than 10 in 100.

B. SITE W

Households in Site W reported a total of 29 incidents of household crime between June 1977 and June 1978. These included:

0 Successful robberies
1 Unsuccessful robbery
10 Successful burglaries (of 10 different units)
10 Unsuccessful burglaries (of 7 different units)
8 Vandalisms (of 6 different units)

Complete Site W sample data is provided in Exhibit VI-1. The compiled crime data and computed break-in rates are shown in Exhibit VI-2.

	SUCCESSFUL BREAK-INS	UNSUCCESSFUL BREAK-INS	TOTAL BREAK-IN INCIDENTS	VANDALISMS
FREQUENCY	10	11	21	8
RATE PER 100 HOUSEHOLDS	5.5	6.0	11.5	4.5

Exhibit VI-2. Site W Hosehold Crime Frequencies and Rates

The 29 reported incidents involved 22 different units. Six (27%) of the 22 units reported multiple incidents (total = 13), which accounted for 45% of all the incidents reported.

BDM analysts further synthecized these crime data according to type of building in which the victimized household was located. This breakdown indicates that burglary was more frequent in walk-ups than in other types of units, and that vandalism was most frequent in townhouses.

SITE W

UNIT I.D. NUMBER	BUILDING TYPE[1]	FLOOR	TYPE OF INCIDENT[2]	POINT OF ENTRY	METHOD AND/OR DAMAGE
1007	WU	1	V	NOT APPLICABLE (N/A)	REAR WINDOW FRAME AND GLASS BROKEN OUT
1089	WU	2	V	N/A	FRONT DOOR SCRATCHED AND DENTED
1181	WU	3	V	N/A	FRONT DOOR DAMAGED
1251	WU	1	V	N/A	BEDROOM WINDOW BROKEN
1251	WU	1	V	N/A	BEDROOM WINDOW BROKEN
1251	WU	1	UB	REAR WINDOW	ENTRY THROUGH OPEN WINDOW
1147	WU	1	UB	FRONT DOOR	DOOR KNOB JIMMIED
1257	WU	1	UB	WINDOW	SCREEN RAISED, WINDOW FORCED
1470	WU	2	UB	FRONT DOOR	ATTEMPT TO FORCE LOCK
1470	WU	2	UB	FRONT DOOR	ATTEMPT TO FORCE LOCK
1558	WU	1	UB	LIVINGROOM WINDOW	WINDOW FORCED OPEN
1558	WU	1	UB	BATHROOM WINDOW	WINDOW FORCED OPEN
1082	WU	2	SB	FRONT DOOR	NO VISIBLE FORCE-KEY SUSPECTED
1294	WU	2	SB	FRONT DOOR	NO VISIBLE FORCE-KEY SUSPECTED
1310	WU	3	SB	FRONT DOOR	KEY
1318	WU	1	SB	FRONT DOOR	KNOB BROKEN OFF
1373	WU	3	SB	FRONT DOOR	LOCK BROKEN OFF
1533	WU	1	SB	BEDROOM WINDOW	WINDOW PRIED UP
1404	WU	1	SB	WINDOW	WINDOW BROKEN, THEN UNLOCKED
1404	WU	1	UR	FRONT WINDOW	SCREEN WAS UNLOCKED
1484	TH	N/S	V	N/A	REAR WINDOW GLASS BROKEN
1445	TH	N/S	V	N/A	WINDOW CRACKED
1445	TH	N/S	V	N/A	SIDEWALK MARKED
1614	TH	N/S	UB	WINDOW	WINDOW PUSHED UP
1614	TH	N/S	UB	BACK DOOR	N/S
1656	TH	1	UB	FRONT DOOR	LOCK JIMMIED
1608	TH	1	SB	REAR WINDOW	WINDOW PUSHED UP
1866	HR	3	SB	DOOR	APT. ENTERED WHILE BEING WORKED ON
1946	HR	4	SB	DOOR	JIMMIED LOCK

1. BUILDING TYPE:
   - HR = HIGH RISE
   - TH = TOWN HOUSE
   - WU = WALK UP

2. TYPE OF INCIDENT:
   - V = VANDALISM
   - UB = UNSUCCESSFUL BURGLARY
   - SB = SUCCESSFUL BURGLARY
   - UR = UNSUCCESSFUL ROBBERY
   - SR = SUCCESSFUL ROBBERY

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Exhibit VI-1. Base Crime Data, Site W, Washington, D.C.

	SUCCESSFUL ROBBERY	UNSUCCESSFUL ROBBERY	SUCCESSFUL BURGLARY	UNSUCCESSFUL BURGLARY	VANDALISM
TOWNHOUSES	0	0	1	3	3
WALK-UPS	0	1	7	7	5
HIGH-RISES	0	0	2	0	0
TOTAL	0	1	10	10	8

Exhibit VI-3. Site W Household Crimes by Building Type

Exhibit VI-4 provides the calculated Successful Burglary Ratio (SBR) and Successful Break-In Ratio (SBIR) by building type, for Site W. As can be seen from the table, the composite SBR and SBIR for Site W were found to be 50% and 47.6% respectively.

	WALK-UPS	TOWNHOUSE	HIGH-RISE	COMPOSITE
SBR	50%	25%	100%	50%
SBIR	46.6%	25%	100%	47 6%

Exhibit VI-4. Successful Burglary Ratio (SBR) and Successful Break-In Ratio (SBIR) by Building Type for Site W

Detailed study of points of entry and types of damage suggested that attempts at the doors were more successful than those at windows. Seven of the ten successful break-ins were directed at doors, while only three of the nine break-ins involving windows were successful. Of the seven successful door break-ins, four resulted in no damage, while of the unsuccessful attempted door break-ins only one resulted in no visible damage. These

data suggest that either doors may have been left open or keys utilized to gain entry.

Exhibit VI-5 reveals that walk-ups sustained significantly more break-in incidents than would have been predicted based on the distribution of units by type. On the other hand, high-rises experienced fewer break-in incidents than would have been expected ($\alpha < .01$).

	FREQUENCY	
UNIT TYPE	ACTUAL	EXPECTED
TOWNHOUSES	4	4.8
WALK-UPS	15	8.7
HIGH-RISE	2	6.5

$$Chi^2 = 6.503$$
$$\alpha < .05$$

Exhibit VI-5. Actual Versus Expected Break-Ins, By Building Type

As shown in Exhibit VI-4, the SBR and SBIR also varied between building types. The identical SBR's and SBIR's for both the townhouses and high-rise units reflects that no robbery incidents were contained in the sample for either of these type units (therefore, # burglary incidents = # break-in incidents). Also the SBR (and SBIR) of 100% for the high-rise units reflects that both reported break-in incidents succeeded.

Exhibit VI-6 provides a detailed POE distribution for Site W break-ins. Doors were the most frequently encountered POE (57.2%) followed by windows at 42.8%. Detailed examination of the break-in incidents in the Site W walk-ups revealed that most (9 out of 15) had a first floor POE. Of the remaining six break-ins, four took place on the second floor and two on the third floor. Most of the first floor incidents (7 out of 9) were directed against windows, while all 6 of the above-grade incidents were against doors. Five of the seven window attacks failed, while only 3 of the eight door attacks failed. The above-grade door incidents were the most successful with four of the six attempts succeeding. It is also

noteworthy that windows are most visible to passersby, some ground floor doors are visible, but virtually none of the above-grade doors can be seen by passersby.

Number (% of Total)				
	Walk-Ups	Townhouses	Highrises	Total
Front Door	8 (38.3)	(4.7)	2 (9.5)	11 (52.5)
Rear Door	0 (0)*	1 (4.7)	0 (0)*	1 (4.7)
Window	7 (33.3)	2 (9.5)	0 (0)	9 (42.8)
Total	15 (71.6)	4 (18.9)	2 (9.5)	21 (100)

* No rear door on these units

Exhibit VI-6. Site W Break-In Points of Entry (POE)

Victimized households did not differ significantly from unvictimized households in length of residence, size of household, or number of bedrooms in unit. Also, no significant difference was found relative to HOH characteristics or household composition for victimized versus non-victimized units.

C. SITE B

Households in the Site B sample reported the occurance of a total of 46 incidents of household crime between June 1977 and June 1978. These included:

10 Successful robberies (of 7 different units)
3 Unsuccessful robberies (of 1 unit)
19 Successful burglaries (of 12 different units)
3 Unsuccessful burglaries (of 3 different units)
11 Vandalisms (of 7 different units).

Complete sample data for Site B is provided in Exhibit VI-7. BDM again compiled the reported data and computed break-in rates, which are presented in Exhibit VI-8.

SITE B

UNIT I.D. NUMBER	BUILDING TYPE[1]	FLOOR	TYPE OF INCIDENT[2]	POINT OF ENTRY	METHOD AND/OR DAMAGE
2551	TH	1	SB	FRONT DOOR	NO FORCE EVIDENT-KEY SUSPECTED
2551	TH	1	SB	FRONT DOOR	NO FORCE EVIDENT-KEY SUSPECTED
2551	TH	1	UR	WINDOW	GLASS BROKEN
2551	TH	1	UR	WINDOW	GLASS BROKEN
2551	TH	1	UR	DOOR	HOOK THROUGH MAIL SLOT GRASPING LATCH
2551	TH	1	SR	FRONT WINDOW	GLASS BROKEN
2551	TH	1	SR	FRONT WINDOW	GLASS BROKEN
2551	TH	1	SR	FRONT WINDOW	GLASS BROKEN
2575	TH	1	SR	FRONT WINDOW	BROKE WINDOW-OPENED DOOR FROM INSIDE
2477	HR	10	V	NOT APPLICABLE (N/A)	WRITING ON FRONT DOOR
2477	HR	10	V	N/A	SCRATCHES ON FRONT DOOR
2521	HR	13	V	N/A	WRITING ON WALL
2521	HR	13	V	N/A	WRITING ON WALL
2538	HR	14	V	N/A	GUM IN FRONT DOOR LOCK
2723	HR	12	V	N/A	FRONT DOOR SET ON FIRE
2524	HR	13	V	N/A	WRITING ON WALL
2524	HR	13	V	N/A	WRITING ON FRONT DOOR
2524	HR	13	UB	FRONT DOOR	JIMMIED LOCK
2507	HR	10	V	N/A	WRITING ON WALL ADJACENT TO DOOR
2507	HR	10	SB	FRONT DOOR	NOT STATED (N/S)
2512	HR	12	V	N/A	LIGHTER FLUID SQUIRTED UNDER DOOR AND LIT
2512	HR	12	V	N/A	LIGHTER FLUID SQUIRTED UNDER DOOR AND LIT
2512	HR	12	SB	FRONT DOOR	DOOR LEFT OPEN
2384	HR	3	UB	FRONT DOOR	DOOR PRIED OPEN
2621	HR	3	UB	FRONT DOOR	JIMMIED DOOR
2020	HR	14	SB	BALCONY WINDOW	WINDOW LEFT OPEN
2213	HR	2	SB	PORCH DOOR	N/S
2213	HR	2	SB	PORCH DOOR	N/S
2213	HR	2	SB	PORCH DOOR	N/S
2260	HR	6	SB	FRONT DOOR	LOCK JIMMIED WITH CROWBAR
2264	HR	7	SB	FRONT DOOR	LOCK BROKEN OFF
2328	HR	12	SB	BALCONY WINDOW	N/S
2454	HR	8	SB	FRONT DOOR	N/S
2454	HR	8	SB	FRONT DOOR	N/S
2239	HR	5	SB	FRONT DOOR	DOOR BROKEN OUT
2239	HR	5	SB	NOT STATED (N/S)	N/S
2152	HR	14	SB	FRONT DOOR	DOOR LEFT OPEN
2152	HR	14	SR	FRONT DOOR	KEY
2152	HR	14	SR	FRONT DOOR	KEY
2214	HR	2	SB	PORCH DOOR	N/S
2214	HR	2	SB	FRONT DOOR	N/S
2214	HR	2	SR	FRONT DOOR	FORCED WAY INTO UNIT
2214	HR	2	SR	FRONT DOOR	THREATENED WITH KNIFE
2256	HR	6	SR	FRONT DOOR	THREATENED WITH GUN
2122	HR	12	SR	FRONT DOOR	CONNED OCCUPANT, THEN FORCED WAY IN
2212	HR	2	SR	FRONT DOOR	CONNED WAY INTO UNIT

1. BUILDING TYPE:
   - HR = HIGH RISE
   - TH = TOWN HOUSE
   - WU = WALK UP

2. TYPE OF INCIDENT:
   - V = VANDALISM
   - UB = UNSUCCESSFUL BURGLARY
   - SB = SUCCESSFUL BURGLARY
   - UR = UNSUCCESSFUL ROBBERY
   - SR = SUCCESSFUL ROBBERY

02489/80W

Exhibit VI-7. Base Crime Data, Site B, Baltimore, MD.

	SUCCESSFUL BREAK-INS	UNSUCCESSFUL BREAK-INS	TOTAL BREAK-IN INCIDENTS	VANDALISM
FREQUENCY	29	6	35	11
RATE PER 100 HOUSEHOLDS	24.2	5.6	29.2	9.2

Exhibit VI-8. Site B Household Crime Frequencies and Rates

The 46 reported incidents involved 23 different units. Eleven (48%) of the 23 units reported multiple incidents (total = 33), which accounted for 72% of all incidents reported. BDM analysts further synthecized the crime data according to the type of building in which the victimized households were located. This breakdown is shown in Exhibit VI-9.

	SUCCESSFUL ROBBERY	UNSUCCESSFUL ROBBERY	SUCCESSFUL BURGLARY	UNSUCCESSFUL BURGLARY	VANDALISM
TOWNHOUSES	4	3	2	0	0
HIGH-RISES	6	0	17	3	11
TOTAL	10	3	19	3	11

Exhibit VI-9. Site B Household Crimes by Building Type

Exhibit VI-10 shows the calculated SBR and SBIR by building type for Site B. The composite SBR and SBIR for the complex are both very high (86.4% and 82.9% respectively).

Of the total of 35 break-ins recorded, 9(25.7%) occurred in the townhouses, somewhat more than might have been expected by chance ($\alpha < .10$). The high-rises showed a somewhat higher SBIR (88.5%) than did the townhouses (66.7%), although the difference was not statistically significant.

	BUILDING TYPE		
	TOWNHOUSE	HIGHRISE	COMPOSITE
SBR	100%	84.2%	86.4%
SBIR	66.7%	88.5%	82.9%

Exhibit VI-10. Successful Burglary Ratio (SBR) and Successful Break-In Ratio (SBIR) by Building Type for Site B.

The high-rises reported a very high level of vandalism for this type of building (see Exhibit VI-7). The survey information did not reveal a definitive reason for this, but conversations with management and residents revealed that adolescents often "hung-out" in the halls and that residents felt little sense of control over these areas. By contrast, the townhouses which reported no vandalism, have clearly defined and well-maintained yards.

Exhibit VI-11 provides the POE pattern associated with Site B break-ins. The door was again by far the most frequently used POE (82.3%), followed by windows at only 17.7%. Detailed examination of the data on location and points of entry (POE) revealed several other patterns for the break-in incidents. Over 60% of the successful high-rise break-ins occurred in one high-rise building, although it contained only 33% of the high-rise households interviewed (a F.02). The plaza in front of this building is reputed to be a center for drug traffic, some of which is said to spill over into the building. It may be significant that BDM interviewers experienced the most refusals from residents of this building.

Number (% of Total)			
	Townhouses	Highrises	Total
Front Door	3 (6.6)	31 (69.1)	34 (75.7)
Rear Door	0 (0)	3 (6.6)*	3 (6.6)
Window	6 (13.3)	2 (4.4)	8 (17.7)
Total	9 (19.9)	36 (80.1)	45 (100)

* Porch Door on 2nd Floor

Exhibit VI-11. Site B Break-In Points of Entry (POE)

Analysis of POEs disclosed that roughly two-thirds of the burglary incidents were directed against the front doors of the units. The rear (balcony) doors of second floor units in high-rises were used as a point of entry four times, the most frequent POE location of any when vertical location is considered. Balcony doors were the POE a total of six times, but balcony windows were attacked only twice.

Of the successful burglaries, 14 resulted in no discernible damage ($\alpha < .01$), suggesting that the POE was unlocked, that the burglar had a key, or that the burglar was an expert lock pick. In two incidents respondents knew that keys had been used to gain entry and in another the respondent stated that the door had been left unlocked.

Of the 13 recorded robbery incidents, 7 had doors as the POE. Of the 10 successful robberies, 6 involved penetration at the door. In most of these robberies, the security hardware was not affected in any way, the robbers gaining entry either by pushing a returning resident into the apartment, by displaying a weapon, or by subterfuge.

Neither size of dwelling unit, length of residence, nor size of household were found to have any distinct relationship to the experience of household crime at Site B. Also, no significant difference was found between HOH characteristics or household composition of victimized versus non-victimization units.

CHAPTER VII
CONCLUSIONS

While the primary purpose of this report is to provide baseline information for interpreting later findings, BDM has observed some patterns in the data which may also assist in later analyses.

The incidence of household crime in both complexes has declined sharply over the past two to three years. As shown in Victimization, Fear of Crime and Altered Behavior 1/ residents in Site B experienced roughly 59 burglary attempts per 100 households between January 1975 and January 1976. By comparison, BDM's survey covering the period of July 1977 to July 1978, revealed that burglary attempts occurred at a rate of only about 18 per 100 households. Site W experienced an even sharper decline, from 50 burglary attempts per 100 households in 1975 to less than 11 per 100 households for the period July 1977 to July 1978. Increased efforts to control criminal activity by the local housing authorities may account for much of this reduction. Both had installed new unit security hardware and have modified their security patrol systems during the interim period. At Site W, Housing Police headquarters were constructed on the grounds. At Site B, the operation of the controlled entrances was enhanced by several measures, including maintaining a file of resident's photos in the security booths. In addition, efforts at tenant mobilization were increased in both projects, through an extensive publicity campaign, and organization of tenants councils.

Other external factors have probably also had some effect. Police patrol patterns appear to have been altered in both areas since 1975-76. Also, crime rates nationally have declined somewhat. Some experts ascribe this to a gradual drop in the proportion of the population under thirty years of age - the group responsible for most "street crime". Numerous

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1. Op. cit., Brill, W., and Associates, (Site B, Baltimore, MD.), April, 1977.

other factors, at present unknown, may also have contributed to the observed crime reductions.

In contrasting the findings from the two complexes (see Exhibit VII-1), BDM found that Site B showed both a higher rate of attack and a higher rate of attack success than Site W. (Statistical comparison is not experimentally justified). In Site B, criminals attempted to enter households at a rate of 28.3 per 100 households while in at Site W the rate was 11.5 per 100 households. Break-in attempts at Site B were almost twice as successful (SBIR=86.4%) as attempts at Site W (SBIR=47.6%). Site B also experienced a far higher ratio of household robbery than did Site W. In Site B there were 22 burglary attempts to 12 robbery attempts and in Site W 20 burglary attempts to only 1 robbery attempt. The convergence of these data suggests that Site B is prey to criminals who are more numerous, more skilled, and more aggressive than those at Site W. This coincides with statements made by Site B personnel about their criminal population.

	Robbery Rate/100HH	Burglary Rate/100HH	Break-In Rate/100HH	SBIR
Site B	10.0	18.3	28.3	.864
Site W	0.5	11.0	11.5	.476

Exhibit VII-1. Summary of Break-In Data from the Two Housing Sites

Each complex revealed unique patterns of criminal activity. At Site W the walk-ups experienced a disproportionate share of the break-in attempts, while the townhouses had far fewer than would have been predicted.

Although Site W walk-ups were attacked and penetrated more frequently than other housing types, the condition of their locks, doors, and windows was no different than in any other part of the complex. The high rate of attack probably relates to accessibility and visibility. A large proportion of the windows in the walk-ups are quite accessible. In addition, many of these are partially or totally hidden from the view of passersby, as a result of the site layout. Finally, the dark, narrow, and twisting

stairs of the walk-ups discourage casual traffic and further decrease visibility. The combination of these factors offers a plausible explanation of the more concentrated attacks against these units.

Were burglars to select their targets accoring to the physical vulnerability of the hardware, one would expect a concentration of attempts against the townhouses of Site W, which had a high percentage of doors whose condition was described as "poor". Yet these units remained virtually untouched. Since townhouses were victimized so little compared to the other building types, BDM examined factors which might provide an explanation for this apparent discrepency. Two significant statistical differences emerged from this analysis.

More households in townhouses than other types had more than one resident adult. As shown in Exhibit VII-2, nearly two-thirds of the townhouses had additional adults as residents while only about one-third of the households in the walk-ups and high-rises had another adult, in addition to the HOH, residing in the unit. This increased surveillance capability may provide more protection to the dwelling and thus reduce burglary attempts.

Units With No Other	Townhouse N (%)	Walk-up N (%)	High-rises N (%)	Total N (%)
adult living in household with HOH	17 (38.6)	48 (60.8)	38 (64.4)	103 (56.6)
Other adults live with HOH	27 (61.4)	31 (39.2)	21 (35.6)	79 (44.4)
Total	44 (100.0)	79 (100.0)	59 (100.0)	182

$X^2 = 7.800$

$\alpha < .10$

Exhibit VII-2. Household Composition

The somewhat higher frequency of burglary attempts against Site B townhouses may reflect improved effectiveness of the high-rise security system. The 1976 study by Brill and Associates found no significant

difference between the two building types, however, since that time, the entrance control has been upgraded. Clearly, the entire housing environment has an important influence on the effectiveness of any particular security measure, and no single measure is likely to be effective by itself.

APPENDIX A

APPENDIX A

Interviewer Name:

Interview Number

OMB No.

Expires

A

VICTIMIZATION SURVLY AND
DWELLING UNIT INSPECTION

HUD/NBS DEMONSTRATION
DOOR AND WINDOW SECURITY

BURGLARY ATTACK DATA COLLECTION

Unit ID Number

Sponsoring Agency:	Office of Community Design Research U.S. Department of Housing and Urban Development Washington, D.C.
Research Organization:	Center for Building Technology National Bureau of Standards U.S. Department of Commerce Washington, D.C.
Field Administrator:	BDM Corporation/ McLean, Virginia

SITE: W B

RESPONDENT:

ADDRESS:

Street No.

Street Name

Apt. No.

TELEPHONE:

RECORD ALL ATTEMPTED CONTACT

DATE	TIME AM PM	TYPE OF CONTACT T P	ACTION TAKEN ARBPC	COMMENTS

TYPE OF CONTACT:
T - BY TELEPHONE
P - IN PERSON

ACTION
A APPOINTMENT MADE
R REFUSAL
B BREAKOFF
P PARTIALLY COMPLETE
C COMPLETE

ENTER NUMBER OF INCIPENTS REPORTED

R	AR	B	AB	V

COL #

COPY UNIT ID NUMBER [ ] 1-4

CARD NUMBER [1] 5

THE OFFICE WILL ENTER:

	INTERVIEW ID NUMBER	6
	SITE	7
	BLOCK	8, 9
	BLOCK FACE	10
TH = 1 HR = 2 WU = 3	BUILDING TYPE	11
	MODEL TYPE	12
	FLOOR	13, 14
	NUMBER OF BEDROOMS	15

BEGIN INTERVIEW

INTRODUCTION

Hello:

My Name is _____.

I'd like to speak with the head of the household.

Is (he/she) in? IF NO, "Is there another adult household member I could talk to?"

PROCEED ONLY IF AN ADULT RESIDENT OF THE HOUSEHOLD PRESENTS (HIM/HER) SELF:

I represent BDM, a survey research group. We are conducting a burglary security survey for the U.S. Department of Housing and Urban Development. We need information from residents, like yourself, about your home and about the community you are living in. We hope your answers will help to improve the security of other housing and this housing site. Since your household falls in our sample for _____ (Site), I would like to ask you a few questions and inspect your doors and windows.

The things you tell me will be strictly confidential. No names will ever appear in our reports. Of course, no one is required to participate, but we need your help! I think you will find this survey interesting. Thank you.

1. ROBBERY

(In the past 12 months/Since you've lived here), has anyone forced their way in and used force or threats to rob you or any other member of this household?

YES	NO	
1	0	M

16

a) If NO, ENTER 00; GO TO #2

If YES -- How many times did this happen (during the past 12 months/since you've lived here)?

		MM

17, 18

b) ASK ABOUT EACH:

INCIDENT NUMBER	DAYLIGHT	DARKNESS	DK	NA	POINT OF ENTRY	METHOD	
	Did the robbery take place during daylight or darkness?				How did the robber get in? (PROBE FOR POINT AND METHOD)		
1	1	2	8	9			19-21
2	1	2	8	9			22-24
3	1	2	8	9			25-27
4	1	2	8	9			28-30
5	1	2	8	9			31-33
6	1	2	8	9			34-36
7	1	2	8	9			37-39
8	1	2	8	9			40-42
9	1	2	8	9			43-45
10	1	2	8	9			46-48

Duplicate Card #

7. ATTEMPTED ROBBERY

(In the past 12 months/Since you've lived here) has anyone tried to force their way in while you or someone else was at home?

YES	NO		
1	0	M	6

a) IF NO, Enter 00 and go to #3
If YES -- How many times did this happen (in the last 12 months/(since you've lived here)?

		M M	7, 8

b) ASK ABOUT EACH:

INCIDENT NUMBER	Did the attempt take place during daylight or darkness? DAYLIGHT	DARKNESS	DK	NA	How did the attacker get in? (PROBE FOR POINT AND METHOD) POINT OF ENTRY		METHOD		
1	1	2	8	9					9-11
2	1	2	8	9					12-14
3	1	2	8	9					15-17
4	1	2	8	9					18-20
5	1	2	8	9					21-23
6	1	2	8	9					24-26
7	1	2	8	9					27-30
8	1	2	8	9					31-33
9	1	2	8	9					34-36
10	1	2	8	9					37-39

3. BURGLARY

(In the past 12 months/Since you moved in) has anything been stolen from inside this home by someone who broke in or got in by some other illegal means?

YES	NO		
1	0	M	40

BE SURE THIS IS NOT ALSO RECORDED AS A ROBBERY

a) IF NO, ENTER 00; GO TO #4
IF YES, How many times did this take place (during the past 12 months/since you moved in)?

		M M	41, 42

b) ASK ABOUT EACH:

INCIDENT NUMBER	Did the burglary take place during daylight or darkness? DAYLIGHT	DARKNESS	DK	NA	How did the burglar get in? (PROBE FOR POINT AND METHOD) POINT OF ENTRY	METHOD	
1	1	2	8	9			43-45
2	1	2	8	9			46-48
3	1	2	8	9			49-51
4	1	2	8	9			52-54
5	1	2	8	9			55-57
6	1	2	8	9			58-60
7	1	2	8	9			61-63
8	1	2	8	9			64-66
9	1	2	8	9			67-79
10	1	2	8	9			70-72

Duplicate Card # | 3 | 1-4

4. ATTEMPTED BURGLARY

Other than the incidents just mentioned, did you ever find a door jimmied, a lock forced or any signs of an attempted break-in (during the past twelve months/ since you moved in)?

YES	NO		
1	0	M	6

a) IF NO ENTER 00; GO TO #5
IF YES, How many times did this happen (since you moved in/during the past twelve months)?

		M M	7, 8

b) ASK ABOUT EACH:

INCIDENT NUMBER	Did the attempt take place during daylight or darkness? DAYLIGHT	DARKNESS	DK	NA	How did the burglar try to get in? (PROBE FOR POINT AND METHOD) POINT OF ENTRY		METHOD		
1	1	2	8	9					9-11
2	1	2	8	9					12-14
3	1	2	8	9					15-17
4	1	2	8	9					18-20
5	1	2	8	9					21-23
6	1	2	8	9					24-26
7	1	2	8	9					27-30
8	1	2	8	9					31-33
9	1	2	8	9					34-36
10	1	2	8	9					37-39

5. VANDALISM

(In the past 12 months/Since you moved in) has your home been damaged deliberately by anyone?

YES	NO		
1	0	M	40

a) IF NO, ENTER 00; GO TO #6
IF YES, How many times did this take place in the past twelve months?

		M M	41, 42

b) ASK ABOUT EACH:

INCIDENT NUMBER	Did the incident take place during daylight or darkness? DAYLIGHT	DARKNESS	DK	NA	What was damaged? (PROBE FOR LOCATION AND TYPE) LOCATION		TYPE		
1	1	2	8	9					43-45
2	1	2	8	9					46-48
3	1	2	8	9					49-51
4	1	2	8	9					52-54
5	1	2	8	9					55-57
6	1	2	8	9					58-60
7	1	2	8	9					61-63
8	1	2	8	9					64-66
9	1	2	8	9					67-69
10	1	2	8	9					70-72

Card # 4 Dup 1-4 5

6. IS RESPONDENT THE HEAD OF THE HOUSEHOLD, OR ANOTHER ADULT.

HEAD	1	6
OTHER ADULT	0	
	M	

7. I'd like to ask about the people living here. How many persons, including you, live here now? (probe)

		M M	7, 8

8. I'd like to ask a few questions about each of them? First, about the head of the household. . .

LINE OUT THOSE THAT DO NOT APPLY

PERSON	A SEX M	A SEX F	B How old? AGE	C How are they related to the head of the household? RELATIONSHIP TO HEAD: PARENT	SPOUSE	FRIEND	CHILD/GC	OTHER	D Is he/she disabled or handicapped? YES	NO	
a HEAD	1	0		M					1	0	9-13
b	1	0		1	2	3	4	5	1	0	14-18
c	1	0		1	2	3	4	5	1	0	19-23
d	1	0		1	2	3	4	5	1	0	24-28
e	1	0		1	2	3	4	5	1	0	29-33
f	1	0		1	2	3	4	5	1	0	34-38
g	1	0		1	2	3	4	5	1	0	39-43
h	1	0		1	2	3	4	5	1	0	44-49

9. How many years ago did you move into this house/apt? | | | MM | 50, 51

a) IF LESS THAN ONE YEAR, How many months have you lived here? | | | M M | 52, 53

10. Do you usually lock your front door when you are home during the day? YES 1 | NO 0 | M | 54

11. Do you usually lock all the accessible windows when you go to bed? YES 1 | NO 0 | M | 55

12. Do you usually lock all the accessible windows when you leave your home for a short time? 1 | 0 | M | 56

a) IF YES WAS ANSWERED TO 11 OR 12 ABOVE, Why? (PROBE - ?) (OFFICE)

(note) _____ 1 | 0 | M | 57

_____ 1 | 0 | M | 58

_____ 1 | 0 | M | 59

_____ 1 | 0 | M | 60

13. Is an adult (18 yrs. old or above) usually at home

	YES	NO		
a) 9:00 AM to 5:00 PM, during the week-day?	1	0	M	61
b) evening during the week-day?	1	0	M	62
c) 9:00 AM to 5:00 PM, during Saturday?	1	0	M	63
d) 9:00 AM to 5:00 PM, during Sunday?	1	0	M	64

14. Is the house/apt usually empty (on one home):

most weekends	1	
many weekends	2	
few weekends	3	65
no weekends	4	
	M	

CLOSE THIS PART OF THE INTERVIEW.

Thank you for answering my questions. Would you like to walk with me, while I look at your door and window locks?

KPK
DUP 1-4
5

DWELLING UNIT INSPECTION (INTERIOR)

Card No. 5

Start with the room you are in. These questions are not for the respondent.

WINDOWS

1. How many window assemblies are there in the entire unit? ☐☐ MM 6, 7
2. On how many of these are shades or drapes closed? ☐☐ MM 8, 9
3. Classify the frames and glazing.

LINE OUT THOSE THAT DO NOT APPLY

	LOCATION				FRAME				GLAZING								ADDITIONAL				
	Front	Side	Back		Steel	Aluminum	Wood		Missing	Cardboard	Wood	Glass	Lexan	Metal	None	Mesh	Bars	Accessible	Acc. with effort	Inaccessible	
a	1	2	3	M	1	2	3	M	0	1	2	3	4	5	0	1	2	M	1	2	3	M	10-14
b	1	2	3	M	1	2	3	M	0	1	2	3	4	5	0	1	2	M	1	2	3	M	15-19
c	1	2	3	M	1	2	3	M	0	1	2	3	4	5	0	1	2	M	1	2	3	M	20-24
d	1	2	3	M	1	2	3	M	0	1	2	3	4	5	0	1	2	M	1	2	3	M	25-29
e	1	2	3	M	1	2	3	M	0	1	2	3	4	5	0	1	2	M	1	2	3	M	30-34
f	1	2	3	M	1	2	3	M	0	1	2	3	4	5	0	1	2	M	1	2	3	M	35-39
g	1	2	3	M	1	2	3	M	0	1	2	3	4	5	0	1	2	M	1	2	3	M	40-44
h	1	2	3	M	1	2	3	M	0	1	2	3	4	5	0	1	2	M	1	2	3	M	45-49
i	1	2	3	M	1	2	3	M	0	1	2	3	4	5	0	1	2	M	1	2	3	M	50-54
j	1	2	3	M	1	2	3	M	0	1	2	3	4	5	0	1	2	M	1	2	3	M	55-59

4. How many windows have locks on them? ☐☐ MM 60-61
5. How many of these are in working order? ☐☐ MM 62-63

Duplicate 1-4
Card # 6 5

6. Examine the types of locks on the windows.

LINE OUT THOSE THAT DO NOT APPLY

	CIRCLE IF LOCK IS ATYPICAL		LOCK TYPE								CONDITION					
			NONE	THUMB LATCH	KEY LATCH	PLUNGER	KEY PLUNGER	PROP	OTHER		EXCELLENT	ADEQUATE	POOR	INOPERABLE		
a	M	1	0	1	2	3	4	5	6	M	1	2	3	4	M	6-8
b	M	1	0	1	2	3	4	5	6	M	1	2	3	4	M	9-11
c	M	1	0	1	2	3	4	5	6	M	1	2	3	4	M	12-14
d	M	1	0	1	2	3	4	5	6	M	1	2	3	4	M	15-17
e	M	1	0	1	2	3	4	5	6	M	1	2	3	4	M	18-20
f	M	1	0	1	2	3	4	5	6	M	1	2	3	4	M	21-23
g	M	1	0	1	2	3	4	5	6	M	1	2	3	4	M	24-26
h	M	1	0	1	2	3	4	5	6	M	1	2	3	4	M	27-29
i	M	1	0	1	2	3	4	5	6	M	1	2	3	4	M	30-32
j	M	1	0	1	2	3	4	5	6	M	1	2	3	4	M	33-35

7. Have you marked anything as atypical?

YES	NO		
1	0	M	36

a) IF YES, indicate letter of item, manufacturer and identifying characteristics.

LETTER	MANUFACTURER	CHARACTERISTICS (MODEL NO.; TYPE; ETC.)

If #7 was YES, Take photos and attach here.

8. If the shades or drapes were open, the furniture in the main room could be seen

not at all from the outside	0	
only if someone stood at the window	1	37
by someone at ground level nearby	2	
	M	

a) If 2, what appears to be the normal use for the area from which someone could see in?

play area	1	
sitting area	2	
interior walkway	3	
street sidewalk	4	38
street	5	
	M	

9. FRONT DOOR A. MATERIAL B. CONDITION

		STEEL	ALUMINUM	WOOD	FIBER		EXCELLENT	ADEQUATE	POOR	MISSING	
FRAME	M	1	2	3	4	M	3	2	1	0	39-40
STILES	M	1	2	3	4	M	3	2	1	0	41-42
DOOR MATERIAL	M	1	2	3	4	M	3	2	1	0	43-44
HINGES	M	1	2	3	4	M	3	2	1	0	45-46
DOOR LATCH	M	1	2	3	4	M	3	2	1	0	47-48
KNOB	M	1	2	3	4	M	3	2	1	0	49-50

Duplicate Card # 7 1-4 5

10. LOCKS, ETC

	CIRCLE 1 IF PRESENT		CIRCLE 1 IF ATYPICAL		CONDITION				
					POOR	ADEQUATE	EXCELLENT		
a. KEY IN KNOB	1	M	1	M	3	2	1	M	6-8
b. DEAD BOLT (HORIZ)	1	M	1	M	3	2	1	M	9-11
c. DEAD BOLT (VERT)	1	M	1	M	3	2	1	M	12-14
d. DEAD LATCH	1	M	1	M	3	2	1	M	15-17
e. BOLT	1	M	1	M	3	2	1	M	18-20
f. LOCKING BOLT	1	M	1	M	3	2	1	M	21-23
g. CHAIN	1	M	1	M	3	2	1	M	24-26
h. LOCKING CHAIN	1	M	1	M	3	2	1	M	27-29
i. LATCH COVER	1	M	1	M	3	2	1	M	30-32
j. PEEPHOLE	1	M	1	M	3	2	1	M	33-35
k. ALARM	1	M	1	M	3	2	1	M	36-38
l. BAR	1	M	1	M	3	2	1	M	39-41
m. OTHER	1	M	1	M	3	2	1	M	42-44

11. Have you marked anything as atypical?

YES	NO		
1	0	M	45

a) IF YES, indicate letter of item, manufacturer, and any distinguishing characteristics.

LETTER	MANUFACTURER	CHARACTERISTICS (MODEL NO.; TYPE; ETC.)

If #11 was YES, Take Photos and Attach Here

YES NO

12. Is there a back door? | 1 | 0 | M | 46

a) BACK DOOR

	A. MATERIAL					B. CONDITION					
		STEEL	ALUMINUM	WOOD	FIBER		EXCELLENT	ADEQUATE	POOR	MISSING	
FRAME	M	1	2	3	4	M	3	2	1	0	47, 48
STILES	M	1	2	3	4	M	3	2	1	0	49, 50
DOOR MATERIAL	M	1	2	3	4	M	3	2	1	0	51, 52
HINGES	M	1	2	3	4	M	3	2	1	0	53, 54
DOOR LATCH	M	1	2	3	4	M	3	2	1	0	55, 56
KNOB	M	1	2	3	4	M	3	2	1	0	57, 58

Duplicate Card # | 8 | 1-4, 5

13. BACK DOOR LOCKS, ETC. SKIP IF #12 WAS NO

	CIRCLE 1 IF PRESENT		CIRCLE 1 IF ATYPICAL		CONDITION				
					POOR	ADEQUATE	EXCELLENT		
a. KEY IN KNOB	1	M	1	M	3	2	1	M	6-8
b. DEAD BOLT (HORIZ)	1	M	1	M	3	2	1	M	9-11
c. DEAD BOLT (VERT)	1	M	1	M	3	2	1	M	12-14
d. DEAD LATCH	1	M	1	M	3	2	1	M	15-17
e. BOLT	1	M	1	M	3	2	1	M	18-20
f. LOCKING BOLT	1	M	1	M	3	2	1	M	21-23
g. CHAIN	1	M	1	M	3	2	1	M	24-26
h. LOCKING CHAIN	1	M	1	M	3	2	1	M	27-29
i. LATCH COVER	1	M	1	M	3	2	1	M	30-32
j. PEEPHOLE	1	M	1	M	3	2	1	M	33-35
k. ALARM	1	M	1	M	3	2	1	M	36-38
l. BAR	1	M	1	M	3	2	1	M	39-41
m. OTHER	1	M	1	M	3	2	1	M	42-44

14. Have you marked anything as atypical?

YES	NO		
1	0	M	45

15. If yes, indicate letter of item, manufacturer and identifying characteristics.

LETTER	MANUFACTURER	CHARACTERISTICS (MODEL NO.; TYPE; ETC.)

If #14 was YES, Take Photos and Attach Here

TOWNHOUSES ONLY

		YES	NO		
16.	IS THERE LIGHT BY THE FRONT DOOR?	1	0	M	46
	a) IF YES, DOES IT WORK?	1	0	M	47
17.	IS THERE A LIGHT BY THE BACK DOOR?	1	0	M	48
	a) IF YES, DOES IT WORK?	1	0	M	49
18.	IS THERE A DEFINED FRONT YARD? (FENCE, HEDGE, BARRIER)	1	0	M	50
19.	IS THERE A DEFINED (FENCE, HEDGE, BARRIER) BACK YARD?	1	0	M	51
20.	STANDING AT THE FRONT DOOR, HOW MANY PEOPLE CAN YOU SEE WITHIN FIFTY FEET?			MM	52, 53
21.	ENTER TIME OF DAY _____ PM / AM			MM	54, 55

22. WALKUPS AND TOWNHOUSES

IS THERE ANY STREET LIGHTING WITHIN 50 FEET OF THE ...

		YES	NO		
a)	Frontdoor	1	0	M	56
b)	Backdoor	1	0	M	57
c)	Side	1	0	M	58

23. IS THERE ANYTHING THAT WOULD MAKE ACCESS TO DOORS OR WINDOWS ...

		YES	NO		
a)	Easier	1	0	M	59
b)	Harder	1	0	M	60

IF YES TO EITHER, DESCRIBE

_____

_____

24. IS THERE ANYTHING THAT WOULD MAKE SPOTTING A BURGLAR AT WORK. . .

		YES	NO		
a)	Easier	1	0	M	61
b)	Harder	1	0	M	62

IF YES TO EITHER, DESCRIBE

_____

_____

END INSPECTION
ENTER TIME _____ | | | MM | 63, 64

CLOSE THE INTERVIEW

Thank you very much for your cooperation. You've been very helpful. Get form signed.

APPENDIX B

Resident Children Includes:	None N (% of total)	Adolescents N (% of total)	Juveniles Only N (% of total)	Total
HOH Is Living:				
Alone	1 (5.9)	2 (11.8)	6 (35.3)	9 (52.9)
With Spouse	1 (5.9)	0 (0)	5 (29.4)	6 (35.3)
With Other Adult(s)	1 (5.9)	1 (5.9)	0 (0)	2 (11.8)
Total	3 (17.6)	3 (17.7)	11 (64.7)	17 (100)

Exhibit B-1. Household Composition, Site W, Area 1 Townhouses

Resident Children Includes:	None N (% of total)	Adolescents N (% of total)	Juveniles Only N (% of total)	Total
HOH Is Living:				
Alone	1 (16.7)	1 (16.7)	1 (16.7)	3 (50.0)
With Spouse	0 (0)	2 (33.3)	0 (0)	2 (33.3)
With Other Adult(s)	1 (16.7)	0 (0)	0 (0)	1 (16.7)
Total	2 (33.3)	3 (50.0)	1 (16.7)	6 (100)

Exhibit B-2. Household Composition, Site W, Area 2 Townhouses

Resident Children Includes:	None N (% of total)	Adolescents N (% of total)	Juveniles Only N (% of total)	Total
HOH Is Living:				
Alone	1 (4.5)	5 (22.7)	0 (0)	6 (27.3)
With Spouse	1 (4.5)	3 (13.6)	4 (18.2)	8 (36.4)
With Other Adult(s)	0 (0)	6 (27.3)	2 (9.1)	8 (36.4)
Total	2 (9.1)	14 (63.6)	6 (27.3)	22 (100)

Exhibit B-3. Household Composition, Site W, Area 3 Townhouses

Resident Children Includes:	None N (% of N total)	Adolescents N (% of total)	Juveniles Only N (% of total)	Total
HOH Is Living:				
Alone	3 (6.7)	8 (17.8)	7 (15.5)	18 (40.0)
With Spouse	2 (4.5)	5 (11.1)	9 (20.0)	16 (35.6)
With Other Adult(s)	2 (4.4)	7 (15.5)	2 (4.5)	11 (24.4)
Total	7 (15.6)	20 (44.4)	18 (40.0)	45 (100)

Exhibit B-4. Household Composition, Site W Townhouses (Composite)

Resident Children Includes:	None N (% of Total)	Adolescents N (% of total)	Juveniles Only N (% of total)	Total
HOH Is Living:				
Alone	15 (28.3)	9 (17.0)	9 (17.0)	33 (62.3)
With Spouse	0 (0)	1 (1.9)	1 (1.9)	2 (3.8)
With Other Adult(s)	9 (17.0)	4 (7.5)	5 (9.4)	18 (34.0)
Total	24 (45.3)	14 (26.4)	15 (28.3)	53 (100)

Exhibit B-5 Household Composition, Site W, Area 1 Walkups

Resident Children Includes:	None N (% of N total)	Adolescents N (% of total)	Juveniles Only N (% of total)	Total
HOH Is Living:				
Alone	3 (12.0)	2 (8.0)	9 (36.0)	14 (56.0)
With Spouse	2 (8.0)	1 (4.0)	2 (8.0)	5 (20.0)
With Other Adult(s)	3 (12.0)	2 (8.0)	1 (4.0)	6 (24.0)
Total	8 (32.0)	5 (20.0)	12 (48.0)	25 (100)

Exhibit B-6 Household Composition, Site W, Area 2 Walkups

Resident Children Includes:	None N (% of total)	Adolescents N (% of total)	Juveniles Only N (% of total)	Total
HOH Is Living:				
Alone	18 (23.0)	11 (14.1)	18 (23.0)	47 (60.1)
With Spouse	2 (2.6)	2 (2.6)	3 (3.9)	7 (9.1)
With Other Adult(s)	12 (15.4)	6 (7.7)	6 (7.7)	24 (30.8)
Total	32 (41.0)	19 (24.4)	27 (34.6)	78 (100)

Exhibit B-7 Household Composition, Site W Walkups (Composite)

Resident Children Includes:	None N (% of total)	Adolescents N (% of total)	Juveniles Only N (% of total)	Total
HOH Is Living:				
Alone	5 (8.5)	12 (20.3)	21 (35.6)	38 (64.4)
With Spouse	3 (5.1)	1 (1.7)	2 (3.4)	6 (10.2)
With Other Adult(s)	7 (11.9)	3 (5.1)	5 (8.5)	15 (25.4)
Total	15 (25.4)	16 (27.1)	28 (47.5)	59 (100)

Exhibit B-8 Household Composition, Site W, Area 3 Highrises

Resident Children Includes:	None N (% of total)	Adolescents N (% of total)	Juveniles Only N (% of total)	Total
HOH Is Living:				
Alone	0 (0)	3 (18.5)	2 (12.5)	5 (31.0)
With Spouse	0 (0)	2 (12.5)	0 (0)	2 (12.5)
With Other Adult(s)	0 (0)	8 (50.0)	1 (6.5)	9 (56.5)
Total	0 (0)	13 (81.0)	3 (19.0)	16 (100)

Exhibit B-9 Household Composition, Site B Townhouses

Resident Children Includes:	None N (% of total)	Adolescents N (% of total)	Juveniles Only N (% of total)	Total
HOH Is Living:				
Alone	26 (25.0)	19 (18.3)	35 (33.7)	80 (76.9)
With Spouse	1 (1.0)	7 (6.7)	0 (0)	8 (7.7)
With Other Adult(s)	7 (6.7)	7 (6.7)	2 (1.9)	16 (15.4)
Total	34 (32.7)	33 (31.7)	37 (35.6)	104 (100)

Exhibit B-10 Household Composition, Site B Highrises

E·N·D

DATE

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