

APRIL 1975

EVALUATION OF MERCHANT SECURITY PROGRAM

A CASE STUDY ASSESSING THE IMPACT OF
ELECTRONIC PROTECTIVE DEVICES ON SAFETY
IN RETAIL STORES IN NEW YORK CITY

Prepared by:

Dr. Marvin Berkowitz
Director Applied Technology Unit
Support Services Bureau
NEW YORK CITY POLICE DEPARTMENT
1 Police Plaza, Room 700
New York, N.Y. 10038
Tel: 212-374-3870

EVALUATION OF MERCHANT SECURITY PROGRAM

A CASE STUDY ASSESSING THE IMPACT OF
ELECTRONIC PROTECTIVE DEVICES ON SAFETY
IN RETAIL STORES IN NEW YORK CITY

Prepared by:

Dr. Marvin Berkowitz
Director Applied Technology Unit
Support Services Bureau
NEW YORK CITY POLICE DEPARTMENT
1 Police Plaza, Room 700
New York, N.Y. 10038
Tel: 21P-574-3870

ABSTRACT

MERCHANT SECURITY PROGRAM

a \$250,000 program funded
under L.E.A.A. state block
grant C69364

The Merchant Security Program (MSP) subsidized the installation and maintenance of silent alarms, cameras and earning signs in approximately 500 small stores in 12 robbery prone precincts in New York City. Participating merchants contributed, in most cases, about 25 percent of the cost of installation and rental of these protective devices over a 14 month period extending from mid or late 1973. This report is an evaluation of the pilot project.

ACKNOWLEDGEMENTS

The author wishes to acknowledge the assistance in preparing this report of the New York City Office of Neighborhood Services, especially that of Alan Knapp, and within New York Police Department, Detective Frank Pergola-, Julian Prager, Frank Criscittiello, Roberta Schwarz and Antoinette G. Torres.

TABLE OF CONTENTS

	PAGE
LIST OF ILLUSTRATIONS.....	iii
LIST OF TABLES.....	iii
SUMMARY/CONCLUSIONS.....	iv
INTRODUCTION.....	1
SCOPE OF MERCHANT SECURITY PROGRAM.....	1
OPERATION OF MSP.....	2
FINANCING.....	3
SELECTION OF PARTICIPANTS.....	4
CHARACTERISTICS OF MSP PARTICIPANTS.....	8
HYPOTHESES.....	10
EVALUATION DESIGN.....	13
INPUT FACTORS.....	14
COST EFFECTIVENESS.....	14
LIMITATIONS OF THE EVALUATION DESIGN.....	15
FINDINGS.....	19
. OBSERVED CHANGES IN CRIME LEVELS.....	19
. VALUE OF THE MSP AS PERCEIVED BY PARTICIPATING MERCHANTS.....	24
. WILLINGNESS TO CONTINUE IN THE PROGRAM.....	24
. PERCEIVED SENSE OF PERSONAL SECURITY.....	25
. AFFECT ON CRIME CONSCIOUSNESS, CONCERN FOR NEIGHBORHOOD.....	25
. AFFECT ON ATTITUDE TOWARD POLICE AND CITY.....	25
. AFFECT ON APPREHENDING ROBBERS/TECHNICAL PERFORMANCE OF THE EQUIPMENT.....	25
POTENTIAL DETERRENT EFFECT OF WARNINGS AND SECURITY DEVICES— THE OFFENDER POINT OF VIEW AND IMPLICATIONS FOR FUTURE EQUIPMENT EXPERIMENTS.....	27
BIBLIOGRAPHY.....	30
APPENDIXES	
A. DESCRIPTION OF PARTICIPATING PRECINCTS.....	32
B. INTERVIEW FORM—PARTICIPATING MSP MERCHANTS.....	50
C. SURVEY OF CRIME IN PARTICIPATING PRECINCTS.....	54

LIST OF ILLUSTRATIONS

FIGURE		PAGE
1	PROCESS MODEL FOR OPERATION OF MERCHANT SECURITY PROGRAM	11
2	MSP WARNING	3 2
3	EVALUATION ON PROCESS MODEL	16
4	CRIME COMPARISONS - MSP	18

LIST OF TABLES

TABLE		
1	CRIME LEVELS IN PARTICIPATING PRECINCTS IN PILOT MERCHANT SECURITY PROGRAM	6
2	PARTICIPATING MERCHANTS IN MSP	7
3	PARTICIPATING MERCHANTS IN MSP BY EQUIPMENT TYPE	8
4	PROPORTION OF MERCHANTS IN THE POPULATION AND SAMPLE BY BUSINESS TYPE	9
5	SUMMARY OF CHANGES IN REPORTED INCIDENTS IN PARTICIPATING STORES	21
6	ROBBERIES OF PARTICIPATING MERCHANTS BY STORE TYPE	22

SUMMARY/CONCLUSIONS

MERCHANT SECURITY PROGRAM

a \$250,000 program funded
under L.E.A.A. state block
grant C69364

The Merchant Security Program (MSP) subsidized the installation and maintenance of silent alarms, cameras and warning signs in approximately 500 small stores in 12 robbery prone precincts in New York City. Participating merchants contributed, in most cases, about 25 percent of the cost of installation and rental of these protective devices over a 14-month period extending from mid or late 1973. This report is an evaluation of the pilot project and is intended to:

- a) tell whether the program worked
- b) make recommendations regarding continuation or expansion of the program
- c) identify problems and desirable program modifications

1 • How Well. Did The Program Work

The statistical data available from several sources, do not clearly show any effect of the silent alarms, cameras and warning signs on preventing robberies, or ether crimes. Those observable changes in crime rates cannot be uniquely traced to the use of the security devices as compared to other anti crime programs. But the data itself is relatively insignificant and inconclusive. Despite this, there is no doubt that the merchants participating in the MSP viewed the program as successful. Of the initial 349 merchants subscribing to the MSP program, more than 90 percent remained with the program over the 14 month period. Only one of the 26 merchants who dropped out did so because of dissatisfaction: the others had fire or went out of business for other reasons. Of the group that remained in the program about 85 percent were paying their monthly bills regularly, with the largest portion of the non. paying merchants in ghetto neighborhoods,

Secondly, merchants continued to subscribe to the rental of security equipment in large numbers when the federal subsidy of monthly maintenance charges ended after 14 months, even though their own contribution increased substantially from \$5 to \$15 per month for an alarm or from \$8 to \$11 for a camera. Seventy-one percent of those initially subscribing to "alarms only" have continued, 61 percent of those using "cameras only" had continued, and 33 percent of those with both devices are continuing. Overall, 60 percent of the program participants are now absorbing the full monthly maintenance charges.

These very positive reactions to the MSP are also reflected in statements of merchants toward the perceived effect of the program on their own personal security. Seventy percent of the respondents to a large interview survey said that they felt more secure or safe in their stores because of the MSP program and 28 percent said that they also felt safer on their way to and from the store compared to a year before. Nine percent stated that had made changes in their manner of doing business, like staying open later, as a result of installing the MSP equipment. These are quite positive statements given that some 42 percent of merchants felt that crime was increasing in their areas, and 37 percent felt crime was relatively stable. They are also unusual statements given that no apprehensions could be traced to the use of the silent alarms or cameras, that merchants appeared too frightened to activate alarms during hold-ups, and that there was no improvement in police response time from activation of the alarms.

It appears that the security devices had a placebo effect for merchants. Merchants in the MSP felt that they were personally participating in controlling crime and were exercising a more individual means of achieving police service. This psychological sense of security is probably far more significant than any precise reductions in actual crime for it ultimately determines the life blood of the city through the actions of its citizenry. On this account the MSP appears also to have had a positive effect on increasing the awareness of businessmen toward crime and their concern for the neighborhood. Seventy-seven percent of the participants felt that the MSP program had made merchants more crime conscious and 51 percent said

that the block association had been strengthened or merchants unified. Finally merchant attitudes toward government seem to have been bettered by the MSP. Seventy percent of those interviewed said that their attitude toward the police was good and 25 percent stated their attitude had improved as a result of participating in the program. While only 27 percent of shop owners said their attitude toward the city was good, 35 percent stated their image of the city had improved by virtue of the program.

2. Should the Program be Expanded

The city responded to the initial favorable merchant reaction to the pilot MSP by providing \$1.5 million in capital funds late in 1973 to expand the program to some 3000 additional stores in the 60 remaining precincts. As in the pilot program, each precinct was allotted approximately 50 installations in contiguous areas. At the present time there are approximately 2849 subscribers in the one year expanded subsidy program which will end shortly. Additionally, 314 merchants who participated in the pilot MSP continue to use the protective equipment at their own expense.

Based on the observable impact of the MSP on deterring robberies and other crimes, there is no clear mandate for expansion of the

program or refunding the current subsidy. Changes in merchant security and attitudes which favor continuation of the MSP have already been addressed, but there may be serious policy implications for the city in allowing or abetting citizens to retain a false sense of security that may actually place them in greater hazard. It would seem that any expansion or resubsidization should be tied to an evaluation design structured to more readily obtain accurate data from police records and to disentangle the effects of other neighborhood inputs and anti-crime programs. No plans were made to evaluate the expanded MSP when it was set-up, and there is no data on the prior crime experience of the participating stores. Even without a continued subsidy program, NYPD might usefully monitor changes in crime levels of the original MSP subscribers for a year or two into the future. This data could be kept both on participants who are continuing to use the security devices provided by the pilot MSP at their own expense and on those who terminated.

3. What Program Modifications Are Required

The MSP has helped us to focus in on the kinds of equipment modifications necessary to improve merchant security and increase the likelihood of on-the-scene apprehension. For example, from the MSP experience that merchants were hesitant to activate alarms while offenders were in their stores, it has become clear that reliable protective devices functioning automatically without merchant intervention are required. Such systems currently exist, as do small wireless activators carried on the merchant's person, but these are costly. At the present time, the relative value of cameras, especially uncoupled to silent alarms, is questionable. Camera systems are at least two to three times as expensive as silent alarms, are very costly to operate continuously, are more complex, and require special lighting and focusing for good results. The super 8mm cameras used in the MSP should probably be replaced by higher quality 35 mm cameras systems for any future experiments with these devices, but our findings do not show that they have other than psychological value when not used automatically. Time activated closed circuit television systems, employing re-usable video tape cassettes are also expensive compared to silent alarms and have most of the other disadvantages of cameras.

Silent alarms must either achieve a high probability of on-site apprehensions or provide the means for tracking offenders after they leave the crime scene. NYPD is experimenting with a special communications project which has resulted in average response times of about 45 seconds. Called Robbery Alert, the multi \$100,000 program allows alarms to by-pass the normal 911 police emergency signal network and be transmitted directly to a police car in the neighborhood. The Robbery Alert Squad patrolling a 3 block square business area has been able to make a number of store arrests using this special communications and patrol concept, but the cost effectiveness of this and similar programs must be ultimately reckoned with: i.e., how much is it worth to the department to achieve another arrest—\$100, \$1000, or \$50,000—especially when the deterrent effect, that has high benefits to the society at large, is uncertain? NYPD also recently viewed a novel alarm and surveillance system that allows automatic activation of silent alarms and tracking of offenders at a minimal capital, cost to the city and competitive rental charges to merchants. This system, however, is fought with extremely serious administrative, control and logistical problems which are still to be resolved.

INTRODUCTION

This report is an evaluation of the Merchant Security Program (MSP) a \$250,000 experimental federally funded project. The grant funding the project, C69364, was awarded to the New York City Police Department (NYPD) in July 1973 by the New York State Division of Criminal Justice Services after approval by the Mayor's Criminal Justice Co-ordinating Council. The evaluation was undertaken by the Applied Technology Unit of the NYPD), a staff level group that functions to enhance the application of technology to the department's unique problems.

The kinds of conclusions that are desired from this evaluation are recommendations to the department, to the Mayor and to the mercantile community at large regarding the efficacy of security equipment for controlling crime in stores and. for improving merchant attitudes and actions towards their own personal safety. Specifically:

- (a) is there a mandate for continuation of the program?
- (b) is the program applicable selectively to other areas or city-wide?
- (c) if the program is effective in preventing robberies or other crimes and merchants indicate that they are still unwilling to assume the full rental charges for security equipment, what position should the department and city take?
- (d) are modifications in the program operation required including equipment types, vendors, assumption of costs, management, etc.?

SCOPE OF MERCHANT SECURITY PROGRAM

The first element in the evaluation is a formal restatement of what the pilot project was intended to do--what changes were desired. The Merchant Security Program originated with an application by the NYPD for a block grant from the Law Enforcement Assistance Administration. The pilot project was part of a comprehensive crime prevention program characterized by the use of new technology and managerial measures, and increased community involvement. The project was an out-growth of the national situation documented in congressional reports on crime against retail merchants^{*1}, that:

- (a) the smaller the business, the greater was the impact

U.S. Senate, Select Committee on Small Business, 91st Congress, 1st Session, Crime Against Small Businesses (Washington, D.C., Government Printing Office, 1969). U.S. Senate, Select Committee on Small Business, 91st Congress, 1st Session, Hearings on the Impact of Crime on Small Business-1969, Part 1 Washington, D.C., Government Printing Office, 1969)

of losses (measured, for example, as percent of business receipts) and

(b) ghetto merchants had the highest relative crime losses.

There were multiple objectives and problem perceptions among groups developing the MSP. The designated purposes of the program in the grant application were threefold. First, it sought to test cut the potential of selected security devices in deterring store robberies. Second, it was to assist small retail merchants to pay for the protection provided by the devices. Third, it was to act as a catalyst in high crime neighborhoods by encouraging merchants to organize and cooperate in fighting crime. Implicit also was the hope that the project would improve the public image of the police and confidence in their ability to prevent crime rather than merely apprehend offenders.

The MSP was dovetailed, in its management, with a program financially encouraging the formation of block associations of at least 35 households or 24 commercial establishments that would upgrade their use of simple passive security devices like door locks and window gates, and become generally more crime conscious. The association or "buddy" concept evolved into a Block Security Program that was funded by the city to the extent of some 36 million late in 1973. The Block Security Program also provided, under a cash match formula with block associations, for the purchase of intercom and closed circuit television systems, fences, better off-street lighting, etc.**

The New York City Mayor's Office and City Council viewed these programs, in addition to proximate objectives of reducing crime, as having longer term impact on improving the attitude of merchants toward the city and stemming the trend of the loss of business and industry from New York City. The critical importance of small merchants to the social and economic vitality of local neighborhoods and by their multiplier effects to the viability of urban life has been long espoused by Jane Jacobn and other planners and sociologists. But this divergence of goals immediately questions the grounds for considering the program successful since it is possible that the MSP could be effective in reducing crime, the proximate objective, and at the same time not contribute to the long run objective of improving the public image of the police and the city. Alternatively, the MSP could respond to the business community's desire that the city subsidize programs tailored to its needs and not be able to reduce crime.

OPERATION OF MSP

The MSP was developed and managed by the Crime Prevention

** As a spill-off from the Block Security Program, and based on merchants' enthusiasm with the MSP, the city in an unusual action before the pilot MSP had been evaluated/expanded the MSP to some 3000 additional merchants at a cost of about \$1.5 million late in 1973. The evaluation here is only related to the pilot program, though many of the same findings may be extended to the expanded program.

Section of the NYPD.

The pilot project consisted of furnishing approximately 500 merchants with security equipment and monitoring their effectiveness over a 14 month period. Two kinds of equipment were tested, hold-up alarms and surveillance cameras. The hold-up alarm was a silent device consisting of one or more activator buttons on a circuit wired directly to a vendor's central station via a dedicated telephone line. The alarm devices might be placed on a money clip in a cash drawer and set off automatically or activated by the merchant from an unobserved position, for example, under a counter near the cash register. Upon receipt of an alarm signal, the central station operator would immediately notify the NYPD's Communication Center by dialing 911. The surveillance cameras were super 8mm devices which automatically took pictures of the store-owners premises every 20 seconds, or when the camera was activated manually. The alarms and cameras were to be tested separately and in combination, In addition, warnings that confirmed the presence of security equipment in the store were posted prominently inside the store and outside on windows and doors. These warnings also displayed the police emblem.

During June 1973 the Police Department received proposals from six alarm companies in response to a Request for Proposal for installation and servicing of hold-up alarms and camera devices. The award was made to the Guardsman Central Station Alarm Corporation, whose proposal was determined to be superior in its technical and managerial aspects and within a competitive price range. The first

FINANCING

The federal funds of the program provided for the costs of installing alarm and camera systems in stores and subsidized the monthly leasing charges billed each merchant. Typical charges for equipment, which varied slightly depending on the telephone line costs in different boroughs were:

ALARM SYSTEM:

a) Merchant Share:

Service: 14 months @ \$6 per month maintenance

charge \$84 (2 total)

b) Police Department Share: (federal funds)

Installation: \$140

Service: 14 months @ \$6 per month \$112
maintenance plus \$2 per
month telephone line
charges

S252 (75% of Total)

c) Total per Installation \$336

CAMERA SYSTEM:

a) Merchant Share:

Service: 14 months @14 per month \$112

b) Police Department Share: (federal funds)

Installation: \$275

Film: 14 months @ \$6 per cassette
per 4 days in automatic mode
\$500

or

2 cassettes @ \$6 in manual
mode - \$12

~\$12 to 8500_____

\$287 to \$775

c) Total per Installation_____

\$399 to \$887

ALARM AND CAMERA SYSTEM

a)Merchant Share

Service: 14 months @ \$14 per month \$196

b) Police Department Share: (federal funds)

Installation and Service \$539 to \$1027

c)Total per Installation

Supplemental to the above charges, Merchants would be assigned costs for special money clips, foot rails, or photoelectric activators, and would pay film processing costs.

SELECTION OF PARTICIPANTS

It was decided to restrict participants, from the target population of all merchants in the city, to merchants in a sample of 12 of the city's 72 police precincts. The main selection criterion for the target precincts was a relatively high incidence or growth in incidence of store robberies per 1000 precinct residents. To obtain some city-wide view of variant factors in each borough, three precincts were

selected in each borough, excluding Staton Island. As will be seen in Table 1, these precincts had a wide]i/ varied level of crime activity.

Each precinct wan to have u target area where merchant security equipment would be installed and a control area which would be used to monitor the effectiveness of the program in that particular precinct. The two areas were to be as similar to each other as possible in order to achieve an accurate assessment of the program's results. One reason to examine control areas some distance from the target areas was to try to limit the effect of merely measuring a displacement of incidents to non participants in the target areas.

The merchants selected to participate from each target area were to satisfy three conditions:

- a) they had to be sufficiently diverse in business type in order to get a representative profile of precinct store robberies.
- b) they had to be doing a sufficiently small volume of business (a mom and pop type store) so as not to be able to afford a robbery system on their own.
- c) they had to be part of a small "well-defined, geographically

It was found, however, in soliciting merchants, that it was neither possible to control for the type or size of store if the program in each precinct were to be limited to a few contiguous blocks in a business area. Consequently stores of all types and sizes were enrolled, some of which already had burglary alarm coverage, or dogs, or gates, or guns, etc. In addition, stores with different crime histories were included. A breakdown of participants by business type is given in Table 2. And although tn effort was made to locate control areas somewhat comparable to the target areas in each sample precinct, this was not wholly successful, (See in Appendix A a discussion of the characteristics of the selected areas).

As of February 1974, there were 523 participants in the MSP: 306 had "only alarms," 81 had "only cameras", and 136 both cameras and alarms. A detailed breakdown is given in Table 3.

TABLE 1 Crime Levels in Participating Precincts in Pilot Merchant Security Program

1973 CRIME INCIDENTS

PRECINCT	ALL ROBBERIES	COMMERCIAL ROBBERIES	ALL BURGLARIES	COMMERCIAL ROBBERIES	LARCENIES	TOTAL INDEX CRIMES	RELATIVE CRIME HAZARD RATING
<u>Manhattan</u>							
. Midtown South	2770	603	4250	2827	7729	16557	High
. 28th	2647	248	1502	380	1703	7664	High
. 30th	1459	261	1829	284	847	5320	High
<u>Bronx</u>							
. 42nd	2121	357	3406	1064	1794	9966	High
. 44th	1781	342	3870	869	1605	9817	High
. 47th	912	217	2118	710	1855	7320	Medium
<u>Brooklyn</u>							
. 66th	241	86	1831	598	1200	4795	Low
. 72nd	415	74	2313	801	1218	5477	Low
. 77th	1549	272	2382	742	1336	7163	High
<u>Queens</u>							
. 103rd	2526	450	3236	1093	3587	13441	High
. 112th	481	151	2206	569	2075	7292	Medium
. 113th	219	38	400	69	463	1564	Low
CITY-WIDE	72,750	12,468	149,311	45,685	127,500	475,855	CITY-WIDE

BUSINESS

DISTRICTS

TOTAL

	108	20	30	42	44	47	66	72	77	105	112	113	%	Number
. Bar & Grill		6		4		1		4		2		2	4%	19
. Beauty/Barber Shop	1	2	2	2	2	1	1		1		1	2	3%	15
. Books/Records	1	6		1	1				1	1			2%	11
. Candy/Ice Cream	1			1		3		3		1	1	1	2%	11
. Cards/Gifts/Toys	3	2	1	2	3	1		2		3	3	1	4%	21
. Clothing (Men, Women, Children)	3	14	1	1	9	2	3	2	2	5	2	2	9%	46
. Check Cashing/Loans/Pawn Shop										1				1
. Decorator/Furniture/Paints/Wallpaper		2			2	2	2			3		1	2%	12
. Department Store/5 & 10/Discount		7	1		7		1	1	4	2	1		4%	24
. Doctor/Dentist		2			1	1		1				2	1%	7
. Drug Store/Pharmacy	1	4	2	1	1	3	3	3	1	1	3	2	5%	25
. Dry Cleaner/Tailor/Laundry		1	4	2	1	2	2	2		1		2	3%	17
. Dry Goods/Curtains/Draperies		4		3	1	1		1	2	1			2%	15
. Floor Coverings				1		1	1					1	1%	4
. Florist	3						2	1					1%	6
. Gas Station/Auto Repair/Auto Parts				1			2	2		1			1%	6
. Hardware/Electrical Supply/Plumbing Supply		2				1	1			1		4	2%	9
. Jewelry	1	4		1	2	2	1	1	1	1	1		3%	15
. Lawyer/Realty/Insurance/Travel		2		1			1		1	3		2	2%	9
. Liquor/Wines		2	1	2		1		1	1	1	1	2	2%	12
. Luggage							1							1
. Meat Market/Grocery/Bakery/Appetizing/Fruits & Vegetables	2		6	3	9	8	13	15	4	1	6	3	13%	70
. News/Magazine Stand						1								1
. Pet Shop/Animal Supplies		1				2							1%	3
. Photographer/Camera Supply		1								4	1		1%	6
. Restaurant/Delicatessen/Luncheonette	5	4	1	2	5	4	1	8		4	6	3	8%	43
. Shoe Store/Shoe Repair	2	14		1	2	3		2	2	2	1		5%	29
. Sporting Goods/Army-Navy		2								1			1%	3
. Other or Undetermined	11	13		2	10	10	7	8	8	10	3	9	12%	101
TOTAL	31	95	19	31	62	58	42	72	28	50	50	30	101%	540

Table 3: Participants in Merchant Security Program by Equipment Type

PRECINCT "	IM?ICiEMT3	AM™M	CAMERAS	BOTH
Manhattan				
Midtown South	35	13	6	16
28th	89	29	26	34
30th	23	18	4	1
Bronx				
42nd	30	19	1	10
44th	62	37	9	16
47th	44	33	4	7
Brooklyn				
66th	39	29	2	8
72nd	57	50	1	6
77th	29	11	13	5
Queens				
103rd	49	20	9	20
112th	30	23	3	4
113th	36	24	3	9
	523	306	81	136

CHARACTERISTICS OF MSP PARTICIPANTS

The evaluation also includes the analysis of the viows and experience of participants in the MSP program. All merchants who had been the victims of robberies were specified for inclusion in a sample of 250 merchants to be interviewed from the population of 523 subscribers. The remaining merchants to be surveyed formed a sample stratified proportional to the number of participating merchants in each precinct and by type of installed equipment.

The Applied Technology Unit desired to have the interviews performed by civilian rather than police staff to eliminate any sense of bias or coercion from responses, and the City's Office of Neighborhood Services agreed to carry out the survey. But in doing so the Department relinquished an important element of control over the interviews. Hence, although additional merchants were specified to allow for interview non response, difficulties in obtaining or completing interviews with shop owners or managers resulted in only 171 interviews, some of which were partial.

A copy of the survey questionnaire is presented in Appendix B, This section will discuss the major findings regarding characteristics of participants.

1 • Comparison of the SAmE and the Target Population
 The survey results appear to be representative of the population. Table 4 gives the proportions of merchants in the target and sample areas by business type.

The reasons that merchants subscribed to the MSP are not entirely clear despite the fact that some 80 percent of those stating a definite opinion, felt that police anti-crime programs (better lighting, engraving of property, etc.) could prevent crime. For example only 35 percent thought that the presence of the KSP silent alarm strongly prevented hold-ups, about 25 percent thought these devices had no effect on robberies. The perceptions of merchants subscribing to cameras were about the same. Merchants also did not clearly distinguish the MS devices as being useful only against hold-ups. Some 83 percent said that the equipment had some positive preventive effect against burglaries, and 36 percent thought that the devices discouraged shoplifters from entering their stores.

HYPOTHESES

Effect on Crime

The countermeasures to control crime against retail business fall into three broad categories: discourage the initiation of crime, reduce the rewards of crime, increase the likelihood of apprehension. The Merchant Security Program attempted to address the first and last of these interlocking options to deterrence. Specifically it sought to warn potential offenders that stores were protected, and sought to cut the time of arrival of the police on the crime scene. It did not address a third option of increasing the time of intrusion and escape of the criminal by various architectural and technological developments, or improve the access to crime insurance.

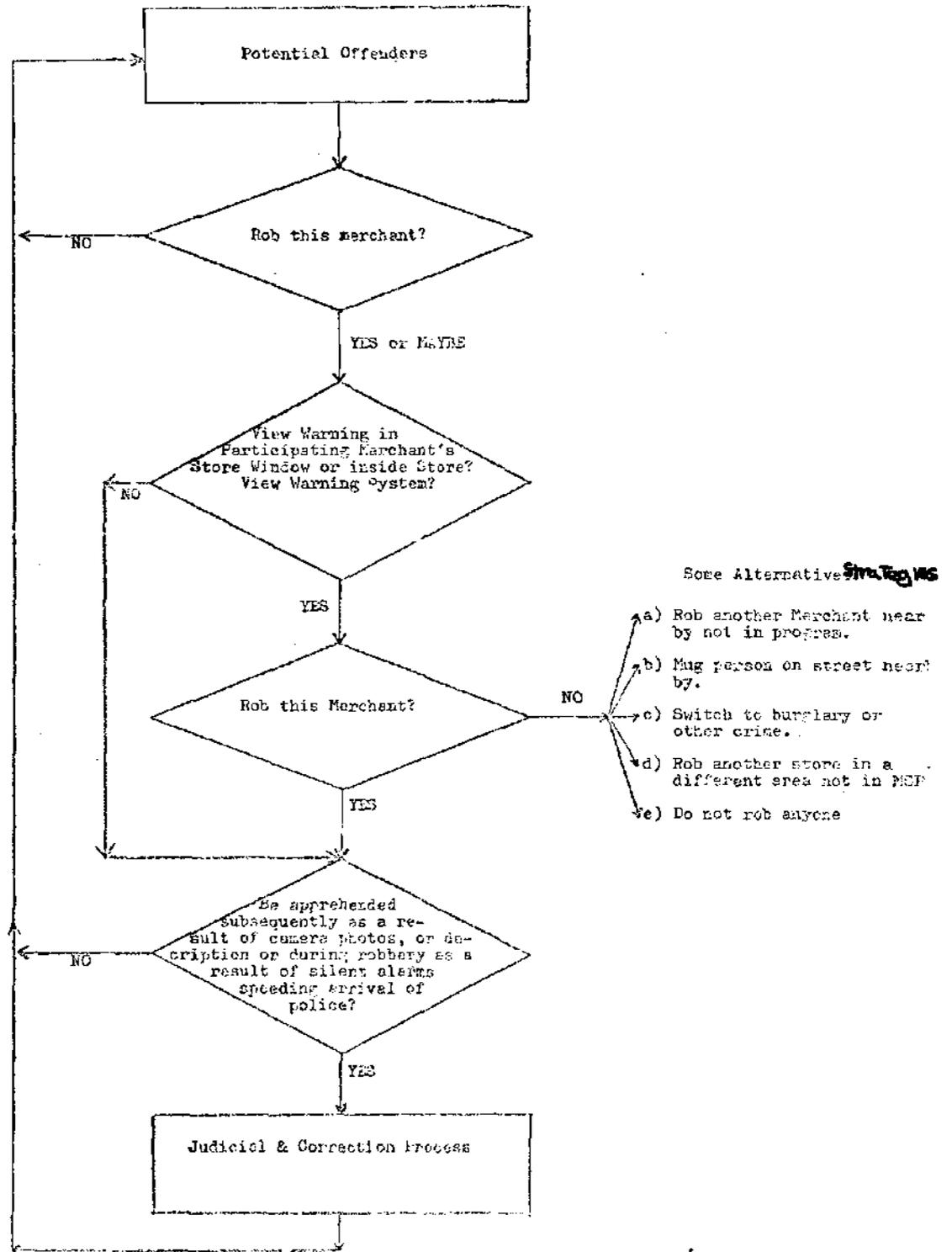
The casual process by which the MSP sought to prevent crime is shown in Figure 1. The process model starts with the assumption that potential offenders, contemplating robbing a particular merchant, might view a Merchant Security warning (in a window or inside the store) and be deterred from robbing that merchant because of the fear of apprehension based on the warning's message or observation of a camera. In one sense, displaying a sign or no sign may be the only definable program attribute or treatment, effect since the offender cannot discriminate at this stage as to the effect of the installed equipment. The warning used in the program, shown in Figure 2, "THIS STORE IS PROTECTED BY SECURITY DEVICES NOT UNDER EMPLOYEE CONTROL," does not make known what the security devices are, or what they will do. In this case, a potential offender, reading the warning, would not know if these included a camera system protecting against robberies or shoplifting, or a burglary alarm system.

A question to be asked then is whether it is possible to prevent in a global sense (say, reduce the total level of robberies, burglaries and larcenies in a precinct) or to deter persons from committing crimes in one area or of one type (say, store robberies) as compared to merely causing a displacement to other locations or a shift to other crimes (say, street robberies to burglaries). In either case, participating merchants benefit from such warnings but other persons may be disadvantaged by a compensating level.*

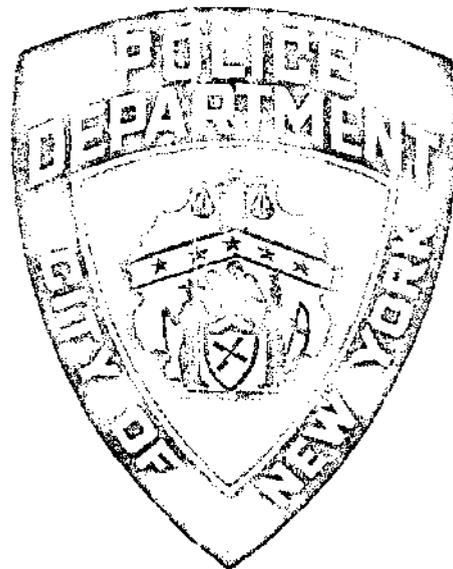
* The maximum displacement potential is 100 percent, unless by being forced into becoming mobile, offenders learn new crimes, more profitable locations or easier "takes". But recent experiments suggest that some crimes maybe "stifled" and that displacement is less than a one-to-one relationship. See Rappetto, T. "Crime Prevention and the Displacement Phenomenon", Crime and Delinquency, forth-coming, January 1976.

MSP: MECHANISM TO PREVENT CRIME

Figure 1: PROCESS MODEL FOR OPERATION OF MERCHANT SECURITY PROGRAM (on Offender)



MERCHANTS SECURITY PROGRAM



THIS STORE
PROTECTED BY
SPECIAL SECURITY
DEVICES NOT UNDER
EMPLOYEE CONTROL

NEW YORK CITY
POLICE DEPARTMENT

JOHN V. LINDSAY, Mayor

DONALD F. CAWLEY, Police Commissioner

The issue would be somewhat simplified, however, if criminals committed crimes of a single type at a given stage in their careers. Then if one could prevent crimes of one type, the displacement effect to other crimes could be discounted. For this evaluation, we could assume this to be the case-, a priori, as compared to other economic crimes. If these criminal profiles or typologies were different (say, different age groups, different stages of criminal careers, different outlooks to crime), the deterrent effect of Merchant Security could focus on store robberies.

Although the more professional economic crimes, like hijackings, bank robberies, and sophisticated burglaries seem to be associated with age, the age-specific crime rates for robberies and burglaries in New York do not show a marked difference. In both cases 70 to 60 percent of persons apprehended for these crimes are under 25 years of age. Other findings show that robbers and burglars in New York are about equally mobile. For example, a survey of 1969 criminal records showed that some 45 percent of both crimes were committed at locations less than one mile from the offender's residence, about 65 percent at locations less than two miles, and 65 percent less than five miles.* Hence on the limited grounds of age and geographical mobility, it does not seem possible to exclude the possibility that offenders deterred from committing store robberies will not commit burglaries or street robberies as a substitute, if "the opportunity presents itself and the probability of apprehension seems low.

With any local crime control program there is also the possibility of neighborhood displacement or halo effects. In the case of a halo effect, all shops and all persons in an area may benefit by the result of the Merchant Security Program by deterring criminals from frequenting that area. Then a comparison of relative robbery rates in participating and non. participating stores in a Merchant Security area may underestimate program effectiveness since Merchant Security reduces the victimization potential for both groups. On the other hand, if robbers merely move from store to store in an area and select for victims those that do not have a window warning, or move to an adjoining business district, there is merely a displacement effect. A comparison between participants and non participants then overestimates the overall program effectiveness. Then too, the different deterrent measures—alarms, cameras, both—may yield different effects if potential offenders see and assess the effects of these different systems.

A couple of other considerations come to mind. For one, Merchant Security might be selectively effective in some kinds of communities while not in others. For another, special anti-crime programs like the Mounted on 125th Street, TPF, and City Wide Anti-Crime may be operating selectively in the test areas and cause uncertain, non-random effects.

EVALUATION DESIGN

In any evaluation design, the dependent variables to be measured or bases of evaluation should be related to the defined objectives. They should also be tied to technical and other performance factors that effect the extent to which desired changes are achieved (or are achievable). These variables are thought to "be effected by the endogenous influences of the program.

* Berkowitz, M. *The Social Costs of Human Underdevelopment - Case Study of Seven New York City Neighborhoods.* New York: Praeger. 1974 p168-169.

Many basis of evaluation are possible. Two main effects, each having several component are:

1. Observable Effect on Crime

- a) Effect on the number of robberies within participating stores (a local measure)
- b) Overall effect in preventing crime in the neighborhood
- c) Effect on apprehending robbers
- d) Productivity (cost effectiveness) relative to other modes of crime prevention

2. Value of the Program as Perceived by Participants

- a) Willingness to assume costs after the MSP subsidy ends
- b) Increase in sense of personal security
- c) Change in attitude toward the police, toward crime prevention, and toward the city

Input Factors

The above output pleasures are dependent on how well the program operated, that is input factors like: project management including timely payment of vendor bills; technical and economic performance of the equipment, including failure frequency and equipment down time, response time, and cost of operation; willingness of merchant to activate devices. Input factors are, of course, always interactive themselves, For example, good instruction in equipment activation but poor equipment placement might result in a large number of false alarms that necessitate a radio car response, Since in progress robberies are typically treated as high priority jobs and receive a multiple car response, placement of many (faulty) silent alarm devices could conceivably denigrate police service in the precinct.

Cost-Effectiveness

The cost-effectiveness of the MSP can be gauged relative to other modes of crime prevention and in terms of its social benefits, I plan to discuss the relative benefits of alarm systems later in the paper and will for now explore the more global issues of how the city might consider the value of the program.

Let us say that after all displacement effects were considered, the crime statistics developed indicate that there were 10 fewer mercantile robberies among 50 participating merchants in a precinct in six months relative to the control area in the same precinct, whereas

in the six months prior to the program, robbery rates were the same. Then 10 robberies could be said to have been prevented. If we knew that a store robbery in that precinct resulted in an average loss to a merchant (or insurance company) of \$1500, then a savings of \$15,000 might be said to have resulted from, the project in this precinct (plus any potential injuries or deaths foregone). If the total equipment cost (amortized installation and equivalent rental) per installation were \$25 per month, then for the 50 installations, the benefit-cost ratio would be $\$15,000 / (50 \times 325 \times 6) = 2$. This means that the project benefits, in dollar terms, are twice as high as its costs. In another precinct, the benefit-cost ratio probably would be different, But if we could develop a set of benefits, costs and ratios for participating precincts, these results could suggest in which neighborhood types the program might be most useful. If the calculations were repeated by store size or type of store within a precinct, we would also be able to say something about the relative productivity of robbery alarms (or warning signs) by merchant size and type.

Some sophistications or imputations might be possible, Say five robbers were apprehended in a precinct as a result of Merchant Security and that each commits five crimes a year. Then 25 incidents might be deterred if these robbers were convicted and sentenced to a year's term. The dollar value of these arrests might then be $\$1500 \times 25 = 337,500$ annually. This additional benefit could be then used to revise the benefit-cost ratios discussed above.

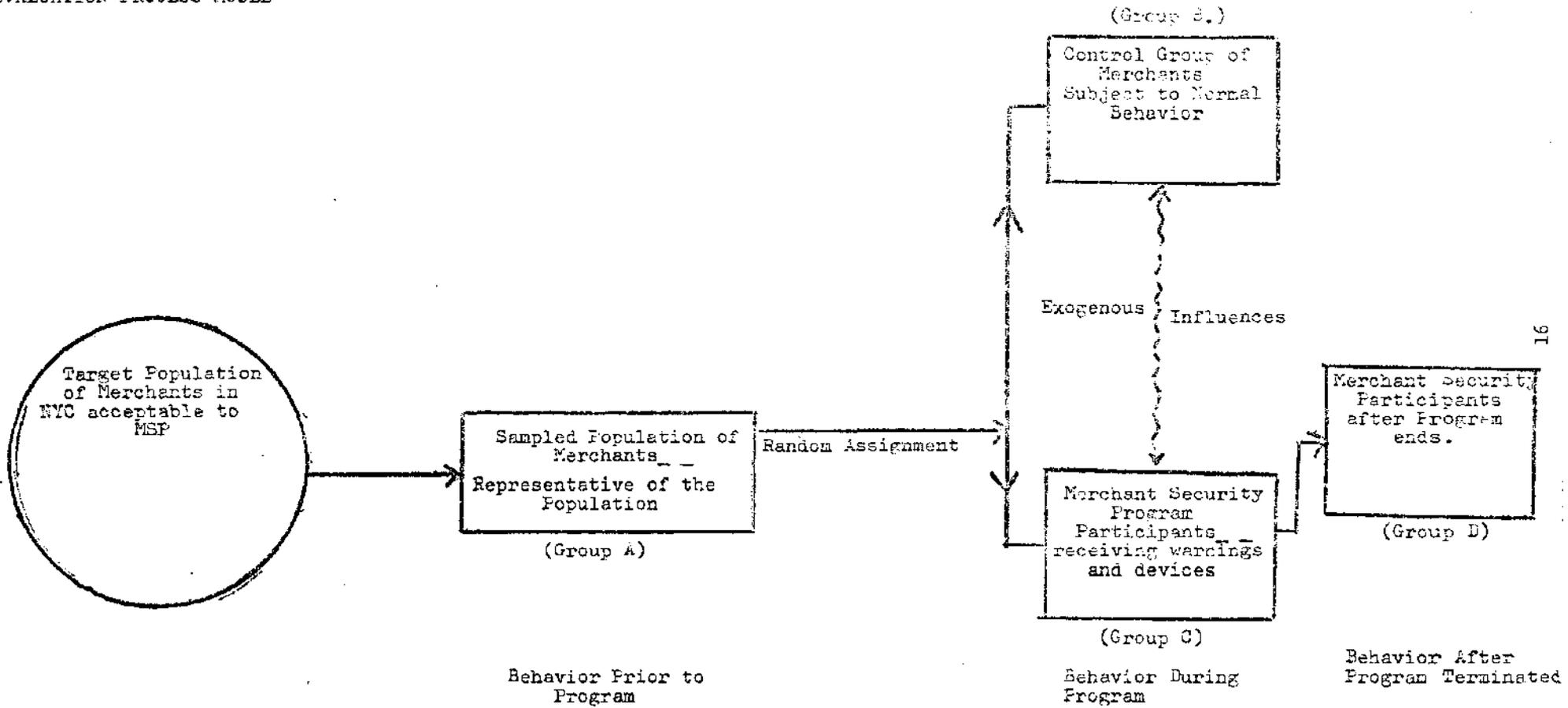
In order to evaluate the MSP, we must estimate what the behavior (of merchants and of offenders relative to those merchants) would have been without the security warnings or devices and then compare this with the observed behavior during the program, and after the program is terminated. In most formal experimental designs merchants having similar or definable characteristics would be randomly assigned to participant and non participate (control) groups, This would give rise to the evaluation process model in Figure 3. Here we would want to account for differences in characteristics of the merchants and treatments provided therein, as well as to compare the average performance of groups A, B, C, and D with regard to the evaluation bases given above.

Unfortunately, we are unable to perform any of the desired measurements cleanly. To do a good evaluation/ it is necessary to structure the evaluation design prior to the beginning the study. The design then outlines the hypotheses to be tested, the data to be acquired, the statistical techniques to be used to infer answers from the data, as well as the operation of the program. None of these conditions existed as regards the evaluation" performed herein.

And, as with many experimental programs in practice, the press to show positive programmatic results, rather than to provide information in the way of answers to questions about potential programmatic results, seems to have taken precedence in the Merchant Security Program. The responsibility for this decision must be

Figure 3.

EVALUATION PROCESS MODEL



spread across many layers of government. In effect many people misunderstood the nature of the pilot project or took the publicity concerning the establishment of the program as more important than the structure of the program. For example, instead of spreading the program over 12 precincts for 14 months, it might have been, more valuable to concentrate the program in fewer areas for a longer period of time using a classical randomized assignment of merchants to participant and control groups. Similarly, a more easily understood attention-getting, and fear-inducing warning sign might have been designed as a deterrent.

The evaluation presented here is an attempt to make do with the best data which could be compiled a posteriori to the program's inception. It is clearly not a formal experimental design. And it does not seek to control for the characteristics of stores (size, business type, prior crime history, location) that differentiate participation in the program and could lead to different behavior. Hence, we cannot say whether big stores or small stores improved more in relative or absolute terms. Our design is based on comparisons of outcomes of groups of merchants rather than on the consideration of how particular merchants fared.

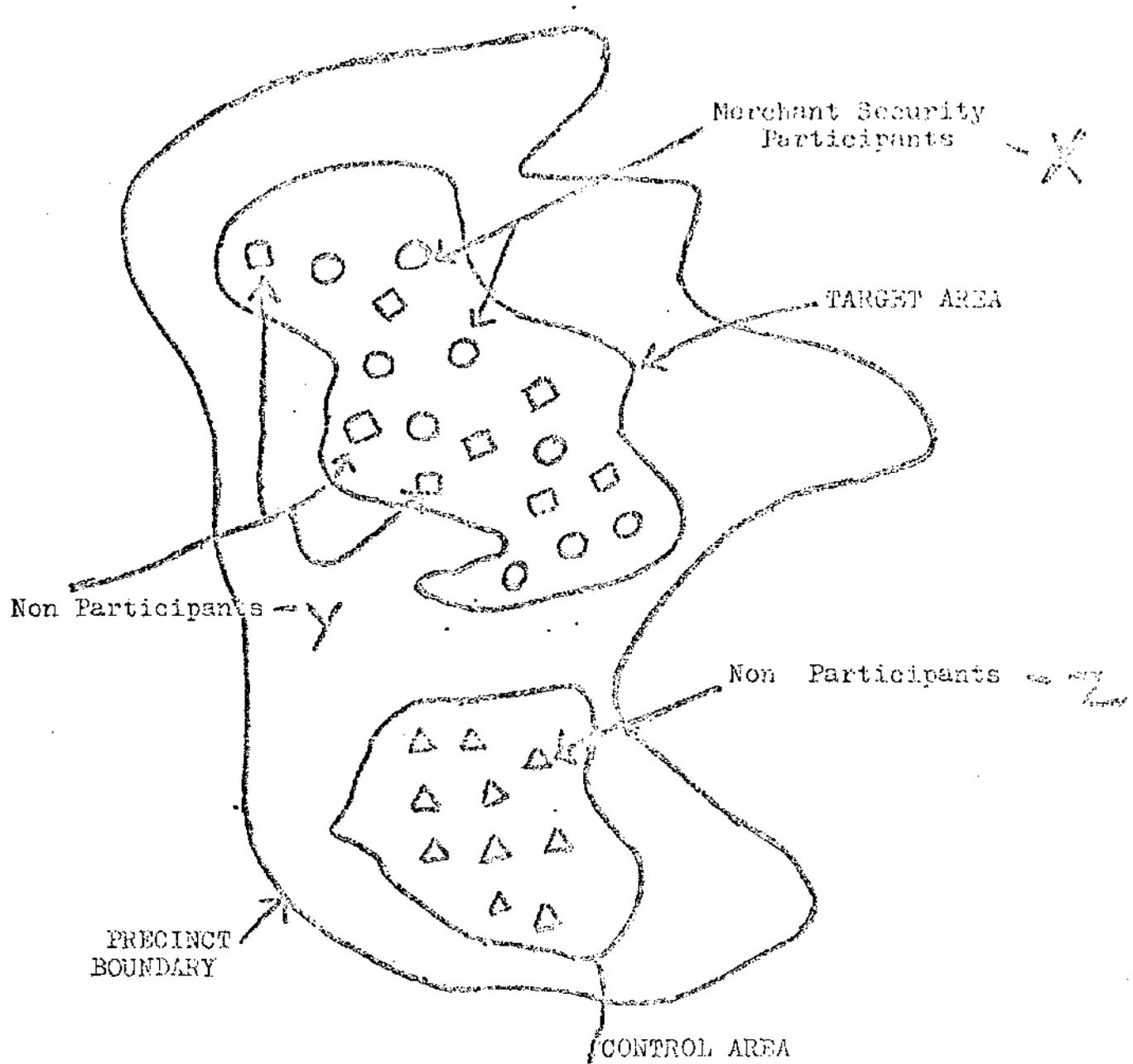
We seek to test the following principle hypotheses with regard to effects on crime;

- 1 . There was a perceptible change in the crime incidents of stores participating in the MSP that was significant relative to non-participating merchants in target areas and control areas,
2. The change in crime rates was attributable to participation in the MSP,
3. The type of participation (security device) influenced the change in crime.

For each precinct I intend to look at how "participating merchants" (group X) fared relative to "non participating merchants in the same area" (group Y) and how they fared relative to merchants in a somewhat comparable control area" (group Z) perhaps ten or more blocks away. This gives rise to comparisons as in Figure 4 below.

Figure 4

CRIME COMPARISONS - MSP



Let us say that there are X, Y, and Z merchants in groups X, Y, and Z. Then if the incidence of crime for these groups is x, y, and z, we seek to compare victimization rates $\frac{x}{X}$, $\frac{y}{Y}$, $\frac{z}{Z}$ or changes in

these rates overtime (t), i.e., $\frac{\delta x}{\delta t} \cdot \frac{1}{X}$, $\frac{\delta y}{\delta t} \cdot \frac{1}{Y}$, $\frac{\delta z}{\delta t} \cdot \frac{1}{Z}$

FINDINGS

There are two distinct factors in discussing the effect of the MSP on crime. One is the observable statistical change in criminal incidents. The other is the change in the psychological sense of personal security perceived by participating merchants and others. These effects are not necessarily in agreement and in assessing the success of the program, it is well to question which is the more important of these measures. That is, although the MSP may act only as a placebo for preventing crime, it may improve the sense of personal safety and result in very positive changes in participant actions and attitudes. For example, interviewed participating merchants said that they felt a greater sense of control over their environment and destinies as a result of their ability to simply press a button to summon the police. Whether the police could actually apprehend an offender seemed to be irrelevant, but many participants felt that they were getting special individual attention.

In the discussion of an evaluation design for the Merchant Security Program, a number of statistical measures were described that would be used to attempt to tease out the effect of the pilot program on preventing robberies and other crimes. The reason for including other crimes, like burglaries and larcenies, essentially reflected the feeling that the warning placed in participating stores suggested that the devices may activate at night when the store is closed or be used to maintain surveillance on potential shoplifters during the day. Secondly, there might be isone spillover if the target areas became known by offenders as protected areas.

The methodological focus of the foregoing analysis was to compare changes in victimization rates among participants over comparable minimum periods before and after equipment installation, ~~among~~ participants and non-participating merchants in the target area during the period of operation of the equipment, and among participants and nor, participants in designated control areas of some similarity. These changes would also be compared to gross changes in criminal activity in the target and control areas and the precinct as a whole,

A detailed survey was undertaken to obtain the relevant crime data from the twelve concerned precincts (see Appendix C). Some crime prevention officers in these precincts expended a substantial effort in supplying the desired information, others prepared, estimates that had a number of errors or inconsistencies. This before and after participation survey was supplemented by materials obtained from the NYPD Crime Prevention Section, a field inspection of each of the target, and control areas, and interviews with some 30 percent of participating merchants. These multiple sources provide a partial insurance against fractional or unreliable data but give somewhat contradictory information.

The basic finding of the above analysis is that the data is inconclusive for discerning any reduction in robberies, burglaries or larcenies in the 523 participant stores or 12 participant target areas that can be uniquely associated with the program. This is not to say that the program does not have any effect on crime but the statistical analysis does not show any, despite interview results which are encouraging. No clear halo or displacement effects on non-participants were observed either. This finding should not have been unexpected.

Some statistics in particular precincts showed reductions in hold-ups and other crimes among merchants that may be a direct result of their acquisition of a Merchant Security silent alarm, and/or camera but there is little specific quantifiable evidence to support this as a general conclusion. There were, for example, in certain precincts more substantial reductions in economic crimes against non-participating merchants in the target areas or control areas. And in some instances, decreases in inside robberies in the target area seem to be balanced by increases in outside robberies in the same area. These results pertain whether one looks at crime rates normalized by the number of merchants in an area or at the gross figures. Some data is presented in Table 5 supporting these conclusions.

The incident data is too insignificant to be able to make any strong statements about the relative efficiency of silent alarms compared to cameras, Superficially, however the data suggests otherwise. Of the 45 robberies of participants during the period July 1, 1973 to August 1, 1974 some 13 took place in stores having only an alarm, 17 in camera locations, and 15 in stores with both devices* During the same period, some 306 participating merchants had alarm systems, 80 camera, and 137 both devices. Hence some gross probabilities of robbery by equipment type might be calculated as:

Alarms Only	-	13/306	x	100%	=	4%
Cameras Only	-	17/80	x	100%	=	21 %
Both	-	13/137	x	100%	=	11%

But I believe that these gross victimisation probabilities are misleading since all installations were not completed at the same time and because they say little about the robbery potential by store type nor do they note the prior experience of the stores robbed. (See Table 8). There are other non-random factors here too. For example, seven robberies took place in participating stores in Precinct 28 in Harlem during February 1974- This precinct had 17 of the total 45 robberies and, unexplainably subscribed to an extremely high proportion of cameras relative to alarms in the program, as a whole. (Sixty-six percent of merchants in Precinct 20 chose camera or the camera-alarm combination compared to 23 percent city-wide).

* The overall performance of the expanded Merchant Security Program seems slightly better, perhaps because the most robbery prone precincts were included in the pilot project. There were 87 robberies in the 2,849 stores subscribing to the expanded project from April 1, 1974 through April 1, 1975.

Table 6

Summary of Changes in Reported Incidents in Participating Stores

Precinct	Number of Participating Merchants in Precinct (Nov 1974)	Number of Robberies			Number of Burglaries			Larcenies			Months of Data*
		Period 1 R1	Period 2 R2	Diff. R2-R1	Period 1 B1	Period 2 B2	Diff. B2-B1	Period 1 L1	Period 2 L2	Diff. L2-L1	
M75	34	2	0	-2	2	1	-7	0	2	+2	4
29	24	3	1	-2	2	2	0	0	2	+2	6
30	23	0	2	-2	0	0	0	0	0	0	8
42	27	6	7	+1	10	14	+4	2	6	+4	8
44	59	--	na	--	--	na	--	--	na	--	--
47	49	0	0	0	0	2	0	0	0	0	7
66	42	0	1	+1	2	6	-2	1	0	-1	4
72	53	6	2	-4	20	7	-13	--	na	--	12
77	22	0	1	+1	3	2	-1	2	4	+2	2
103	47	5	5	0	7	2	+1	9	15	+6	9
112	28	0	0	0	5	9	+4	1	0	0	8
113	39	--	na	--	--	na	--	--	na	--	--

* Data is mainly from period 1/73 - 6/74 but varies by precinct since all equipment was not installed at the same time.

na = Not Available

Changes in crime incidents described by merchants differ from official police estimates, perhaps partly because of unreported crimes. But it is possible that interviewed persons did not, know of all incidents or were imprecise as regards to time frame. Only about 70 percent of those interviewed responded to questions concerning the previous crime in their stores but the results, however, are encouraging. Some 6b percent of the respondents said that they had not been held up in the two years prior to the MSP: 20 percent had been held up once,

* Unfortunately, there are no local area or city-wide robbery rates for comparison with date in Table 4 by business typo. Most of the above incidents occurred weekends, in the latter part of the month, between 5 P.M. and 10 P.M.

six percent twice, and six percent three or more times. The medium loss was given at \$220 per incident with one third, of the losses under 5:50. Compared with those figures, some 86 percent of the sampled merchants had not been held up since joining the MSO (on the average about eight and a half months), 12 per cent were held up once, and three percent two times or more. For burglaries, some 71 percent of the responding merchants said that they had not been burglarized in the prior two years: 17 percent said they had one burglary, four percent had two incidents, and seven percent had three or more burglaries. After subscribing to the MSP, merchants said that they experienced some reduction in burglaries. Some 77 percent said that they had no burglaries, 30 percent had one burglary, three percent had two burglaries, and five percent experienced three or more burglaries. Additionally 20 percent of the interviewed merchants said that they had noticed a decrease in shop lifting as a result of participating in the MSP.

Some of the difficulty in arriving at a definite conclusion concerning the program's unique effectiveness is due to the presence of other crime prevention programs in the target areas. We have attempted to get some hold on the extent of these special program by asking precincts to tell us the level of effort involved in them, But we are not able to say anything statistically about the value of mounted police officers, special Robbery Alert Teams, or Anti - Crime teams in street clothing relative to warnings placed in merchants windows about silent alarms. In Precinct 26, for example, nine store incidents occurred in January 1974 among MSP participants. As a result of this situation and a general rise in crime in this precinct's shopping area, NYPD assigned a detail of 30 highly visible uniformed officers along with a special shotgun carrying Robbery Alert Team, which uses a communications system resulting in response times under one minute. These very visible actions, coupled with a few arrests in the business area, apparently ended the spurt of store robberies and no incidents were reported in the same locale until October 1974.

Although the precincts selected for the program were supposedly among those with the highest increases in commercial robbery rates over 1971-1972 in the city, our interviews with individual merchants who participated in the program showed that they had little or no robbery/burglary/larceny experience as discussed above. With this the case, the statistical measurement of program effectiveness is immediately put into question. If participants in a two block commercial area had few prior hold-ups, then does a small change in absolute numbers constitute a significant effect attributable to the program. Stated another way, the main statistical problem in the analysis results from having too few incidents among participating merchants in a single precinct to be able to say much about, the cause of those changes. The change from three to two, or two to one robberies, or zero to zero over six months among 50 participants cannot be considered a non-random occurrence even though it involves a 100% or 200% absolute reduction.

Because installations were not completed in all precincts at

the same time, It is really inappropriate to aggregate the incidents of all participants unless these are normalized to the same time frame, i.e. robberies per month per participant. But little is gained by this approach. Aggregated precinct robbery rates per participant per month of participation, compared to those of prior periods of non-participation, show little difference on the whole, Again this should not be surprising since known seasonal and secular variations in economic crime over the last year are unaccounted for. A number of other issues also cloud the analysis. For example, our interviews with merchants and examination of their stores, showed that some 15-25 percent of participants did not prominently display their Merchant Security warning signs or did not display them at all.

Willingness to Continue in the Program

To the merchant who makes a financial outlay each month to pay for the use of protective devices, the assessment of the value of MSP is direct and simple. He either feels the program is useful and continues to buy its services or he terminates the service. This simple evaluative measure is probably the most important single indicator of the program success. To the small merchant which the MSP especially sought out, this is perhaps most clear. It ultimately reflects the political acuity of city administrators and legislators to their constituency in organising the subsidy program and measures their ability to operate the MSP effectively. On these grounds the pilot program must be said to be a resounding success. To the Crime Prevention Section in NYPD must go some vote of confidence in being able to well manage a complex innovative project.

Of the initial 549 merchants subscribing to the MSP program, more than 90 percent regained with the program over the 14 month period. Only two of the 26 initial subscribers who dropped out, cancelled because of dissatisfaction: the others Lad fires or went out of business for other reasons. Of the group that remained in the program about 15 percent were not paying their monthly bills regularly, with the largest portion of the non-paying merchants in ghetto neighborhoods.

Secondly, merchants continued to subscribe to the rental of security equipment in large numbers when the federal subsidy of monthly maintenance charges ended after 14 months despite the fact that their own contribution increased substantially from \$6 to \$15 per month for an alarm and from \$8 to \$11 for a camera. Seventy-one percent of those initially subscribing to "alarms only" have continued, 6.1 percent of those using "cameras only" have continued, and 33 percent of those with both devices have continued. Overall, 60 percent of the program participants are now absorbing the full monthly maintenance charges.

Perceived Sense of Personal Security

These very positive reactions to the MSP are also reflected in statements of merchants toward the perceived effect of the program on their own personal security. Seventy percent of those interviewed said that they felt more secure in their stores because of the MSP program and 28 percent said that they also felt safer on their way to and from the store compared to a year before. Nine percent stated that they had made changes in their manner of doing business, like staying open later, as a result of installing the MSP equipment. These are quite positive statements given that some 42 percent of merchants felt that crime was increasing in their areas, and 37 percent felt crime was relatively stable.

Effect on Crime Consciousness, Concern for Neighborhood.

The MSP appears also to have had a positive affect on increasing the awareness of businessmen toward crime and their concern for the neighborhood. Forty percent of respondents belong to a merchant association and about half talked with other shop owners about the program. Seventy-seven percent felt that the MSP program had made merchants more crime conscious and 51 percent said that the block association had been strengthened or merchants unified because of the program.

Hence, although it appears that the objective of reducing crime by use of the security devices has not been clearly achieved, the program has improved the perceived sense of safety of merchants. They now feel more secure, feel that they are participating in personally controlling crime, and have a more rapid and individual means of achieving police service. This psychological sense of security is probably far more significant than any precise reduction in actual crime for it ultimately determines the life blood of the city through the actions of its citizenry. However, the city has a clear obligation to indicate the program's measurable effect on crime lest it induce a false sense of security amongst merchants that may actually place them in greater hazard.

Effect on Attitude Toward Police and City

Finally-, merchant attitudes toward government seem to have been bettered by the MSP. Seventy percent of those interviewed said that their attitude toward the police was good and 25 percent stated their attitude had improved as a result of participating in the program. While only 27 percent of shop owners said that their attitude toward the city was good, 35 percent stated their image of the city had improved by virtue of the program.

Effect on Apprehending Robbers/Technical Performance of the Equipment

The means by which the likelihood of apprehension is increased using silent alarms and cameras are:

- a) by reducing the response times of the police
- b) providing better descriptions of offenders for subsequent capture and identification.

On both of these grounds, the MSP showed minimal success, Of the eight arrests made of offenders robbing participant stores, none were made as a result of use of the merchant security equipment. One arrest was made by an off-duty police officer in the area who stopped a fleeting suspect. But no identifications were made as a result of photographs taken nor were any arrests made by officers as a result of alarms. There are several good reasons for these results which bear on the potential of protective systems. For one, as disclosed by the interview survey, merchants were not inclined to activate the devices while the robber was in the store from fear of harm.

The effectiveness of the alarms in speeding police service was also limited. For the sake of clarity, I will call the time from when an incident occurred in a store until the time that the police arrive at the scene as "Incident Response Time," The average "incident response time" to some 599 silent alarm transmissions through June 1974 was probably over 10 minutes. On the average it took some 3.5 minutes for transmission of an alarm from the central alarm station to the NYPD Communications Bureau and 4-9 minutes for NYPD to dispatch a police vehicle. The latter times do not include the travel time of a dispatched police vehicle to arrive at a store since police officers do not normally call in immediately on getting to a crime scene, nor do they include the time from when the incident occurred in the store to the time when the alarm was triggered. An incident response time approaching 10 minutes is wholly unacceptable for apprehension at in progress incidents. The record of reporting and dispatching officers to the 599 activations* was:

6 34 240 144 90

0-1 min 1-2 min 2-5 min 6-10 min over 10 min

Some of the reasons for unusual delays were breakdowns in the MY PI-911 system and the unavailability of cars. But, in general, the response time pattern shows limited potential for cutting the time of arrival with the present alarm system operating through a central station to a level that offenders could be apprehended while still in the store. Our survey of merchants robbed indicated that most of these incidents took less than a minute and almost all less than five minutes except where a safe was to be opened or many customers were also being robbed.

* There were approximately 1.5 - 2 false alarms per participating merchant throughout the program. These were activations when there was no criminal incident. In most of these cases, merchants were simply trying out the equipment or testing the police response, but many activations were accidental also. NYPD was able to reduce false alarms as the program went on by an education process.

Poor technical performance of some of the equipment did not appear to be responsible for the few apprehensions. Based on interview and alarm company reports, the equipment was inoperable relatively infrequently, repaired quickly, and instructions for use of the equipment were satisfactory. But there were a great many problems with the super 8mm cameras used in the program. Inadequate lighting conditions in stores, and improper or restricted placement of cameras resulted in poor quality pictures. Initially the quality of film used was also poor. Financial considerations also decreased the effectiveness of using this particular camera. The super 8mm cameras were geared, originally, to run continuously and take pictures every 20 seconds. Optionally the cameras could be activated manually. The cost of a roll of film (\$6) was too expensive for continuous operation and the film could not be easily changed so manual activation was used. But since the camera was not directly connected to the central alarm station activator, it did not summon the police, and in any event, the merchant was not inclined to press the activator during a hold-up. Few good photos were taken of actual hold-ups.

POTENTIAL DETERRENT EFFECT OF WARNINGS AND SECURITY DEVICES -
THE OFFENDER POINT OF VIEW AND IMPLICATIONS FOR FUTURE
EQUIPMENT EXPERIMENTS

In assessing the potential of the Merchant Security Program for deterring robberies, I want to review some known personality characteristics of offenders who commit robberies and then describe the findings of meetings held with NYPD Crime Prevention staff, myself, and ex-hold-up men at the offices of the Fortune Society, a rehabilitation agency for ex-offenders.

Robberies, like burglaries, are known to be the product of circumstance and opportunity where the likelihood of apprehension is low. The robber who attempts store robberies where the dollar gain of each incident is not high, is generally an amateur or casual thief as compared to a professional. Although he may make his living at it, more usually he supports his habits and just survives from a life of crime. His trade requires relatively little skill, and in New York City, has relatively light consequences. Although in these robberies the threat of injury is the tool of the offender, robbers exercise a high degree of control and in actual practice violence is relatively low. Our information that NYC robbers are drawn largely from the low income, minority population, and are young and slight in build is consistent with the input from psychologists who view use of a gun related to proving one's manliness and worth by forcing others to do their will.

The above characteristics were confirmed by the physical description of persons who robbed participating stores through April 1974. This profile for the 38 incidents included:

Male/ Black	-	37 persons
Male/ White	-	1

Approximate Age:

16-20 - 22

20-30 - 16

Average Build: - Light

Weapons (guns) - 37

There were no injuries to merchants or customers in these robberies. There were, however, two homicides of merchants in October 1974. In the latter cases, merchants did not make any attempt to activate alarms.

The experience that we have from various studies shows that accepted deterrents do not seem to influence casual robbers. These offenders do not appear to be very rational, do not fear consequences of their actions, or are able to block out this fear during a crime after evaluating their ease of access and escape from the crime scene and ease of taking money from their victims by threat.*

These characteristics were also affirmed by our discussions with ex-hold up men in 1974. The sense of the ex-offenders was that low level store robbers rarely look at window or shop signs, or if they do so, do not believe them. In essence, hold-up men would not be deterred by a sign warning that the store was protected by security devices, and definitely not one so unspecific and unclear as the one NYPD was using.

There was less agreement about whether the observation or knowledge of the presence of cameras or alarms would have any deterrent effect. But the general view was that bank robberies and hold-ups in large shops and supermarkets have not been affected by the presence of cameras". If anything, some ex-offenders commented, cameras might encourage or challenge criminals. And the psychological desire to gain attention and be caught was also spoken of. There was little consensus concerning the deterrent effect of silent alarms. For one, there was little knowledge of how such systems work and of how much they could speed the arrival of the police to a crime scene.

Based on the crime statistics developed for the MSP, I think we are in a poor position to make any statements on the relative effectiveness of robbery alarms at \$15 per month compared to police officers at nearly 312 per hour for preventing store robberies. Police officers assigned to cover crime prone locations usually work in teams of four or five making the effective cost in excess of 3500 for a single tour of duty, or 350 plus an hour.

I have not seen any consistent serious work that indicates the incremental potential of traditional police deterrents like maximum visible police presence or aggressive patrol. Those patrol experiments that have been performed have typically noted little improvement or shown subsequent displacement effects. And I recently heard a story of how two precinct anti-crime officers spent an entire tour observing a suspicious person who turned out to be a city-wide anti-crime officer in disguise. Nevertheless, it may be well to question how merchants

* For example, see Conklin, J., Robbery and the Criminal Justice System. Philadelphia, J.B. Lippincott, 1972.

might spend \$150-\$200 a year on crime control as an alternative to silent alarms or cameras to increase the fear of apprehension or limit the take. For one, merchants could buy crime insurance, for another they might invest collectively with other merchants to hire special guards for weekends, or for hours near closing time when most robberies seem to occur. Or they might consider minor architectural modifications to make intrusion or escape more difficult or time consuming.

NYPD is at the present time evaluating a number of techniques to increase the likelihood of identifying suspects through automated mug shot storage and retrieval systems and to increase the probability of identifying recovered physical property by engraving a unique serial number. But these are after-the-fact systems that suffer from the main fault of most silent alarm or inexpensively operated camera systems, including the ones used by the MSP, in that they depend on the victim for activation. In the case of the hold-up alarms or cameras, the threat of injury by the robber deters the victim from activating the device until the robber has escaped.

With this problem in mind, NYPD, is currently experimenting with a multi-\$100,000 communications system which by-passes the normal communications center and signal a nearby police vehicle directly on automatic activation in a robbery. Here electronic devices placed in a few police cars receive the transmissions from encoders located in cash drawers of merchants of high crime areas. When the last bill is removed, the alarm is automatically transmitted* The program, called Robbery Alert, has been able to reduce the

average police response time to come 45 seconds and by doing so has achieved apprehensions in most incidents occurring in the areas that these special teams are operating. But this is an extremely expensive approach both in hardware cost and manpower. For example, a team of officers must restrict their patrol to about a ten block perimeter in order to attain incident response times under a minute* Such systems also lack the flexibility to track offenders who make their getaway quickly.

SELECTED BIBLIOGRAPHY

Chaiken, J., M, Lawless, and K. Stevenson. The Impact of Police Activity on Crime: Robberies on the New York City Subway System New York: New York City Rand Institute, 1974.

Conklin, J.E. Robbery and the Criminal Justice System Philadelphia: J.B. Lippincott, 1972.

Curtis, B. Security Control - External Theft. New York: Chain Store Age Books, 1973.

Dahmann, Special Crime Attack Team: A Case Study in the Examination of Police Patrol Effectiveness. Washington, D.C.: U.S. Department of Justice, Law Enforcement Assistance Administration, National Institute of Law Enforcement and Criminal Justice, 1975.

Davis, E.M. and Knowles, L. "A Critique of the Report, A Evaluation of the Kansas City Preventive Patrol Experiment," The Police Chief, June 1975 and several other articles in the same issue related to the experiment.

Einstadter, W. J. Armed Robbery - A Career Study in Perspective. Doctoral Dissertation, University of California, Berkeley, 1966. Ann Arbor: University Microfilms, 1973.

and

Feeney, F, / A. Wair. The Prevention and Control of Robbery: Davis: University of California, 1973.

Goodman, l., fit. al, A Study of the Deterrent Value of Crime Measures as Perceived by Criminal Offenders. Washington, D.C. Bureau of Social Science Research, 1966.

Hughes, M. M. Successful Retail Security - An Anthology. Los Angeles: Security World Publishing Company, 1974.

Kelling, J., et al., The Kansas City Preventive Patrol Experiment: A Summary Report. 'Washington, D.C.; Police Foundation, 1974.

Kingsbury, A. A. Introduction to Security and Crime Prevention Surveys. Springfield: Thomas, 1973.

Leonard, V.A. Police Crime Prevention. Springfield: Thomas, 1972,

Lewis, J. H. Evaluation of Experiments in Policing - How Do You Begin (Four Gases). Washington, D.C. U.S. Department of Justice, Law Enforcement Assistance Administration, National Institute of Law Enforcement and Criminal Justice, 1972.

Maltz, M.D. Evaluation of Crime Control Programs, Washington, D.C.: U.S. Department of Justice, Law Enforcement Assistance Administration, National Institute of Law Enforcement and Criminal Justice, 1972.

National Symposium on Law Enforcement and Technology, 4th. Research on Street Crime Control. Washington, D.C. : U.S. Department of Justice, Law Enforcement Assistance Administration, National Institute of Law Enforcement and Criminal Justice, 1973.

Oliver, E., and J. Wilson. Practical Security in Commerce and Industry. New York: Wiley, 1972.

Press, J., Some Effects of an Increase in Police Manpower in the 20th Precinct in New York City. New York: New York City Rand Institute, 1971.

Repetto, T. "Crime Prevention and the Displacement Phenomenon," Crime and Delinquency. Forthcoming, January 1976,

Salalyn, A. The Crime of Robbery in the United States, An Assessment of Studies and Related Data from 1965 - 70. Washington, D.C. : U.S. Department of Justice, Law Enforcement, Assistance Administration, National Institute of Law Enforcement and Criminal Justice, 1971.

U.S. Department of Justice, Law Enforcement Assistance Administration, National Institute Law Enforcement and Criminal Justice. Evaluation in Criminal Justice Program, Guidelines and Examples. Washington, D.C. : U.S. Government Printing Office, 1973.

Wilson, I. Thinking About Crime. New York: Basic Books, 1975.

Wolfgang, M.E., R.M. Figlio, and T. Sellin. Delinquency in a Birth Cohort. Chicago: University of Chicago Press, 1972.

Zimring, F.E. and G. J. Hawkins. Deterrence: The Legal Threat in Crime Control. Chicago: University of Chicago Press, 1973.

APPENDIX A
Description of Participating
Precincts
(Target and Control Area)

The Midtown South Precinct in Manhattan is bounded by Lexington Avenue on the east, by 45th Street on the north, by 9th Avenue on the west and by 29th Street on the south. Almost 23,500 people live in the .77 square miles that comprise this business oriented precinct. Even though it has a low population density, the 23 miles of streets in the precinct are crowded by the millions of people who pass through each day. The population of the precinct is predominately white (92%), with small representations of blacks (5%) and other minority groups (3%). The upper socioeconomic group predominates in the precinct, with most of the upper middle class residents living on the east, side of 5th Avenue and most of the lower class residents living west of 7th Avenue.

The emphasis in the business community is manufacturing for the nation and selling to and servicing the more than 2,003,330 people who pass through the precinct also each day. The precinct contains the Port Authority Bus Terminal, Grand Central, and Pennsylvania Railroad Stations, and the garment center, the theater district, the main Post Office: in New York, the main branch of the New York Public Library, Times Square, Madison Square Garden, Herald Square, and many small business establishments. In a real sense, this precinct is the center of the New York business community.

In 1973 there were 2,270 robberies in the precinct, 603 of which involved businesses. This represents 3.8% and 4.8% of the City wide totals respectively. There were 4,250 burglaries in the precinct that same year, 2,827 of which involved businesses. This represents 2.9% and 6.2% of the respective City wide totals. This figure reflects the highly commercial emphasis in the precinct.

The target area, for the Merchant security Program in the Midtown South Precinct was that part of 7th Avenue between 34th and 42nd streets. The control area, one block to the east, was on Broadway between 34th and 42nd Streets. The control and the target areas contain about the same number and type of stores. Of the 85 stores in the target area, 34 (40%) participated in the project.

The target and control areas are close to the 6th and 8th Avenue IND subways, the 7th Avenue IRT, the BMT the 5th, 6th, 7th, 8th and 9th Avenue bus lines and the 34th and 42nd street crosstown bus lines. The major tourist attractions of Times Square, the Empire State Building, Madison Square Garden and Herald Square either are contained within or are within one block of the target and control areas.

The large number of tourist attractions and the high volume of business leads to very high levels of traffic density in the area. Trucks, taxis, buses, cars and pedestrians clog the streets, especially at lunch time. Walking is frequently the fastest method of getting around in the area.

The stores in the area range from clean, expensive stores which carry high quality merchandise to dirty, expensive hot dog and hamburger joints. The upper floors of the many-storied buildings are usually devoted to business activities. In general, the stores that

carry the better quality merchandise are more likely to participate in the program. Although all of the participating stores had the Guardian stickers displayed, only 21 out of 34 had the Merchant Security Program sign in a prominent place. Factors such as this may be of significance in terms of the ultimate effectiveness of the program.

28th Precinct

The 28th Precinct in Manhattan is bounded by 5th Avenue (detouring west of Mt. Morris Park) on the east, 127th Street on the north, St. Nicholas and Manhattan Avenues on the west and Cathedral Parkway and west 110th Street on the south. Directly south of the precinct is the expanse of Central Park. Almost 53,400 people live in the .56 square miles that comprise this precinct—a relatively high population density, even for New York City. The eight miles of streets within the precinct are relatively deserted, except for the shopping streets. The population of the precinct is predominantly black (96%), with small representations of whites (3%) and other-ethnic groups (1%). Lower middle class and lower class individuals predominate in this precinct and the socioeconomic level of the residents is fairly uniform throughout the area.

The precinct is primarily residential, with major shopping areas to serve the residents. The quality of housing is generally poor, with many tenements and abandoned buildings. There is some low and middle income public housing in the area. The drug problem in the precinct is severe, especially around the target and control areas,

The 28th precinct is a high crime precinct in general. In 1973, there were 2,647 robberies, 248 of which involved commercial establishments. This represents 3.6% and 2.0% of the respective citywide totals. There were 1,502 burglaries, 380 of which were commercial. This represents 1.0% and 0.8% of the respective citywide totals.

The target for the Merchant Security Program in the 28th precinct was the part of 125th Street between 5th and 8th Avenues. The street is heavily congested, and on a nice day pedestrian traffic makes it difficult to walk down the street. The Apollo theater, a major attraction, is within the target area. The upper floors are usually occupied by residential units. The majority of the buildings on the street are four story brick structures in poor states of repair. There is a wide diversity among the stores in the area. The chain stores appear to be in better condition, busier and more prosperous than the other stores. The rate of participation in the program was high; out of 131 stores 98 (75%) joined. Many of the stores that joined were chain stores like Tom McCann, Buster Brown and Regal Shoes, McDonald's and Burger King, Blimpie, F. W. Woolworth and Lerner Shops. Many stores displayed the Merchant Security Program sign, but even more frequently the Guardian sticker was shown. Non-joiners tended to be either ineligible (banks, for example) or stores with lower quality goods.

The IND express stop at 125th Street and 8th Avenue and the IK? 7th Avenue express stop at 125th Street and Lenox Avenue are within the target area, as are the 125th Street crosstown bus and the 8th, 7th, Lenox and 5th Avenue Buses.

There is a great deal of unlicensed peddling in this area. There are street stalls, sometimes in direct competition with the store owners, all along 125th Street. This has led to tensions between the owners and the peddlers.

The control area is the one block on 116th Street between 7th and 8th Avenues. It contains 32 stores in a region that is one-third the size of the target area. There is an IKT express stop on 116th Street and Lenox Avenue and an IND local stop at 116th Street and 8th Avenue. The 7th and 8th Avenue and the 116th Street crosstown bus also serve the area.

Comparisons between the two areas may be dangerous since the control area has proportionately fewer stores with less diversity than does the target area. There are no banks, liquor stores, drug stores or chain stores in the control area. The area is less busy and less congested than the target area. A better match between control and target areas would be desirable.

The 30th precinct in Manhattan is bounded by the Hudson River on the west, West 141st street on the South, ST. Nicholas and Edgecomb Avenues and the Harlem River Drive on the east and 165th street on the north. Almost 74,200 people live in the .77 square miles that comprise this precinct. Although this may not appear extremely crowded, there are four large parks in this precinct so that the available land is somewhat less than might otherwise be expected. The population of the precinct is mostly black (67%), with a large minority of white (30%) and a small minority of other ethnic groups (3%). The community is predominantly lower and lower middle class. The area along Riverside Drive, overlooking the Hudson River, contains apartment complexes that appear to be in somewhat better condition than the rather run down buildings found in the rest of the precinct. Apparently, most of the higher socioeconomic status residents live along Riverside Drive.

There is little or no transient business along the almost 20 miles of streets in this predominantly residential precinct. The stores serve the resident population. The business areas are located along Amsterdam Avenue from 147th to 162nd streets, along Broadway from 141st to 165th streets and along St. Nicholas Avenue from 145th to 148th Streets. The buildings are generally between three and four stories and are not well maintained.

In 1973 there were 1,459 robberies in the precinct, 261 of which involved commercial establishments. This represents 2.0% of both categories citywide. The corresponding burglary figures were 1,829 and 284, representing 1.2% and 0.6% of their respective citywide totals.

The target area for the Merchant Security Program in the 30th precinct was that part of Amsterdam Avenue between 155th and 162nd Streets. Out of 77 stores, 23 (30%) elected to participate. Along the street in the target area were many boarded up shops and buildings. Low income tenements are frequent in this area, as evidenced by the general level of deterioration of the buildings. Many stores that appeared to be operating were closed early on a weekday afternoon.

There were few shoppers on the street and traffic in the area was moderate. The area is serviced by two local IND stops and by buses on 155th Street and St. Nicholas and Amsterdam Avenues. Congestion in the shopping area is not a problem. Only one of the eleven restaurants and none of the six bars in the area joined the program.

The control area is that portion of Amsterdam Avenue between 147th and 153rd Streets. It is separated from the target area by Trinity Cemetery. The 68 stores in the control area were, if anything in worse condition than those in the target area. The buildings were deteriorating, appeared to be less well kept and the residents of the area seemed to be poorer. People were hanging around street corners and around bars in the control area, a condition that did not exist in the target area. It may be that unemployment is higher in the control area.

The control area is served by one IND express stop and bus routes on 145th Street and on Amsterdam Avenue.

The 42nd precinct in the Bronx is bounded by Prospect Avenue on the east, East 169th street on the north, the Grand Concourse on the west and East 149th street on the south. Approximately 150,000 people live in the 1.56 square miles that comprise the precinct. The area is racially integrated, with a population that is 51% white, 46% black and 3% other ethnic groups. The residents are relatively evenly distributed by class throughout the neighborhood. An area roughly equal to ten square blocks in the southwest part of the precinct is covered by the Melrose Central Railroad yards.

There are large housing developments in the precinct: Melrose Houses, St. Mary's Houses, Forest Houses, Concourse Village Houses, Andrew Jackson Houses and William McKinley Houses. They are lower to middle income developments, reflecting the general make-up of the precinct. Most of the residences are apartment buildings, although there are some tenements. There are no large recreational areas; areas are limited to playgrounds and schoolyards. The area is primarily residential with much of its 45 miles of streets devoted to housing.

In 1973 there were 2,121 robberies in the precinct, 357 of which involved commercial establishments. This represents 2.9% of the city-wide total for each. The corresponding figures for burglaries were 3,406 and 1,064 which account for 2.3% of their respective citywide totals.

The target area for the Merchant Security Program in the 42nd precinct was the nine block section of East 167th Street between Webster Avenue and the Grand Concourse. Most of the participating merchants were on the four block stretch between Morris Avenue and the Grand Concourse. Out of 103 stores in the target area 30 (29%) participated in the project. Bars, liquor stores and jewelry stores were most likely to join.

There was substantial traffic on the streets and there were many shoppers. The area is served by a local IND stop and bus lines on the Grand Concourse and on 167th Street.

The control area, on the other side of the precinct, consists of the three block section of Westchester Avenue between Forest and Prospect Avenues. The entire area is under an elevated subway line. The 7th Avenue IRT express stop and bus lines on Westchester Avenue and Prospect Avenue serve the area. The area appears to be well integrated, with businesses run by blacks, whites, hispanics, and orientals. Traffic was congested and there were many shoppers.

There are 44 stores in the control area compared with 103 in the target area, making direct comparisons difficult. There are no liquor stores in the target area and it has a much lower percentage of bars than does the control area. The businesses in the control area appear smaller, less busy and not as profitable as those in the target area.

The 44th precinct in the Bronx is bounded by the Grand Concourse on the east, Burnside Avenue on the north, the Harlem River on the west and 149th Street on the south. Over 132,000 people live in the 1.95 square miles that make up the precinct- The population of the precinct is predominantly white (71%), with a large minority of blacks (26%) and a small number of other ethnic groups. The area is primarily lower-middle class residential. The 46 miles of streets are lined with many apartment buildings in apparently good states of repair.

There are several parks (Franz Sigel, Joyce Kilmer, John Mullaly, Harlem River State Park), the George Washington Bridge, Yankee Stadium, the Bronx Terminal Market and several housing complexes within the precinct.

In 1973 there were 1,781 robberies, 342 of which involved commercial establishments. This represents 2.5% and 2.8% of the respective citywide totals, There were 3,870 burglaries in the 44th precinct, 869 of which involved commercial establishments. This represents 2.6% and 1.9% of the respective citywide totals.

The target area for the Merchant Security Program in the 44th precinct is that part of East 170th Street between Jerome Avenue and the Grand Concourse. The target area is surrounded by an integrated middle income community consisting of well-kept apartment houses. The stores are in one to four story, well kept brick buildings. Out of 93 stores in the area, 63 (68%) participated in the program. There are no bars in the target area and no parks nearby.

There is a high level of traffic and pedestrian congestion in the area. There appeared to be a moderate amount of transient trade. The IRT express and the IND local serve the area, as do bus lines on 170th Street and the Grand Concourse. All in all, this appears to be an area of prosperous small businesses.

The control area is located ten blocks south of the target area on that part of East 161st Street lying between River Avenue and the Grand Concourse. The area is similar to the target area in its racial make-up and housing conditions. Although there are only 48 stores in the control area, as compared to 93 in the target area/ the distribution of stores is roughly the same in both areas. Traffic conditions and number of pedestrians is also quite similar in the two areas. One reason for the smaller number of stores in the control area is that a section of the control area is taken up by a courthouse on one side and a park on the other side. One difference between the two areas is that the control area has many parks around it and borders Yankee Stadium while there is no major attraction in the target area other than the stores.

47th Precinct

The 47th precinct is bounded by the New York City Line on the North, the New York Thruway on the East, the Bronx and Pelham Parkway on the South and a winding route following Bronx Park East, Gun Hill Road, the Boundary of Woodlawn Cemetery, Jerome Avenue, Van Courtlandt Park East and the Bronx River Parkway on the West. Approximately 189,000 people live in the 7.42 square miles that comprise the precinct. The 105 miles of streets are relatively uncrowded. The population of the area is predominantly white (78%), with a large minority of blacks (21%) and negligible amounts of other ethnic groups (1%).

The precinct is primarily middle income residential. The housing is composed of one and two family homes which appear to vary well kept. There are minor shopping areas along White Plains Road, Boston Road and Allerton Avenue. Approximately 10% of the precinct is covered by Woodlawn Cemetery which is on the western border.

In 1973 there were 912 robberies in the precinct, 217 of which involved commercial establishments. There is 1.3 and 1.7% of the respective citywide totals. There were 2,118 burglaries, 710 of which were commercially oriented. This represents 1.4% and 1.6% of the respective citywide totals.

The target area for the Merchant Security Program in the 47th precinct was that part of Allerton Avenue between Boston Road and Barker Avenue*. It is transected by an elevated IRT line on White Plains Road. The area is serviced by an IRT express stop, two bus lines on Allerton Avenue and one bus line on White Plains Road¹. It is predominantly a white middle class residential area. The businesses are oriented towards serving the resident population; there is little transient trade in the area. Although there was a great deal of traffic and many shoppers, the streets appeared to be quiet. This may be because there was almost no heavy commercial traffic in the area. The stores in the area are one story brick structures and appear to be well kept. They also appear to be doing a good business.

Out of 125 stores in the area, 50 (40%) elected to participate in the program. Almost all of them displayed the Merchant Security Program sign in their stores. There did not appear to be any particular type of store that did not participate in the program.

The control area was that part of Boston Road between Wilson Avenue and Eastchester Road. The area is serviced by two lines on Boston Road and on Eastchester Road. Two family brick homes predominate in the area. A low income housing development, The Eden Wald Houses, located near the control area. There appears to be a higher proportion of black residents in the control area than in the target area.

There is less congestion in the control area. Fewer pedestrian shoppers are to be found. There are 89 stores in the control area seem to carry lower quality goods. There are a higher percentage of bars, banks and restaurants in the control area. This might affect the distribution of crime in the area.

66th Precinct

The 66th precinct in Brooklyn is bounded by P.th avenue on the west, 37th Street on the north, McDonald Avenue and .toy Parkway or: the east and Bay Ridge Avenue on the south. There are approximately 140,500 people living in the 2.92 square miles that comprise the precinct. The 82.5 miles of streets in the precinct are generally lined with one to four fnnily attached homes. The buildings are in good condition. The area is a predominantly white (98.5%) middle income residential section with only rmiov concentrations of oth r ethnic groups (1.5%). Washington Cemetary and the Mainonicies Medical Center are both within the precinct.

There are a large number of small business districts spread through. out the precinct--- 8th, 13th, 18th avenues, New Utrecht Avenue, and Ft-Hamilton and Bay Parkways all contain sizeable shopping areas to serve the residents.

In 1973 there were 241 robberies in the precinct, 86 of which involved commercial establishments. This represents .3% and .7% of the respective citywide totals. There were 1,831 burglaries, 598 of which were commercially oriented. This represents 1.2% and 1.3% of the respective citywide totals.

The target area for the Merchant Security Program in the 66th precinct was that part of Ft. Hamilton Parkway between 43rd and 52nd Streets. Out of 112 stores in the area, 45 (40%) elected to participate the

program. There are two BMT express stops in the area; one on New Utrecht Avenue and the other at the intersection of New Utrecht Avenue and Ft. Hamilton Parkway. Traffic congestion is not a major problem in the area and the streets are not over-crowded with shoppers.

There are no banks in the area and there is a higher percentage of bars, liquor stores in the tarret area than in the control area. This may create differences between the tvo areas which might affect the crime distribution. None of the bars or liquor stores, joined the project and only one out of eight restaurants elected tojoin. The relatively low robbery and^f burglary rates in the area may account for this low level of participation among these prosperous stores.

The control area consisted of that part of 13th Avenue between 37th and 52nd Streets^ Here too, the stores prosperous and well kept. The control area was much are congested than the target area. Traffic was extrenely heavy and the streets were mobbed with shoppers. There are over 260 stores, including five banks, in the control Cloth- ingstores, candystoresandfoodshopsaremorelikelytobefoundin the control are than in the target area. The control area prepared to be more of a main shopping area than the target area.

72nd Precinct

The 72nd precinct in Brooklyn is bounded by 3rd Street on the north, Gowanus Bay on the west, 50th Street, 8th Avenue and "57th Street on the south and Ft. Hamilton Parkway, Prospect Park South-west and Prospect Park West on the east. Approximately 114,000 people live in the 3.34 square miles that comprise this precinct. Ninety-four percent of the residents of the precinct are white, 4% are black and 2% belong to other ethnic groups. Approximately one-fifth of the precinct, area is occupied by Greenwood Cemetery on the western bounfiry of the precinct. Sunset Park covers about six square blocks in the precinct and the Transit Bus Repair Shop accounts for another eight square blocks.

Two major expressways (the Gowanus end Prospect) cross the precinct. The precinct is mixed residential and manufacturing, with heavy industry located in the portion below 2nd Avenue. That section also contains the dock area in the precinct. The rest, of the precinct is low to middle class residential. The quality of the housing tends to deteriorate as you move towards the lower numbered avenues. The major shopping areas ere on 5th Avenue between 3rd and 50th Streets and on Prospect Park West from 15th to 20th Streets.

In 1973 there were 415 robberies in the precinct, 74 of which involved commercial establishments. This represent 0.6% of the citywide totals in each category. There were 2,313 burglaries, 801 of which involved commercial establishments. This represents 1.6% and 1.8% of the respective citywide totals.

The target area for the Merchant Security Program in the 72nd precinct is that part of Prospect Park West between 15th and 20th Streets. It is bordered by Prospect Park on one end and by Greenwood Cemetry on the other. There are one to four story brick apartment houses at either end of the area. Out of 79 stores, 56 (71% elected to participate in the program. However, not all of thera were strictly within the target area. They are close to it and the character of the area differs little from the target area.

The target is serviced by an IND express stop, There is little-traffic on the street and there are few pedestrian shoppers. There is little transient trade; the stores mostly servJce the residents of the community. There are no chain stores appear to be well kept and prosperous. There was a high level of display of the Merchant Security Program signs.

The control area lies on 5th Avenue between 3rd and 9th Streets It is serviced by an HID espress stop and there is a BMT local stop within one block. John Jay High School is at 5th Street and 7th Avenue, There is extreme congestion in the area, both vehicles and people clog the streets. The control area is more oriented to transient business than is the control area which tends to be more community oriented.

77th Precinct

The 77th precinct in Brooklyn is bounded by Eastern Parkway on the south, East Plaza Street and Vanderbilt Avenue on the west, Fulton Street on the north and Ralph Avenue (detouring on Pacific to Howard to Dean and back to Ralph). Approximately 106,030 people live in the 1.73 square miles that comprise this precinct. The population of the precinct is predominantly black (84%), with a large minority of whites (15%) and negligible amounts of other ethnic groups.

The precinct borders on Prospect Park, the Brooklyn Botanic Gardens, the Brooklyn Museum and the Brooklyn Central Library. It contains two large housing developments: Albany Houses and Kingsboro Houses. There are two large playgrounds in the precinct of Andrew's Playground and St. John's Playground. The housing in the northern part of the precinct is run down with many tenements and abandoned buildings. The southern part of the precinct has better housing, consisting of one and two family homes on tree lined streets.

In 1973 there were 1,549 robberies in the precinct, 272 of which involved commercial establishments. This represented 2.1% and 2.2% of the respective city wide totals. There were 2,382 burglaries 742 of which involved commercial establishments. This represents 1.8% of the citywide totals in both categories.

The target area for the Merchant Security Program in the 77th precinct consisted of that part of Utica Avenue between Eastern Parkway and St. John's Place and one block east and west of Utica Avenue

on St. John's Place. The area is serviced by the BMT line and by the bus lines. There is easy parking availability in the area. Most of the businesses in this black residential area are owned by whites. The two or three story buildings in the area are in good condition. Utica Avenue attracts more black and white shoppers because there is a greater diversity of stores on the street.

Out of 85 stores in the area, 25 (33%) elected to participate in the project. There are no bars in the area and only one restaurant joined the program. The Merchant Security Program signs were visible displayed in all the stores.

The control area was that part of Nostrand Avenue between Fulton Street and Eastern Parkway. There were over 200 stores in the control area, in marked contrast to the 85 in the target area. Most of the stores in the area are black owned. The condition of the stores in the control area is not on a par with that of the stores in the target area. The area is serviced by LIRT and IND express subway stops and by a LIRR station in addition to bus routes. Nostrand Avenue only runs one direction, it is extremely congested by the truck deliveries normal residential traffic and the consumer traffic. There are many people loitering on the street corner in this area, in marked contrast to the target area.

The buildings in the area are three to four story apartment houses. There are many abandoned buildings and tenements in the area. In general, this appears more depressed than the target area.

The 103rd precinct in Queens is bounded by Baisley Boulevard on the southeast, Rockaway Boulevard on the south, the Van Wyck Expressway on the west, Hillside Avenue on the north and a winding route from 168th Street to Woodhull Street to 190th Street to Hollis Avenue to Farmers Boulevard on the west. Over 150,000 people live in the 5.47 square miles that comprise this precinct. The 73 miles of streets are lined with a variety of housing and businesses. It is a mixed residential and business area containing the Jamaica business district in addition to areas that are predominantly residential. The housing in the area ranges from housing projects to apartment houses to cue family homes. They range from well kept to fairly run down.

Baisley Pond Park, St. Albany Naval Hospital, York College (CUNY), South Jamaica Houses and the right of way of the Long Island Railroad take up large amounts of land in the precinct. The precinct is lower middle class and lower class in socioeconomic make up and there are no sharp class divisions within the precinct, although the state of repair of a piece of property can be used to evaluate the relative economic success of the residents.

In 1973 there were 2,526 robberies in the precinct, 450 of which involved commercial establishments. This represents 3.5% and 3.6% of the respective citywide totals. There were 1,555 burglaries, 1,093 of which involved commercial establishments. This represents 1.0% and 2.4% of the respective citywide totals. The high rates of commercial robberies and burglaries reflect the strong commercial nature of the Jamaica business district.

The target area for the Merchant Security Program in the 103rd precinct was that part of Jamaica Avenue between 145th and 148th Streets and that part of Sutphin Boulevard between Archer and 88th Avenues. The two areas are contiguous.

The Jamaica Avenue elevated train dominates the area. The area is serviced by a BMT express stop, the Jamaica LIRR station, bus lines and INI) express stop within one block. There is very heavy traffic and pedestrian activity in the area. The New York State Courthouse, the Department of Motor Vehicles, a state employment office and York College are all close to the target area.

Out of 103 stores in the area 54 (52%) participated in the project. A comparatively small percentage of the drug stores and bars joined. Most of the stores in this predominantly black area are owned by white merchants. The stores, in three story brick buildings, are generally in fair condition. The surrounding housing is in good condition.

The control area is on Parsons Boulevard between Hillside and Archer Avenues. There are only 37 stores in the area which makes direct comparison difficult. There are no bars or banks and there is a higher proportion of candy stores and restaurants here than in the target area.

There is IND and BMT express service in the area in addition to bus service. The area contains the Department of Health, the Queens Family Court House, a cemetery, a municipal parking lot, a YMCA and a large modern apartment building. York College is nearby. Despite this, the area is not as crowded as the target area.

112th Precinct

The 112th precinct in Queens is bounded by 58th Street on the west, Queens Boulevard, and the Long Island Expressway on the north. the West Service Road of the Grand Central Parkway (around Willow Lake and the IND subway yards) on the east and by a winding route from Union Turnpike to Metropolitan Avenue to 59th Street to the Long Island Expressway or, the south. More than 185,000 people live in the 5.94 square miles that comprise this precinct. Most of the 154 miles of Streets in this middle class to upper class community are tree lined and quiet. The housing ranges from one to four family attached and detached houses to modest apartment building to luxury apartment buildings to single family homes costing \$200,000. Many major transportation routes serve the precinct: IND and BMT subways the Long Island Railroad, the Long Island Expressway, Queens Boulevard. the Grand Central Parkway and Union Turnpike carry people to the area.

Mt. Zion Cemetery, St. John's Cemetery, Juniper Valley Park, Forest Hills Stadium and the IND subway yards are all contained within the precinct. Although there are no major parks in the precinct, the precinct borders on Forest Park and Flushing Meadow Park. None of these are near the control or target areas.

In 1973 there were 481 robberies, 151 of which involved commercial establishments. This represents 0.7% and 1.2% of the respective citywide totals. There were 2,206 burglaries, 569 of which involved commercial enterprises. This represents 1.5% and 1.3% of the respective citywide totals.

Both the target and control areas reflect the ethnic make-up of the community -- 98% of the community is white, .5% black and 1.5% other ethnic groups. Forest Hills is a predominantly Jewish community.

The target area for the Merchant Security Program in the 112th precinct is on 108th Street between 63rd Road and 65th Avenue. This is a business area in the midst of a primarily residential area one story brick stores were apparently designed as a shopping area for the surrounding community. The stores are set back on the sidewalk to provide room for pedestrians and there is parking in front of the stores. 108th street is a wide street, wider than many avenues.

The surrounding residential area is composed of apartment buildings and one family homes on quiet tree lined streets. The area is served by one bus line. The traffic in the target area is quiet and uncongested although the area is busy. There is little heavy commercial traffic in the area. There is almost no transient trade in the area.

Out of 78 stores in the area, 31 (40%) elected to participate in the program. This is a high rate considering the low robbery and burglary rate in the precinct.

The control area was that part of 71st Avenue (continental Avenue)

between Austin Street and Queens Boulevard. This is the main shopping area for the community. There are 43 stores in the one block area. The area is serviced by the IND and BMT subways, bus lines and the LIRR.

The business area is surrounded by high rise luxury buildings. The stores appear to do more business here than the target area and the streets in the control area are more crowded. Parking is more of a problem in the control area. There are no liquor stores, bars or drycleaning establishments in the control area.

The 113th precinct in Queens is bounded by the Jamaica bay on the south, Hook Greek Basin and the New York City Line on the east, a winding route following 121st Avenue, Francis Lewis Boulevard, 122nd Avenue, Farmers Boulevard, Baisley Boulevard and Rockaway Boulevard on the north and a winding route following the Van Wyck Expressway, 134th street, 155th Avenue, 130th Street and around Kennedy Airport's boundary on the west. Approximately 103,000 people live in the 15.8 square miles that comprise this precinct. The precinct, created on October 17, 1973 out of portions of the 103rd and 105th precincts, is racially integrated. The population is 49% white, 38% black and 13% other ethnic groups.

The 156 miles of streets in the precinct are generally lined with one and two family detached homes in good condition. The area is predominantly middle class. The primary business area is in Laurelton, with subsidiary locations along Francis Lewis Boulevard, 243rd Street and Rockaway Boulevard. The precinct contains Kennedy airport, Rochdale Village, Monticello Cemetery and Brookville Park.

In 1973 there were 219 robberies in the precinct, 38 of which involved commercial establishments. This represents 0.3% of the city-wide total in both categories. There were 400 robberies, 69 of which involved commercial establishments. This represents 0.3% and 0.2% of the respective citywide totals. These figures represent the statistics for that portion of the year that the precinct existed, Extrapolated over a full year, based on the statistics for the first five months of 1974, the rates should remain about the same.

The target area for the Merchant Security Program: in the 113th precinct was that part of Merrick Boulevard between 224th Street and Laurelton Parkway. There are both large and small businesses located in the one and two story brick buildings in this racially integrated area. The homes in the area are detached brick or wood frame in good condition.

Out of 135 stores in the target area, 40 (30%) elected to join the program. The streets were quiet and uncongested. There were few shoppers and little transient business in the area. Bus lines and a LIRR station serve the area. The stores are community oriented most of their business comes from community residents.

The target area was on Merrick Boulevard between Springfield and Baisley Boulevards. It is quite unlike the target area. There are only 36 stores (compared to 135 in the target area) and their types are different from the target area. The control area has used car lots, body and fender shops, an iron works plant and an aluminum company. There are no banks in the area, however there are many vacant lots. The homes in the area are similar in type to those in the target area, but they are further removed from the business area in the control area. On the whole, making comparisons between the two areas may not be valid.

IF HELD UP SINCE JOINING MS

- 39. HOW MANY PERSONS HELD YOU UP? _____
(FILL IN FOR MULTIPLE HOLD-UPS AS NECESSARY)
- 40. IF YOU WERE HELD UP, DID YOU USE ANY OF THE MS DEVICES? YES _____ NO _____
(CHECK AS MANY TIMES AS NECESSARY)
IF NO, EXPLAIN _____
- 41. IF YOU WERE HELD UP, WHEN DID YOU ACTIVATE THE ALARM (CHECK AS MANY TIMES AS NECESSARY)
DID NOT SET OFF ALARM _____ BEFORE INCIDENT _____ DURING _____ AFTER _____
- 42. HOW MANY BURGLARIES HAVE YOU HAD IN THE LAST TWO YEARS _____ DON'T KNOW _____
- 43. ABOUT HOW MUCH DID YOU LOSE IN THESE BURGLARIES _____ DON'T KNOW _____
- 44. HOW MANY BURGLARIES HAVE YOU HAD SINCE PARTICIPATING IN THE MS PROJECT? _____
- 45. IS SHOPLIFTING A PROBLEM? YES _____ NO _____ N.T. APPLICABLE _____
- 46. ABOUT HOW MUCH ARE YOUR MONTHLY LOSSES DUE TO SHOPLIFTING? _____ DON'T KNOW _____
- 47. HAVE YOU NOTICED ANY DECREASE IN SHOPLIFTING AS A RESULT OF PARTICIPATING IN THE M.S. PROGRAM? YES _____ NO _____
- 48. DO YOU THINK THAT CRIME IN THIS AREA IS INCREASING _____ OR DECREASING _____ OR NO CHANGE _____
WHAT ~~OTHER~~ SPECIAL ANTI CRIME PROGRAMS (OTHER THAN MS) ARE IN THE AREA THAT YOU KNOW ABOUT? (For example, Mounted, Lighting, Operation Ident) _____
- 49. DO YOU THINK THAT THESE PROGRAMS HAVE ANY EFFECT ON PREVENTING CRIME? YES _____ NO _____ NO OPINION _____
WHICH PROJECTS PREVENT CRIME? _____
- 50. DO YOU FEEL ANY MORE SECURE OR SAFE IN YOUR STORE BECAUSE OF THE MS PROGRAM? YES _____ NO _____
- 51. DO YOU FEEL ANY MORE SAFE ON YOUR WAY TO AND FROM THE STORE, SAY AS COMPARED TO A YEAR AGO? YES _____ NO _____
- 52. HAVE YOU MADE ANY CHANGES IN YOUR MANNER OF DOING BUSINESS SINCE GETTING THE MS EQUIPMENT LIKE: STAYING OPEN LATER, YES _____ NO _____; ALLOWING ANYONE TO COME IN (BY A KNOCK OR BUZZER) AFTER CHECKING THEM YES _____, NO _____; ANY OTHER, EXPLAIN _____
- 53. WHAT DO YOU THINK OF THE MS WINDOW WARNING (DECAL) AND STORE SIGN AS A MEANS TO DISCOURAGE CRIME?
GOOD _____ NO EFFECT _____ NOT GOOD _____ NO OPINION _____
HOW WOULD YOU IMPROVE THE SIGN _____
- *54. WHERE DO YOU DISPLAY THE MS WINDOW WARNING?
PROMINENT LOCATION _____ NOT PROMINENT _____ SIGN IS NOT PUT UP _____. IF YOU DON'T DISPLAY THE MS SIGN, WHY NOT? _____
- *55. WHERE DO YOU DISPLAY THE MS STORE SIGN?
PROMINENT LOCATION _____ NOT PROMINENT _____ SIGN IS NOT PUT UP _____
- 56. WHAT EFFECT DO YOU THINK THE MS CAMERA HAS ON PREVENTING (STOPPING) HOLD UPS?
STRONGLY PREVENT _____ LITTLE EFFECT _____ NO EFFECT _____ ENCOURAGES CRIME _____
NO OPINION _____
- 57. WHAT EFFECT DO YOU THINK THE MS ALARM HAS ON PREVENTING (STOPPING) HOLD UPS?
STRONGLY PREVENT _____ LITTLE EFFECT _____ NO EFFECT _____ ENCOURAGES CRIME _____
NO OPINION _____

58. WHAT EFFECT DO YOU THINK THE MS SYSTEMS HAVE ON PREVENTING INDIGLARIEN
STRONGLY PREVENT ___ LITTLE EFFECT ___ NO EFFECT ___ ENCOURAGES ___
NO OPINION ___
59. WHAT EFFECT DO YOU THINK THESE SYSTEMS HAVE ON PREVENTING BAD CHECKS,
SHOPLIFTING, ETC.?
STRONGLY PREVENT ___ LITTLE EFFECT ___ NO EFFECT ___ ENCOURAGES ___
NO OPINION ___
60. DO YOU BELONG TO A MERCHANT ASSOCIATION? YES ___ NO ___
61. HAVE YOU TALKED WITH OTHER MERCHANTS ABOUT THE MS PROGRAM? YES ___ NO ___
62. DO YOU THINK THE MS PROGRAM HAS MADE MERCHANTS MORE CRIME CONSCIOUS?
YES ___ NO ___ DON'T KNOW ___
63. HAS THE MS PROGRAM UNIFIED THE MERCHANTS OR STRENGTHENED THE BLOCK
ASSOCIATION? YES ___ NO ___ DON'T KNOW ___
64. WHAT IS YOUR GENERAL ATTITUDE TOWARD THE POLICE?
GOOD ___ FAIR ___ POOR ___ NO OPINION ___
65. HAS YOUR ATTITUDE TOWARDS THE POLICE CHANGED AS A RESULT OF PARTICIPATING IN
THE MS PROGRAM?
BEEN GREATLY IMPROVED ___ IMPROVED SOMEWHAT ___ NOT CHANGED ___
LESSEMED SOMEWHAT ___ LESSEMED A GREAT DEAL ___
66. WHAT IS YOUR GENERAL ATTITUDE TOWARD THE CITY?
GOOD ___ FAIR ___ POOR ___ NO OPINION ___
67. HAS YOUR ATTITUDE TOWARD THE CITY CHANGED SINCE THIS PROJECT?
BEEN GREATLY IMPROVED ___ IMPROVED SOMEWHAT ___ NOT CHANGED ___ LESSEMED
SOMEWHAT ___ LESSEMED A GREAT DEAL ___
68. THE CITY'S PAYMENT OF PART OF THE MONTHLY MS CHARGES CEASES AFTER 14 MONTHS.
WILL YOU CONTINUE IN THE MS PROGRAM AT YOUR OWN EXPENSE EVEN THOUGH YOUR
MONTHLY MAINTENANCE CHARGE WOULD TRIPLE TO ABOUT \$12 PER MONTH FOR AN ALARM
AND \$24 PER MONTH FOR A CAMERA? YES ___ NO ___ DON'T KNOW ___
69. IF YOU WON'T CONTINUE, WHY?
NO NOTICEABLE EFFECT ___ TOO EXPENSIVE ___ BUT I WOULD BE WILLING TO PAY
\$ ___ FOR A CAMERA AND \$ ___ FOR AN ALARM. OTHER, EXPLAIN _____
70. HOW MUCH BUSINESS DO YOU DO EACH YEAR IN THIS STORE? LESS THAN
\$50,000 ___ \$50,000-\$100,000 ___ over \$100,000 ___
71. HOW MANY SQUARE FEET OF SPACE DO YOU HAVE FOR SELLING (EXCLUDING STORAGE
SPACE) _____

***** Interviewer---DO NOT ASK

TIME IN PROJECT _____ mo. Date equipment installed _____

INTERVIEWER'S COMMENTS

APPENDIX C

SURVEY OF PRECINCTS PARTICIPATING IN MERCHANT SECURITY PROGRAM

Precinct _____ Crime Prevention Officer _____ Tel.# _____ Address _____ Period Referred to: _____ through _____

since MS pilot project to date
comparable period (same months as above) prior to MS pilot project

1. Date all Merchant Security (MS) installations were completed in your precinct _____ through _____
2. Number of merchants in your precinct _____ (Complete breakdown of store categories on reverse side of this form.)
3. Number of merchants participating in MS who had security devices (hold-up alarms, cameras, burglary alarms) prior to MS Program _____
4. Number of merchants in precinct who have security devices other than MS devices _____ (if possible).
5. Number of merchants in the target area _____, number having no security devices _____, number having other than MS devices _____.
6. Number of merchants in the control area _____, number having no security devices _____, number having other than MS devices _____.

Incidence of Crime to Date Since All Installations Were Completed--Use Last Whole Month.	TARGET AREA					CONTROL AREA			PRECINCT	
	Non MS Stores		In Stores With MS Sec. Dev.			Total Stores	In Stores With Any Sec. Dev.	Total Control Area (in/outside crimes, stores & non-stores)	Total in all stores in Prec.	Total Precinct Crimes
	Total	With Non MS Sec. Dev.	camera	alarm	both					
# of outside robberies	na*	na	na	na	na	na	na	na	na	na
total # of robberies										
total # of burglaries										
total # of larcenies**										
# of drug offenses										
TOTAL # OF ALL CRIMES										
Incidence of Crime in Comparable Period of Time Prior to MS										
# of outside robberies	na	na	na	na	na	na	na	na	na	na
total # of robberies										
total # of burglaries										
total # of larcenies**										
# of drug offenses										
TOTAL # OF ALL CRIMES										

* na means Not Applicable
**include Motor Vehicle Larcenies

Store Categories

Bank**Bar & Grill**

Liquor Store

Candy Store/Grocery /Meat Shop

Bicycle Shop

Dry Cleaner

Check Cashing

Drug Store

Gas Station

Loan Company

Clothing Store /Shoe Store

Restaurant

Jewelry Store

All Other Stores

TOTAL

Please answer the questions below in detail.

1. Describe any special anti crime programs that were developed and began during the same period of time as the Merchant Security pilot Program:
a) in the precinct as a whole (give dates of operation" of special programs)

b) in the Merchant Security target area

c) in the control area to the Merchant Security target area

2. Which of the above special anti crime programs were not operational during

the comparable period (same months) prior to the Merchant Security Program for which statistics are provided on the reverse side of the sheet. Explain.

Are there any special anti crime programs that were operational during the comparable period and not operational after the Merchant Security Program began? Explain.