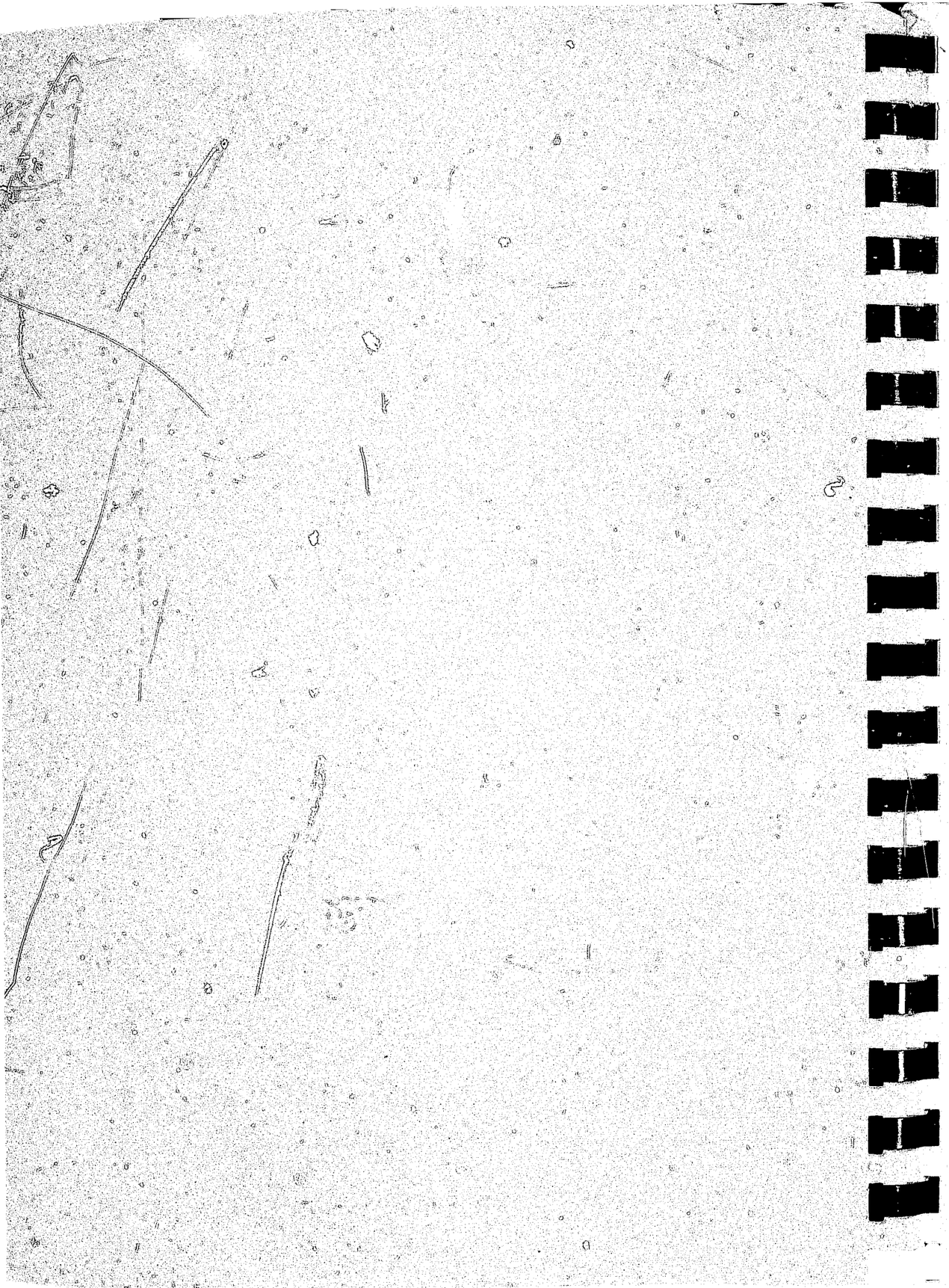
THE INSTITUTE FOR PUBLIC PROGRAM ANALYSIS

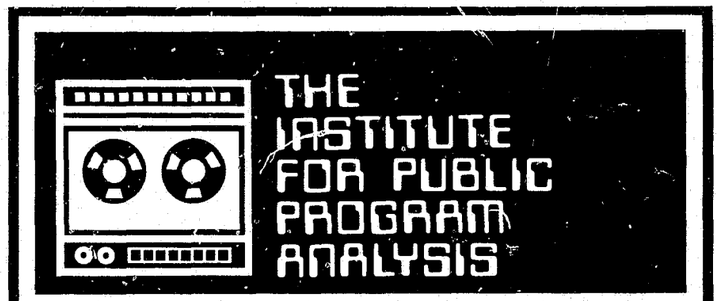
VOLUME I

EVALUATION OF THE PROGRAM'S EFFECTIVENESS

PHASE I

EVALUATION OF OPERATION IDENTIFICATION





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ABSTRACT

This volume is the first of a three part report which examines the effectiveness of Operation Identification. The study is one of a number of evaluative assessments being conducted for the National Institute of Law Enforcement and Criminal Justice under its National Evaluation Program.

This volume, which details the main findings of the study, begins with a section describing the background and structure of the study. The remaining sections contain the main study products. They are: "A Review of General Knowledge and Past Findings," "Assessment of Effectiveness," "Plans for Phase II Evaluation Activities," and "Plans for Evaluating a Single Operation Identification Project." Supplementary material is presented in the report's second volume. The final volume of the series is written in non-technical language and is designed for wider distribution than that for the detailed first two volumes. It contains a summary of the study's findings, and the report "Plans for Evaluating a Single Operation Identification Project."

PREFACE

This volume is part of a three volume report which assesses the effectiveness of Operation Identification, a popular burglary prevention program which originated in Monterey Park, California in 1963. The study was conducted by The Institute for Public Program Analysis between October, 1974, and June, 1975, for the National Institute of Law Enforcement and Criminal Justice as part of its National Evaluation Program.

The authors would like to acknowledge the assistance of Ms. Lois Mock, Mr. Fred Heinzelmann, Mr. Michael Mulkey, and Dr. Richard Barnes of the National Institute of Law Enforcement and Criminal Justice. Three members of The Institute for Public Program Analysis' Board of Directors served as members of the study's Project Advisory Board, providing helpful counsel and support during this study: Mr. Frank Susman of Susman, Schermer, Willer and Rimmel; Dr. Michael Maltz of the University of Illinois at Chicago Circle; and Mr. Joseph Lewis of The Police Foundation. The following people also contributed to the study in a variety of ways: Mr. Peter Abbey and Dr. Douglas Frisbie of the Minnesota Governor's Commission on Crime Prevention and Control; Messrs. David Baker, Hans Mattick, Chris Olander, and Harold Schlegel of the Center for Research in Criminal Justice, University of Illinois at Chicago Circle; Mr. Grant Buby of the Governmental Research Institute of St. Louis; Chief Everett

Holladay, former chief of Police of Monterey Park, California, and originator of Operation Identification; Mr. William Lester of the Denver Anti-Crime Council; Mr. Joseph Nay, Ms. Katryna Regan, and Dr. Thomas White, of The Urban Institute; and Mr. Doyle Shakelford and Ms. Barbara Bomar of the National Crime Prevention Institute, University of Louisville.

The authors also wish to thank the numerous O-I project staff members and other persons who furnished information and materials on the local Operation Identification projects contacted; though too numerous to mention here, this study could not have been completed without their generous assistance.

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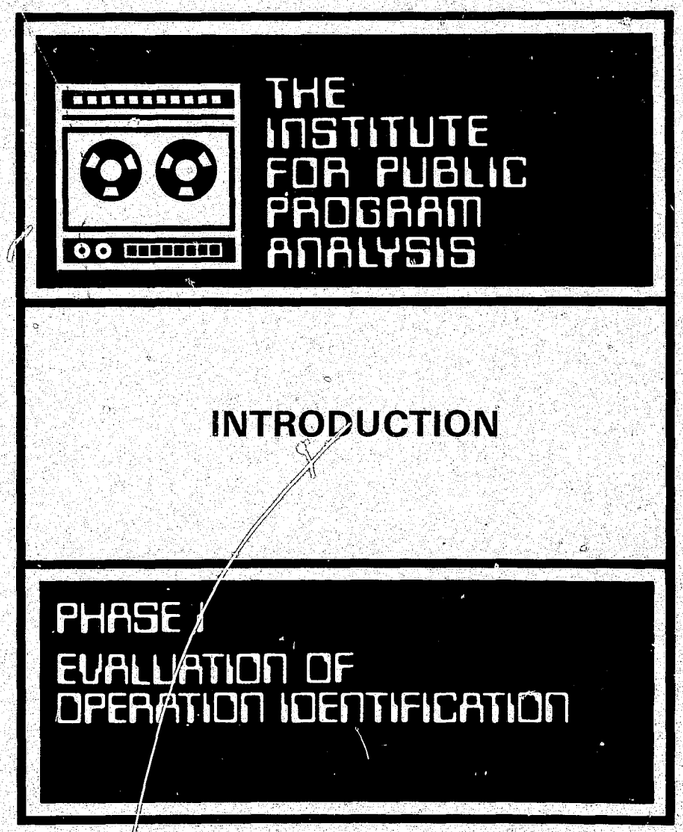

INTRODUCTION

A. The National Evaluation Program

In early 1974, the LEAA Evaluation Policy Task Force outlined a broad program designed to identify effective crime control programs and the circumstances under which they have the greatest impact. A component of this effort, the National Evaluation Program (NEP), seeks to assemble what is already known about specified topic areas, and then to use the information as a basis for further research designed to fill the knowledge gaps in areas evidencing the most promising results.

The NEP is organized around topic areas which contain groups of projects that appear to have similar goals and methods, and which are of interest to many state and local planners and administrators. Within each topic area examined there may be as many as three steps: a Phase I evaluation, consultation with a national evaluation coordinating committee regarding possible further evaluation, and, in some cases, a Phase II evaluation.

The Phase I evaluation is designed to cover the collection, synthesis, and assessment of what is already known about each topic area and also to produce one or more evaluation designs that would fill any identified gaps in that knowledge. The evaluation coordinating committee would then address whether present knowledge of project results is adequate, and which, if any, of the proposed Phase II evaluation activities

should be implemented to obtain necessary additional information. The Phase II evaluation effort, if undertaken, consists of the production of the desired additional information in each topic area.

The first task of a Phase I study is the gathering of general knowledge about the topic area, including past evaluation or research findings. Through telephone interviews and field work, a detailed picture is developed of the "interventions" (activities) that are actually being carried out by existing projects. Based on a snythesis of the knowledge collected, a framework is then developed that encompasses the apparent underlying operating assumptions of existing projects and points out the likely points and methods of measurement. This framework is used as the basis for the assessment of the present state of knowledge, the development of designs for the collection of necessary additional information, and the development of a model data collection and evaluation design which may be used by single projects at the local level.

B. The Phase I Study of Operation Identification

In October, 1974, the National Institute of Law Enforcement and Criminal Justice awarded a grant to The Institute for Public Program Analysis for the purpose of conducting a Phase I evaluation of Operation Identification. The Institute for Public Program Analysis is a not-for-profit research institute located in St. Louis, Missouri, whose purposes include conducting evaluative studies of public programs and advancing the state of the art of evaluation methodology.

The products of the Phase I study are contained in a series of six reports, each of which is described briefly in the following paragraphs.

1. Operation Identification: A Review of General Knowledge and Past Findings (hereafter referred to as the "Review"). This report presents a review of general knowledge of the context, background, goals, and alternative approaches to Operation Identification (O-I), and a summary of past findings of other researchers about the implementation and effectiveness of individual O-I projects.

2. A Telephone Survey of Operation Identification Projects: Methodology and Results (hereafter referred to as the "Telephone Survey"). This report describes a telephone survey of 99 on-going O-I projects which was conducted by the research team to gain information about the actual interventions being carried out by O-I projects throughout the country. The projects contacted were queried about their history, organization, levels and sources of funding, objectives, operations, evaluation efforts and results, degree of success, and problems.

3. A Field Survey of Operation Identification Projects: Methodology and Results (hereafter referred to as the "Field Survey"). To secure more detailed information about project operations, on-site visits were made to 18 of the O-I projects contacted in the telephone survey. These vists were designed to validate the results of the telephone survey, to obtain more precise information about the operations of particular O-I

projects, and to more accurately identify the similarities and differences between O-I projects. Results of the survey are presented in this report.

4. Assessment of Effectiveness (hereafter referred to as the "Assessment"). This report presents a judgmental assessment of Operation Identification based upon project performance data assembled during the study. As a basis for the assessment, which revolves around common O-I project assumptions and objectives, several frameworks of project activities are presented. They are used to describe the chain of assumptions linking the expenditure of funds to project activities, the project activities to intermediate effects, and finally, the intermediate effects to the ultimate impact of O-I upon the reduction of burglary. The frameworks are also used to identify feasible measurement points, important data elements to be collected, and practical methods of data collection. Also identified are major gaps in available knowledge about O-I.

5. Plans for Phase II Evaluation Activities (hereafter referred to as the "Phase II evaluation"). This report presents detailed evaluation plans designed to resolve the knowledge gaps identified in the Assessment. These separate plans are also incorporated into one overall plan for a Phase II study.

6. Plans for Evaluating a Single Operation Identification Project (hereafter referred to as the "Single Project evaluation"). This report presents a model evaluation design for use in evaluating individual projects at the state and local

levels. Included in the plan are standard data elements to be collected, methods of data collection, and suggestions for analyzing and interpreting the data collected.

In addition to these formal products of the study, a library of O-I materials and information has been assembled. Included are materials obtained from the O-I projects contacted, reports on O-I project evaluations, news and magazine articles about O-I, and copies of studies and proposed legislation related to various aspects of property marking and identification.

C. Outline and Structure of the Report

The complete report of the Phase I study of Operation Identification is divided into three parts: a two volume detailed report, and a summary report. Volume I of the detailed report, entitled "Evaluation of the Program's Effectiveness," contains the Review, the Assessment, the Phase II evaluation, and the Single Project evaluation. Together, they give a detailed picture of the present state of O-I knowledge, the major unanswered questions about O-I, how these questions can be answered, and ways in which local projects can evaluate their own effectiveness.

Volume II of the detailed report, entitled "Survey Findings, Other Evaluations of Operation Identification, and Evaluation of This Study," contains the Telephone Survey and the Field Survey, abstracts of other O-I evaluations and related literature, and an independent evaluation of this study by the Governmental Research Institute. The Governmental Research

Institute of St. Louis, an independent research organization with wide ranging experience in police operations, was employed to monitor the progress of the study, provide technical assistance to the authors, and prepare an evaluation of the reports. The evaluation examines the study's compliance with Phase I requirements, and comments on the quality and usefulness of the study's products.

The final volume of the report, entitled "Summary of the Assessment of Operation Identification's Effectiveness and Plans for Evaluating a Single Project," presents a condensation, or executive summary, of the major findings of the study, including a description and assessment of O-I's major activities and objectives. This volume is designed to convey, in non-technical language, the results of the study to O-I project implementors, state and local planning agencies, and other groups considering the initiation of an O-I project.

In addition to these three volumes, the following have been delivered to the National Institute of Law Enforcement and Criminal Justice under separate cover:

- completed telephone survey forms for all O-I projects contacted during the Telephone Survey,
- completed field survey forms and narrative summaries of them for all O-I projects visited during the Field Survey,
- copies of O-I related materials gathered from various sources during the study (including materials used by

individual O-I projects, evaluation and progress reports, articles on O-I from the news media and professional publications, and copies of some unpublished studies of property marking programs).

THE INSTITUTE FOR PUBLIC PROGRAM ANALYSIS

A REVIEW OF GENERAL KNOWLEDGE AND PAST FINDINGS

PHASE I

EVALUATION OF OPERATION IDENTIFICATION

ABSTRACT

This paper presents the results of an extensive review of available information about property marking programs. Collectively identified as Operation Identification (sometimes referred to as O-I), these projects seek to deter burglars by encouraging citizens to mark their valuable property with a unique, traceable number, sign, or name which can be used to establish ownership if the property is stolen.

General knowledge about O-I was drawn from background material, past research, historical development, and expert opinion about the role and usefulness of O-I as a burglary prevention concept. Information about the implementation and evaluation of specific O-I projects was obtained from newspaper stories, magazine articles, grant applications, progress reports, evaluation studies, SPA reports, and expert opinion.

The review of the collected information is organized into four major project components: participant recruitment, material distribution and participant enrollment, burglary deterrence, and property recovery. The first two components represent functional descriptions of project efforts and include all activities planned and implemented by the project itself. The last two components represent the two principal objectives of O-I. Within each component, the gathered data are used to identify project objectives, implementation alternatives, project benefits, unexpected problems, previous evaluation findings, and specific project results.

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CHAPTER I. INTRODUCTION

A. Purpose and Outline of the Paper

The purpose of this paper is to review current general knowledge and past findings about Operation Identification (sometimes referred to as O-I). Two levels of information are presented. The review of general knowledge is designed to establish the context and background, general goals, and alternative approaches to O-I. This information has been drawn from background material, past research, historical development, and expert opinion about the role and usefulness of O-I as a burglary prevention concept.

The second level of information centers on past findings about implementation and evaluation of specific O-I projects. This information has been collected from a variety of sources, including newspaper stories; magazine articles; grant applications, progress reports, evaluation surveys, and promotional materials from individual O-I projects; SPA reports; evaluation studies; expert opinions; and information supplied by the manufacturers of engraving and labeling equipment.

This paper is divided into six chapters. The remainder of this one defines the specific kinds of property marking programs included in this review, and also introduces a simple O-I project model. The model identifies, for every O-I project, four major components, each of which is discussed in detail below.

Chapter II, entitled A History of Operation Identification,

briefly traces the development of property marking from prehistoric man to the current widespread promotion of O-I projects. The varieties of labeling devices, funding sources, and implementing agencies in existence today are discussed.

The remaining four chapters contain detailed discussions about the four components identified in the project model -- recruitment, distribution and enrollment, burglary deterrence, and property recovery. Topics covered within each chapter include project objectives, implementation alternatives, unexpected problems, benefits, the types of project records maintained, and reported results and evaluative findings.

B. What is Operation Identification?

During the past decade, one of the more significant changes within the law enforcement community has been the widespread growth of crime prevention programs. Designed to provide citizens with both the knowledge and, whenever possible, the equipment to reduce their chances of being victimized, crime prevention projects now exist in law enforcement agencies throughout the United States. Although these programs vary considerably in content and scope from one jurisdiction to another, almost all contain projects to inform citizens about specific steps that can be taken to reduce the risk of being burglarized. Property marking projects are one of the most commonly utilized programs.

Collectively identified as Operation Identification, these projects seek to deter burglars by encouraging citizens to mark their valuable property with a unique, traceable

number, sign, or name which can be used to establish ownership if the property is stolen. The O-I projects discussed in this paper are limited to property marking programs which possess all of the following characteristics:

- o citizens are encouraged to mark each movable piece of valuable property they own,
- o a unique personal identifier is used by each citizen, and
- o burglary deterrence is a goal of the project.

C. Major O-I Project Components

Of the four project components (recruitment, distribution and enrollment, burglary deterrence, and property recovery), the first two represent functional descriptions of the project efforts and include all activities planned and implemented by the project itself. The last two represent the two principal objectives of O-I: to recruit and enroll substantial enough numbers of citizens into the project so that the risk of burglary decreases and stolen property is more frequently returned to the owner. A brief discussion of each component follows.

1. Recruitment. This component includes all activities and materials which are used to inform the public and potential burglars about O-I. These efforts are designed to educate each citizen about the risks of being burglarized, the existence of the local O-I project, its usefulness in reducing the risks of burglary, and the steps necessary to join the project. These educational and promotional efforts range from broad appeals in the mass media to individual contacts through group presentations and door-to-door canvassing.

2. Distribution and Enrollment. This component includes all project activities and materials utilized in actually enrolling each citizen in the project. These include the kinds of instructions given to each participant, the types of identifiers recommended, the types of marking tools or labels used, the various kinds of centers used for distributing the marking materials, and the extent and completeness of project records.

3. Burglary Deterrence. This is a major objective of all O-I projects presented in this paper. A surprising number of distinct interventions which O-I can make into the burglary process is identified later in this paper. Fundamental to each intervention is the existence of a permanent, unique identifier which can be used to establish the owner of stolen property.

Discussion in this paper about the deterrent effect of O-I includes consideration of the following questions:

- Are burglars aware of O-I? If they are, what is their attitude about it?
- Do burglars avoid households identified as O-I participants? If so, why?
- Does O-I merely displace burglaries to non-participating households?
- Is marked property more difficult to fence? Do O-I markings reduce the "market value" of stolen property?

4. Property Recovery. This second O-I objective also depends upon the existence of a unique, personal identifier that can be easily used to trace property owners. As with

burglary deterrence, the O-I concept appears to have several logical avenues of intervention into the property recovery process.

A number of questions about property recovery are considered in the final chapter of this paper:

- Does every citizen possess an unique, traceable identifier?
- What percent of all valuable property cannot be easily marked? and
- What difficulties arise in tracing property owners who live in other jurisdictions?

In addition to the two major O-I objectives identified above, many police departments also use Operation Identification as part of their police-community relations (PCR) program. The recruitment and enrollment of project participants by individual police officers are often seen as useful mechanisms by which citizens can meet police officers and become aware of the police interest in crime prevention. Some law enforcement officials believe that the PCR benefits of O-I also help to deter residential burglary by reducing citizenry reluctance to report suspicious behavior to the police.

D. Past Evaluations of Operation Identification

The ultimate objectives of the O-I project components identified above (participant recruitment and enrollment, burglary reduction, and property recovery) also represent the basic evaluation questions which must be answered for each O-I project. These questions are:

- How many citizens have joined the O-I project by marking their property and posting decals?

- o Has the burglary rate decreased significantly for O-I participating households and businesses? and
- o Has the rate of property recovery and return increased significantly for burglarized O-I households and businesses?

Although these questions are easily formulated, few projects have attempted to answer them and even fewer have succeeded in producing any relevant results. The reasons for the paucity of evaluations of individual O-I projects are the same problems that continue to hinder the adequate evaluation of many criminal justice programs today. Among the reasons that have been most frequently cited are:

1. No Need for Evaluation. Many project implementors have not believed that they needed to evaluate their O-I project. The claimed success of O-I in other communities has often been accepted as "proof" that O-I is a valid and transferable burglary reduction concept. Also contributing to the lack of interest in program evaluation was the attitude that the PCR value of Operation Identification was an "obvious" benefit that justified its existence even if the burglary deterrence and property recovery benefits could not be demonstrated. Finally the evaluation of O-I has not been initiated in many communities simply because of the lack of training or familiarity by project implementors with the purpose and use of program evaluation. In many instances, this lack of familiarity has been fostered by the absence of any history of project evaluation within the implementing agency itself.

2. Lack of Trained Personnel. Also limiting the extent of evaluation efforts in the past has been the fact that staff

personnel for many O-I projects have not possessed the research and technical skills required for the design and implementation of an evaluation plan. In addition, the very small budgets of most O-I projects have not enabled project implementors to "purchase" needed evaluation skills from an outside source.

3. Lack of Adequate Funds. Some projects, although possessing trained staff or access to evaluation skills, have been unable to initiate evaluation plans because of the lack of adequate funding. Without the necessary resources, many projects have been unable to collect the basic data with which to construct valid measures of project effectiveness.

4. Lack of Adequate Data. The few O-I projects that have attempted program evaluations have experienced significant difficulties with the acquisition of complete and reliable data. As examples, most projects have maintained very crude records of the total number of O-I participants in their communities. Obtaining burglary data for O-I participants, both before and after joining an O-I project, has been infeasible for most projects due to the inaccessibility and structure of police crime records; and finally the low burglary rate among O-I participants coupled with low participation rates has meant that the amount of O-I marked property stolen in most communities has been minuscule. As a result, no significant evaluation of the effect of O-I upon the recovery and return of stolen property has been accomplished.

Despite all the difficulties identified above, some evalu-

ations of Operation Identification do exist and are cited extensively throughout the remainder of this review. These evaluations, almost without exception, were not project initiated (i.e., both implemented and funded by the project itself). Rather, most O-I evaluations of individual projects have been completed because of grant requirements imposed by an outside funding agency. For example, O-I projects in both San Jose, California[40] and Seattle, Washington[37] structured their projects to obtain effectiveness data for program evaluation plans implemented as part of the funding grant requirements of their respective state criminal justice planning agencies. Federal guidelines for the High Impact Anti-Crime Program initiated in 1972 by LEAA stipulated that each project grant application must contain an evaluation component. Operation Identification projects in two Impact cities (St. Louis[2e] and Denver[97]) were evaluated in response to these guidelines. In many instances, the outside funding agency has also provided the additional resources required for these evaluation studies.

In response to the difficulties of limited funding, untrained personnel, and inadequate data faced by most individual O-I projects, the state criminal justice planning agencies in California,[6] Illinois,[1] and Minnesota[49] have conducted evaluations of Operation Identification based on the combined results of several projects within their states.

By drawing upon the reported results of O-I projects throughout the country, this paper represents part of the most extensive evaluation of Operation Identification to date.

CHAPTER II. A HISTORY OF OPERATION IDENTIFICATION

A. Introduction

Marking property to establish ownership has been a natural outgrowth of man's strong urge to protect and retain his own property. As far back as 25,000 years ago, Paleolithic man marked his possessions with simple symbols. As man became more sophisticated, he used more elaborate identifying designs, such as crests, badges, and letters.[1] More recently, in what may be considered the first organized property marking program, identifying symbols were used for cattle branding.

Suprisingly, however, there was no promotion by law enforcement agencies of large scale property marking projects to improve property security until 1963 when Everett Holladay, then Police Chief of the Monterey Park (California) Police Department, established an Operation Identification (O-I) program.[76] Its unique feature was the use of a small vibrating engraving tool to mark each individual's valuables. Other property marking projects during the past ten years have had different approaches to the marking process. For example, the property marking program of the Los Angeles Police Department is characterized by the use of adhesive labels.[9a] Recently, the Sanford Corporation has introduced a property marking program utilizing an ink visible only under an ultraviolet light.[41]

Since the Operation Identification program in Monterey Park was publicized, the number of law enforcement agencies

adopting O-I programs has increased phenomenally. While the concept grew slowly at first, substantial national publicity in the late 1960's and early 1970's resulted in the emergence of O-I projects throughout the United States and several foreign countries. A 1974 report on burglary prevention units prepared by the Urban Institute for the Law Enforcement Assistance Administration, estimated that more than 80 percent of all police departments in the United States have some type of property marking project.[43] The National Crime Prevention Institute, in a 1974 survey of its graduates, found that 84 percent of those responding indicated that their department had an Operation Identification project.[67] The Center for Research in Criminal Justice at the University of Illinois At Chicago Circle found 183 ongoing projects in Illinois in the course of a 1974 study evaluating Operation Identification throughout the State.[1] Although the exact number of O-I projects throughout the United States is unknown, it appears that O-I projects exist in quantity in every state of the Union.

Numerous individuals and agencies are known to have contributed significantly to the increased use of the O-I concept, oftentimes through publicizing and sponsoring programs on a national scale. Some of these are discussed below.

B. The Beginning

Police Chief Everett Holladay initiated Operation Identification in 1953 as a solution to the problem of hubcap stealing in Monterey Park, California.[1] Largely through his efforts and the cooperation of the local Exchange Club,[76] the program

was later adopted in 1963 as a means of reducing the risk of property crime within households throughout Monterey Park. Chief Holladay received and responded to thousands of inquiries from other police agencies as a result of national publicity about the project in such publications as the Wall Street Journal,[23] the Police Chief,[82] Better Homes and Gardens,[25] McCall's,[106] and Time.[105] Many of the early O-I programs were initiated as a direct result of information received from Chief Holladay.

C. Involvement of Engraving Tool Manufacturers

Many O-I programs were also initiated by contacts between prospective implementors of O-I projects, such as police departments and civic organizations, and the manufacturers of engraving tools.[42] Three tool manufacturers presently dominate the engraving pen market. These are Burgess Vibrocrafters, Incorporated; Dremel Manufacturing Company; and Wen Products, Incorporated. The Burgess and Dremel companies currently sell engraving tools directly to O-I projects. The Wen Company sells almost exclusively to distributors. All three companies market a kit which includes an engraving tool, warning decals, and sample publicity material, so that a police department, civic organization, or even an individual can obtain the materials necessary to implement a property engraving project.

D. Involvement of Funding, Implementing, and Supporting Agencies

A variety of agencies have been involved with funding and implementing Operation Identification projects. Over the last six years, Law Enforcement Assistance Administration grants[108]

have provided considerable amounts of "seed" or "start up" monies for many O-I projects across the country. Typically, the bulk of these grants is used to purchase materials, while the implementing agencies provide the required manpower. State planning agencies have also been instrumental in funding such projects. In Illinois[1] and Minnesota,[49] for example, the SPA's have instituted statewide O-I programs which provide materials and guidelines to local implementing agencies.

Numerous civic organizations have provided both funding and assistance to local O-I projects. Local organizations such as Exchange Clubs, Rotary Clubs, Lions Clubs, the Jaycees, and women's clubs throughout the country have purchased property engraving materials for local law enforcement agencies. Frequently they also have provided volunteers to help administer the projects. The National Exchange Club[107] knows of over 350 local chapters which have started O-I projects after securing information issued by the national headquarters.

Insurance companies have also played a major role in the sponsorship and implementation of O-I projects. Soon after the Independent Insurance Agents of Michigan experienced success with the O-I program in 1971, the National Association of Insurance Agents (NAIA)[44] began sponsoring Operation Identification as a national program for its 125,000 members. The NAIA provides kits to its members to help them establish an O-I project in their own communities.

In many localities, independent insurance agents lend engraving tools and give out window stickers to homeowners at

no charge. Currently four insurance companies in Michigan are allowing a five percent credit on homeowners policy premiums to O-I participants. Other companies throughout the country offer as much as ten percent reductions on such premiums to participants of local O-I projects.[44]

A private company, Listfax Corporation, is selling its own Operation Identification project. For a fee ranging from $14.95 for one years' registration to $29.95 for five years' registration, Listfax will send a customer its "Burglary Prevention Kit" which includes:

- a stencil which can be used to trace a unique identifier on property;
- a carbide-tip mechanical engraver;
- stickers for posting on windows and doors; and
- registration forms.

Listfax recommends that one copy of the registration form be sent to the customer's local police department and the other returned to Listfax for entry on its own computer system which is accessible to police through a toll-free telephone line.[109]

Operation Identification has received recognition through proposed federal legislation.[13, 14, 15, 16, 17] A bill currently pending in the United States House of Representatives, H. R. 9175, entitled "The Community Anticrime Assistance Act," would provide federal grants to cities and nonprofit agencies to support crime prevention activities, and identifies Operation Identification as a major component of burglary reduction.[13]

CHAPTER III. PARTICIPANT RECRUITMENT FOR OPERATION IDENTIFICATION

A. Introduction

Successful implementation of an Operation Identification project is dependent upon the willingness of citizens to have their property marked and to display evidence that this has been done. Ideally, the citizenry would realize the need for such action and would be anxious to participate in such a program. Under these circumstances, the implementing agency would need only to make the marking tools and project materials available to the public.

In reality, however, such an ideal situation does not exist. One survey of Operation Identification projects revealed that representatives of 26 percent of the projects surveyed saw public apathy as a major problem, while those from another 18 percent of the projects cited voluntary public participation as problematic.[67] As a result, agencies promoting Operation Identification have been forced to devote considerable time and resources to "selling" O-I projects to the public and to actively recruiting participants.

The activities engaged in by Operation Identification projects to encourage citizen participation constitute the recruitment component of all O-I projects. These activities include the use of mass media, the distribution of various kinds of project literature, and the contact by project personnel with groups and individuals. This section presents the specific

objectives of this component, the methods used to achieve these objectives, the major assumptions inherent in these methods, and a summary of evaluation findings about O-I recruitment activities.

B. Recruitment Objectives

The primary objective of the recruitment component for an O-I project is to recruit citizens for participation in Operation Identification. This objective can be measured in terms of either the actual numbers of people or the percent of the target population that join the project. For instance, the Denver O-I project, started in 1973, hopes to recruit a total of 65,000 people by May 1975;[94] whereas the Seattle project, also started in 1973, had a goal of achieving a participation level of 30 percent within its target area by July 1974.[36]

Another major objective of recruitment is to increase public awareness of both the extent of crimes against property in the community and the existence of the Operation Identification project. Greater public awareness is often a separate project objective, particularly in those localities which conduct extensive public education campaigns in crime prevention. As examples, a booklet prepared by the Region C Criminal Justice Planning Agency in Shelby, North Carolina, mentions the importance of citizen education as an objective,[51] and the Minnesota SPA has included increased citizen awareness as a short-range objective of its statewide Crime Watch program.[49] It is noteworthy that, while public education is often cited as an essential first step to citizen action,[75] public awareness does not

guarantee citizen involvement. The burglary prevention project in Seattle found that its public education campaign had not succeeded in stimulating any significant level of citizen action;[35] that is, increasing people's awareness about crime and the existence of an O-I project does not ensure their active participation in the project.

A third objective of recruitment, not frequently identified, is based upon the fact that if the general public is informed about Operation Identification, burglars and fences in the community will also become aware of the project and its potential effect upon them. Awareness and understanding of the O-I concept is a necessary step in the process of deterring burglars from breaking into participants' homes and deterring fences from receiving marked stolen property.[75] This process is more fully discussed below in the burglary deterrence section.

Improved police-community relations is frequently an unstated objective of the recruitment efforts. This objective is based on the belief that publicity which shows police officers involved in a public assistance project to help citizens prevent crime improves the police image in the community.

C. Recruitment Methods

In order to meet their public education and participation objectives, local projects use a wide variety of methods to inform and recruit citizens. These methods vary from the broad, impersonal coverage obtained through the mass media (newspapers, radio, television and visual displays), to more direct, personalized methods such as group presentations and door-to-door

canvassing.

Almost all projects utilize newspapers in one form or another to publicize Operation Identification and to encourage citizens to participate. Such publicity may include news items and feature stories about project activities as well as donated and paid advertising. Regional and statewide programs often provide standardized press releases and advertising layouts to local implementors.[1, 51] As an example, the Minnesota Crime Watch, sponsored by the Minnesota SPA, has used newspaper publicity quite extensively; over 200 ads and 175 news items have appeared in 120 different publications.[49] In one year, the St. Louis O-I project, jointly sponsored by the St. Louis Police Department and the Women's Crusade Against Crime, was publicized in 73 news articles which appeared in 25 local and regional newspapers.[2a] The cost of such efforts to the project can be quite minimal if local newspapers present feature news stories about the project, and advertisements are sponsored by businesses and civic organizations.[51] Some projects with sufficient funding purchase their own promotional ads. Denver, for example, has requested $23,340 for newspaper advertising for a 10 month period ending in early 1976 (grant application is still pending).[97]

Although newspaper publicity may reach significant numbers of people, it also has the disadvantage of frequently reaching beyond the designated target areas and creating a demand for O-I services which cannot be satisfied.[51] Nevertheless, separate studies in St. Louis,[2d] Denver[96] and Illinois[1] have all reported that newspaper publicity remains one of the most effective means

of reaching a large number of people.

Radio and television are also frequently used to publicize O-I projects. As with newspapers, the types of publicity include news reports, feature stories, interviews with project staff, and direct advertising with public service and paid announcements. Standardized scripts are often provided to local projects by regional, statewide, or nationally sponsored programs.[1, 51] The publicity costs can be minimized if the production expenses and air time are donated by the stations, cooperating businesses, or civic organizations.[51] Some projects have sufficient funding to produce and sponsor their own promotional announcements. Denver has requested $11,660 in their 10 month grant application for radio and television advertising.[97] The evaluation of O-I projects statewide in Illinois found that the most frequently used electronic media item was the public service announcement, usually lasting 15, 30, or 60 seconds.[1] Illinois,[1] St. Louis,[2d] and Denver[96] have all reported encouraging results with television promotion. The Denver study found radio to be the least effective mass medium.[96] As with newspapers, a major problem in using electronic media for promotion is that broadcast coverage may extend well beyond the designated project target areas and thereby create an unservable demand.[51] Another frequent problem is that donated public service announcements are rarely broadcast during prime time, and in fact are most frequently aired when few people are likely to be reached.[1]

Visual displays are often utilized to inform large numbers of people about Operation Identification. These include billboards, posters, bumper stickers, booths at shopping centers, and mobile vans containing display materials. In the Minnesota Crime Watch program for example, 3,000 posters were distributed and 60 billboards were sponsored throughout the state during the last six months of 1973.[49] One Massachusetts community even erected a sign at the city limits warning outsiders that residences in the city were protected by Operation Identification.[86]

Display booths are frequently used at shopping centers, fairs, parks, conventions, festivals, and schools to combine visual displays with some personal contact.[3, 39a, 47a, 54] Mobile vans and trailers are also used by some projects to disseminate information about crime prevention programs, including Operation Identification.[59, 64, 111] Since the burglary deterrent effect of Operation Identification depends upon burglar awareness of the O-I concept, a few projects have directed promotional efforts specifically at criminals by placing posters in jails or holdovers.[2e, 39a] No evaluative information is available on the results of such efforts.

All of the recruitment methods discussed thus far can reach sizable numbers of people in a relatively short period of time. Of all these methods, however, only display booths, vans, and trailers provide any personal contact between project representatives and individual citizens. To gain maximum police-community relations benefits, many Operation Identification projects prefer to use more personal face-to-face methods of promotion. Almost universally project representatives give presentations about Operation Identification at group meetings. Most

frequently reached are civic clubs, social groups, neighborhood associations, and church organizations. Some projects use visual aids such as slides and movies to standardize the presentation and to present more accurate information.[56, 60] During its first eight months of existence the Minnesota Crime Watch program recorded a total of 1,020 group presentations, reaching over 54,000 people.[49] Several projects provide group presentations at "block parties" held in citizens' homes, in some instances using a burglary victim as the host.[55, 67, 74] In one city, formal crime prevention seminars, held to increase public awareness, include Operation Identification information.[47a]

The St. Louis O-I project has found that group presentations are one of the few effective methods of reaching individuals living in high-crime areas.[2e] It has been stressed that the people making these presentations should be trained for the job and paid for their effort.[51] Other than personnel costs, there appear to be no major problems inherent in using such presentations.

Some projects inject even more personal contact with citizens by recruiting O-I participants through door-to-door canvassing by project workers or volunteers. Each contact can either be limited to a short presentation and distribution of literature, or expanded to include immediate enrollment of the household in the program by providing property marking services and identifying decals. In Detroit, Police Department Community Service Officers have been used in a door-to-door campaign in a high crime inner-city area to enroll residents in the O-I project

and to mark their valuable property. Over a 22-month period, more than 29,000 items were engraved in 6,419 homes.[48] Indianapolis[112] and Seattle[35] also have found door-to-door canvassing to be an effective promotion device.

Other cities, however, have experienced difficulties with this method. Door-to-door canvassing in St. Louis during 1972 produced such a poor rate of citizen response that it has not been tried again.[2b] Similar results were reported in a door-to-door recruitment effort by the Jaycees in Hoffman Estates, Illinois.[63] A city ordinance in Berkeley, California, initially prohibited police officers from doing door-to-door soliciting for the project.[76] Other problems with door-to-door canvassing include the adverse effects of bad weather,[48] lack of manpower,[48] and negative citizen response.[2b]

The use of brochures or pamphlets explaining the Operation Identification concept seems to be characteristic of nearly all O-I projects. Although these materials are sometimes standardized for an entire state or region, most local projects either adapt or design the literature to fit their project. These materials are handed out during group presentations, door-to-door contacts, and from display booths and mobile vans. In some cases, they are mailed directly to residents of target areas. In Pasadena, California, for instance, O-I literature was enclosed in utility bills.[11] In Minnesota, the SPA used 37 different organizations to distribute O-I literature.[49] In Wichita, Kansas, brochures were placed in grocery bags at super-

markets.[47a] Such distribution helps to get project information directly into the hands of the target population at comparatively little cost.

Other methods for promoting citizen involvement in Operation Identification seem limited only by the imagination of the project staff itself. The Welcome Wagon in Wichita has been used to inform new residents of the project's existence.[47a] Restaurant placemats are used in St. Clair Shores, Michigan as a means of publicizing various crime prevention programs.[46c] Private businesses frequently agree to promote an O-I project among their employees and even clients.[33]

D. Major Assumptions of the Recruitment Process

A basic assumption of any publicity campaign is that when people see or hear a particular piece of information, they will "absorb" all or part of the information being conveyed. Especially with the mass media, people listen very selectively because of the sheer volume of material being transmitted.

In addition, an important assumption of all O-I promotion is that once people have learned that a project exists, they will want to participate.[1, 75] In reality, the actual rate of positive response to any publicity campaign depends upon the type of medium employed, the specific content of the message itself, and the characteristics of the project. The willingness to participate after being informed about the project is also dependent upon how strongly the citizen believes he may become the victim of a theft. As a result, the success of an O-I promotional campaign depends upon how well it is able to

(1) increase the citizen's awareness of the crime problem,

(2) make him aware of the existence of the Operation Identification project in his community,

(3) convince him that the O-I concept can effectively reduce his chances of being victimized, and

(4) persuade him to become a participant in the project.

Another assumption of many O-I projects is that the increased contact between the police department and the citizens who participate in the project produces an improved perception of the police and a reduced fear of crime among those citizens.[97]

E. Evaluations of Recruitment Activities

Only a small number of Operation Identification projects have attempted any formal evaluation of their recruitment efforts. The scope of these evaluations and the methodologies used vary widely, but these efforts do provide some information about the effectiveness of O-I recruitment activities.

The Operation Identification project in St. Louis, part of the High Impact Anti-Crime Program, has conducted two telephone surveys to aid in the evaluation of the project. The first survey, dealing exclusively with Operation Identification, polled 348 persons, both participants and non-participants. The second survey questioned 254 persons about the St. Louis High Impact Anti-Crime Program in general. Both surveys indicated that approximately 70 percent of those questioned had heard of Operation Identification.[2d] Of those who had heard of the project, 46 percent recalled having seen promotion on television, 12 percent recalled newspaper promotion, and 30 percent recalled various other sources of information such as Police-Community

Relations Committee meetings or conversations with friends.[2d] A telephone survey was also used to evaluate the Denver O-I promotion campaign. Of the 825 persons responding, 79 percent had heard of Operation Identification.[96]

As part of the evaluation of the Minnesota Crime Watch Program, a pretest survey was conducted during August, 1973, two months before the start of the program promotional campaign. Of the 855 persons interviewed, 35 percent knew that some form of property marking program was already available in their communities and 17 percent claimed to have marked their property. However, when asked about burglary deterrence programs in their communities, only 9.5 percent mentioned Operation Identification. The tentative conclusions in the evaluation report were that people were marking their property without joining the local O-I project and for reasons other than burglary prevention. It is also possible that the deterrence potential of O-I had not been adequately communicated.[49]

The statewide evaluation of Operation Identification projects in Illinois also conducted a survey of O-I participants and non-participants. Most of those interviewed had some awareness of Operation Identification and most had a favorable impression of the program. The evaluation also showed, however, that even the most "successful" local projects were only able to achieve participation levels of from three to five percent of the households within their jurisdictions, while the vast majority of the projects had levels much lower than that.

Other studies also support the conclusion that awareness

of Operation Identification does not ensure participation. The Denver telephone survey, cited above, showed that only one-third of the respondents who were aware of the O-I project had actually joined.[94] In the first St. Louis evaluation survey, only 11 percent of those interviewed who were aware of the O-I program had joined. This low participation rate is surprising since nearly all who had heard of the project had a favorable impression of it.[2d]

Also, in the second St. Louis survey 50 percent of the non-participants interviewed had heard of the project and nearly all had a favorable impression of it. Surprisingly, however, only 66 percent of those favorably impressed had any interest in joining the project.[2a]

It would seem that the participation rate among citizens receiving information about O-I is at least partly dependent upon the medium used to convey the information. The Illinois evaluation survey results indicated that more non-participants than participants had learned of the O-I program through television, leading to the study's conclusion that television promotion was the least likely method to influence people to join the program. In contrast, however, the Denver survey indicated that television was the most effective promotional medium, followed by newspapers and word-of-mouth. Radio promotion was found to be relatively ineffective.[96]

In Chicago, promotion by civic groups was judged to be the most likely method to produce participation among those reached.[1] The door-to-door canvassing by Police Community Service Officers

in Detroit appears to have been well received. A follow-up telephone survey indicated that 95 percent of the citizens contacted favored the CSO program, an important segment of which included the property marking project.[48]

In Seattle, during the first year of a burglary reduction program, a public information campaign utilizing newspapers, electronic media, and brochure saturation was focused in a target area.[35] While such a campaign was found to be of help in familiarizing the community about the burglary reduction project, it did not generate any significant amount of voluntary citizen response. The most effective method of gaining the desired ongoing citizen involvement was for organizers to manage a careful block-by-block effort aimed at stimulating and guiding citizen interest. While this method yielded good results, it also required excessive amounts of time.

To date, little tangible evidence exists about the effects of O-I promotion efforts upon police-community relations. A 1973 progress report on the Florida Public Education Program on Crime Prevention, sponsored by the Governor's Council on Criminal Justice, indicates that the program has helped produce an increase in the willingness of citizens to report crimes.[82] It is not known how this increased citizen response was measured.

CHAPTER IV. MATERIAL DISTRIBUTION AND PARTICIPANT ENROLLMENT

A. Introduction

An Operation Identification project's distribution and enrollment phase consists of (1) the dissemination of project materials (marking tools, property inventory forms, and various other kinds of informational and instructional materials) to members of the target population; (2) the use of these materials to mark and inventory valuable property; and (3) the registration of project participants. In general, the distribution of materials and the marking of property are basic elements found in every O-I project. The use of property inventories varies from project to project, however, and in a few cases, participant registration is completely absent.

The major assumptions inherent in this phase are:

(1) each person receiving project materials will mark (and, where required, inventory) his property in accordance with the instructions he has been given; and

(2) each participant will register with the project where required.

Various methods of implementing the distribution and enrollment phase,problems that have been identified with these implementation alternatives, documented results relevant to the above assumptions, and the effectiveness measures that have been used to evaluate this phase are discussed below.

B. Alternative Distribution and Enrollment Methods

The most common method of marking property with an identifying symbol is the use of electronic engravers to etch an identifying number into the surface of each piece of property. These tools are usually made available for loan for a specified period of time from distribution sites set up by project implementors. Sites used to distribute O-I materials vary with location. In Denver, for example, engravers are available at police and fire stations, police storefronts, and realtor offices.[102] Police station personnel also distribute engravers in Indianapolis,[66] Washington, D. C.,[72a] and Phoenix.[100a] Fire stations are distribution sites in Oakland,[7] New Orleans,[71] and Phoenix.[100a] Phoenix also utilizes banks, credit unions, and insurance companies,[100a] as does the program in Indianapolis.[66] Libraries are used for distribution with good results in St. Louis,[2b] while Wichita reports a favorable response to the use of supermarkets for this purpose.[47a] In addition, in some communities engravers are distributed to civic organizations, businesses,[47a] and apartment complexes[100a] for use by their members, employees, and residents.

Distribution of the engraving tools is usually made directly to citizens, free of charge, but a small number of projects do require a deposit to borrow the pen. For example, a $5 deposit is required to borrow an engraver in Cuyahoga Falls, Ohio,[92] a $10 deposit is required in North Lakeview (Chicago), Illinois.[53] In other areas, civic groups and large employers are encouraged to purchase the tools for use by their members and employees.

Tools are also readily available through local distributors such as hardware stores. In fact, Wen Products, Inc., one of the three major manufacturers of engravers, has sold over 500,000 of them since 1970, exclusively through distributors.[42]

In a few projects, notably that operated by the Los Angeles Police Department, the use of destruction resistant labels is advocated. These labels are particularly suitable for marking both non-engravable items, such as clothing, and items whose value would be diminished by physical engraving, such as antiques. It is suggested that use of labels rather than electronic engravers makes the marking of newly-purchased items easier and overcomes people's apparent reluctance to engrave property. In addition, the cost of the labels (approximately $3.25 for 250 labels) can be borne by the participant (although his willingness to do so has not been demonstrated), whereas the cost of electronic engravers may be prohibitive for O-I projects in large metropolitan areas such as Los Angeles. There the initial cost for engravers and printed materials alone would be approximately $25,000. The loss of engraving tools would also be eliminated through the use of labels.[9a] Other recommended property identification methods include tattooing (of items such as furs), and the photographing of unmarkable items.[75]

In most projects, each participant in the O-I program must mark his own property. Some projects, however, provide engraving services. In St. Petersburg, Florida, for example, personnel using mobile vans go into neighborhoods and assist

residents with the marking and inventorying of their property.[99a] In selected areas of St. Louis,[2b] Denver,[25] and San Jose,[40] volunteers or project staff members have been used to offer engraving services on a door-to-door basis. Explorer Scouts have been used for the same purpose in Phoenix,[100b] In Multnomah County, Oregon[39a] and Columbus, Ohio,[87] engraving services are provided for disabled, shut-in, or elderly citizens. In Phoenix, some retailers and repair shops will engrave newly-purchased or serviced articles for their customers.[100a]

A wide variety of identifying numbers are recommended for use by O-I projects. Many projects, including Illinois[1] and St. Louis,[2a] advise the use of the participants' driver's license number prefixed with a two or three letter abbreviation for the state. In New York City,[34] participants are advised to use their Social Security number. Operation Identification projects operating under the statewide Minnesota Crime Watch Program[49] assign a unique PIN number (permanent identifying number) to each participant prefixed with the NCIC code (National Crime Information Center) for the police jurisdiction in which he resides. A common difficulty for most O-I projects are the varieties of non-recommended, and frequently non-traceable, identifiers which are used. These include name, address, zip code, initials, and incomplete driver's license and Social Security numbers.

Procedures for enrolling (registering) participants also vary from project to project. For the purpose of property recovery, participant registration with the O-I project is unnecessary in those communities in which a citizen's driver's license number is used to identify his property and the local law enforcement agency has ready access to state motor vehicle files.[38] Some projects, such as New Orleans[71] and Erie County, New York,[93] rely on participants to voluntarily mail a registration card to their police department. (In New Orleans the participant receives no decals until he has registered.) Other programs register the participant when he either borrows or returns the engraving tool. In St. Petersburg, Florida, citizens attending O-I presentations are contacted by project staff approximately 30 days after the presentation, when those persons who have marked their property are registered as program participants.[99a] San Antonio charges $1 for the registration of each participant in the project's computerized data bank.[101b]

C. Implementation Problems

Several common problems have been identified to date with the distribution, property marking, and registration aspects of Operation Identification. Some projects have found that police stations and insurance companies are inadequate distribution sites because most citizens have limited contact with them.[47a] On the other hand, it has been found that supermarket personnel generally have not kept accurate records of pen use.[47a]

Public apathy and the difficulty in getting citizens to actually engrave their property is probably the greatest problem

encountered in the marking process.[2e, 11, 66, 67] Twenty-six percent of the respondents to a survey conducted by the National Crime Prevention Institute among police and state planning agencies indicated that public apathy had been a problem.[67] Twenty-three percent of these respondents reported an inadequate pen supply. Lost and damaged engravers have been a problem in Phoenix.[100a]

A New York City Police Department report[34] has listed some common mistakes in marking property, including failure to provide a complete identifying number and an indication of the participant's location (e.g., his state). Difficulty in marking certain items can also be a problem (e.g., clothing, drugs, securities).[1]

The problems identified above are not limited to individual projects. This is evidenced by the evaluation report of the statewide O-I program sponsored by the Illinois SPA. Interviews of 108 O-I project implementors in northern Illinois communities (excluding those in the Chicago area) revealed that 60.2 percent had experienced a lack of community support. Problems with engraving tools and printed material were also identified in 18.5 percent and 12.0 percent of the projects respectively. Thirteen percent of the respondents indicated that they had experienced administrative difficulties. The evaluators concluded that "a much greater investment of money, manpower, and auxiliary community support resources would be required" to achieve greater enrollment.[1]

Participant registration creates additional problems. Some people are reluctant to register with programs operated by police departments because they feel it constitutes an invasion of their privacy.[2e, 3, 66] Failure of participants to register has also been a problem. The St. Louis project has identified the tendency of some distribution sites to accumulate registration cards, rather than forwarding them to a centralized location.[3]

D. Evaluation Results

Few measures of the effectiveness of Operation Identification's distribution and enrollment phase either exist or have been proposed. Even fewer evaluative results of this phase, other than an accounting of the numbers of new participants (e.g., monthly) and of participants to date, have been reported. Denver and Phoenix record the participation achieved through each of their distribution sites. In Denver, for example, during the project's two-year existence, the four police stations have recorded 2,946 participants, 25 fire stations have recorded 1,689, and police storefronts have accounted for 245.[102] In Phoenix, in a six-month period five police stations registered 591 participants, while 31 fire stations registered 2,690 participants. Another 185 participants registered in apartment complexes.[100a]

Finally, the rates of engraver loss have also been suggested as an important measure of the adequacy of distribution methods. Projects which suffer frequent engraver loss tend to be those without adequate records of engraver use or without a procedure for recovering overdue tools.

CHAPTER V. BURGLARY DETERRENCE EFFECTS OF OPERATION IDENTIFICATION

A. Introduction

The remaining sections of this paper deal with the two principal objectives of the O-I concept: burglary deterrence and property recovery. Beginning with a brief discussion of the potential intervention which successful O-I projects may make into the burglary and property recovery processes, respectively, these intervention frameworks are then used to present past findings relating to each objective.

The burglary process can be modeled as a series of decisions or actions taken by the burglar himself. This model assumes that every burglary consists of all or some of the following steps:

(1) the decision to commit a burglary;

(2) the surveillance and selection of a specific target;

(3) the successful entrance into the target;

(4) the selection of specific property items to be taken;

(5) the escape; and

(6) the successful disposition of the property to a buyer.

The burglary deterrence capability of the O-I concept depends upon the reality and extent of the intervention that can be introduced by O-I into one or more of the burglary process steps identified above. These interventions and their deterrent effects for each step in the burglary process are

summarized in Table 1. Several of these interventions and effects are frequently cited as separate project objectives, independent of their contribution to burglary reduction. For example, many projects postulate that O-I will assist the police in identifying and apprehending burglars and fences, and will also increase the difficulty of fencing stolen property. Although these specific effects can only be realized if O-I participants are burglarized, it is not incongruous to include them in a discussion of burglary deterrence. The ultimate goal of a realistic burglary deterrence program is to deter as much burglary as possible; and, when deterrence does not occur, to minimize the market value of the stolen property, to apprehend the offender, and to return the property to its owner. These post-burglary capabilities of a burglary reduction program, such as O-I, in theory provide its credibility among burglars, which in turn constitutes the essential ingredient of deterrence.

B. Major Components of Operation Identification's Burglary Deterrence Effect

Before reviewing O-I's ability to achieve burglary reductions, the major components which contribute to the overall deterrent effect will be discussed. Specific interventions produced by each component, as well as inherent assumptions and relevant evaluation results, will be indicated.

Increased crime prevention awareness. The first such component consists of an increased crime prevention awareness among participants. This may be reflected both in other crime

Table 1

BURGLARY DETERRENT EFFECTS OF THE INTERVENTION OF OPERATION IDENTIFICATION INTO THE BURGLARY PROCESS

Burglary Process	Operation Identification Intervention	Burglary Deterrent Effect
o Decision to commit a burglary	Publicity about O-I project and its effects	Decides not to commit a burglary
o Surveillance and selection of a target	Use of decals to identify O-I participants	Selects a non-O-I target
o Entrance into the target	O-I participants adopt additional target-hardening devices	Cannot gain entrance
o Selection of property items to steal	Placement of identifier on each piece of property	Does not take marked items
o Escape	Possession of marked property	Increased risk of apprehension
o Disposition of stolen property	Publicity about O-I project and presence of property markings	Increased difficulty of fencing, lower value of marked property

prevention and target hardening measures they may take, and in improved police-community relations.

While not strictly elements of the O-I process, other crime prevention programs are often promoted jointly with Operation Identification, and their implementation may aid in deterring burglars. Often included are programs for educating citizens concerning the crime problem and crime prevention techniques,[51, 99a] and neighborhood watch programs.[50] Residential and commercial security surveys are extensively used. Los Angeles,[9a] Seattle,[35, 36] Wichita,[47a] and St. Petersburg, Florida[99b] are among the many communities which have this service available (for additional examples, see references 33, 46c, 57, 73, 74, 75, and 86). In fact, 87 percent of the respondents to a survey of police departments in cities of at least 100,000 population indicated that they provided security inspections.[68] Improved police-community relations is a by-product of Operation Identification that may result in better citizen cooperation with police and a greater willingness to report crimes.[82]

Key assumptions in this component are that O-I participants have a different attitude toward crime prevention than non-participants, and that citizens react favorably to crime prevention services such as O-I and to police departments which provide them. To test these assumptions, several surveys of both O-I participants and non-participants have been conducted. A telephone survey of 870 households in Denver found that while many non-participants take no precautions against burglary, participants are generally aware of the burglary threat

and take more precautions.[96] However, a similar survey of 348 households in St. Louis found that participants had apparently taken fewer precautions than the non-participants. This suggests that either participants rely heavily on O-I as a burglary deterrent, or that non-participants see no need for Operation Identification because of the other precautions they have taken.[104]

Surveys have also been used to measure citizen attitudes toward police. Of 699 O-I participants interviewed in northern Illinois (excluding Chicago), 79 percent were at least somewhat satisfied with the job being done by local police before they joined Operation Identification.[1] Nevertheless, 32 percent indicated that, as a result of their experience in O-I, they had an even better opinion of the local police (only 0.5 percent had a worse opinion). An evaluation of crime control programs in California[6] found that, as a result of public education type programs, the percentage of burglaries reported by other than victims increased from 9.9 to 13.1 percent in a four-month period. Another California study,[75] however, found that such trends were short-term.

Burglar awareness of O-I. The second component of Operation Identification's burglary deterrent effect consists of increased awareness of O-I on the part of the burglar. This component can consist of two distinct elements. The first is the posted warning, most commonly a decal or display card placed on windows and doors by O-I participants as a warning to the potential burglar. Most often, the decals are either distributed

with the marking tool or at the time the tool is returned. In Indianapolis, however, they are issued only after inventory forms have been completed.[66] New Orleans police distribute the decals only after they have received the participant's registration card. In San Jose, California where engraving services were offered door-to-door, the person doing the engraving posted the decals for the citizen.[40]

In Newton, Massachusetts[86] and in several communities around San Antonio,[101b] warnings to burglars are posted at the city limits. The San Antonio signs proclaim individual communities' involvement in Operation Identification and the percent of all households enrolled in the program.

The second element of burglar awareness is O-I project publicity designed to inform the burglar of O-I's existence and its implications for him. In at least one location (Multnomah County, Oregon), this has been accomplished by posting notices in the local jail,[39a] although most projects rely on their recruitment publicity to reach the burglar.

Several assumptions manifest themselves in this process: first, that citizens who post the decals mark their property[47a] and, conversely, that citizens who mark their property post decals. Given that the citizen has done both, the key assumption is that a potential burglar will see the decals and recognize their meaning.[66] Closely related to his reaction to the decals is his reaction to marked property. The usual assumptions are that a burglar prefers unmarked property[38] and, in fact, avoids identifiable property that would be traceable to the scene of a

burglary.[66, 75, 78]

Evaluation of burglar awareness and the deterrent effect of posted warnings has been attempted by interviewing convicted burglars. Conclusions drawn on the basis of this testimony are mixed, however. A report on the property engraving program in Indianapolis[66] cites a case in which a burglar indicated that O-I had a "major" deterrent effect. A survey of 69 convicted burglars conducted as part of the Operation Identification study in Illinois[1] produced an opposite result, however. Sixty-eight percent of those questioned were unaware of O-I. Sixty-seven percent indicated that a decal-marked premise would have no effect on their decision to burglarize it. Similarly, 74 percent stated that markings on a particular item would not influence their decision to steal it.

Risk of apprehension and conviction. A third component of O-I's intervention into the burglary process centers on the burglar's perceived and actual risk of apprehension and conviction as a result of his decision to burglarize an O-I premise. Scarr's analysis of the patterns of burglary in Washington, D. C., Fairfax County, Virginia and Prince George's County, Maryland concluded that a majority of burglars are not caught, and that most arrests in burglary cases are the result of carelessness or the use of informants.[103] Generally, Operation Identification is not related to either. O-I can, however, affect the burglar's risk of apprehension "on scene," during the interval between the burglar's escape from the scene and

his disposition of the stolen merchandise, or when he attempts to sell the goods.

In the first case, the risk of apprehension appears to be proportional to the length of time spent at the burglary scene. A survey[18] of 100 convicted burglars on probation or in jail in the Boston, Massachusetts area indicated that burglars spend an average of five and a maximum of ten minutes gaining entrance to a business or residence. Ninety-one percent usually spent 30 minutes or less inside the premise. Target hardening measures often taken by O-I participants (alarms, locks, improved doors and door frames) can lengthen the time needed to enter a business or residence sufficiently to discourage the burglar. In fact, 73 percent of the burglars interviewed said that evidence of an alarm might prevent their burglarizing a particular location, while 50 percent indicated that strong doors would have the same effect.

Once the burglar has gained entrance, O-I's intervention efforts are directed at delaying his escape, because of the time he spends either checking property for identification numbers or physically removing or defacing such numbers.

From the time he escapes until he disposes of his loot, the burglar risks apprehension with marked stolen property which can be traced to the burglary scene and provide sufficient cause for police to detain him. Even if police are unable to trace the property to a burglary scene, the fact that the identification number apparently does not match the apprehended person labels him as a suspect for future investigation. If, as

claimed, fences are reluctant to deal in marked stolen property, this period of vulnerability and the accompanying risk for the burglar is increased because of the difficulty in disposing of the marked goods.[71, 75, 86] Apprehension and detention of those fences who do receive marked stolen property further reduce the number of outlets available to the burglar.[75] Operation Identification, combined with an effective program of public education,[75] also reduces the market for stolen property by eliminating, or at least making more difficult, the street corner sale of stolen property.

The theory of the above interventions has given rise to extensive publicity and O-I promotion,[69, 79] and to numerous property marking programs[1, 6, 34, 75] throughout the country which claim that Operation Identification will "aid in the apprehension and conviction of property offenders" (both burglars and fences). In fact, this claim has been included as an objective in several grant applications for O-I type programs[1, 34] based, in general, on the assumptions that (1) possession of marked stolen property increases the burglar's and fence's risk of apprehension;[69, 71, 75, 78] (2) difficulty in disposing of marked stolen property increases the time a burglar has it in his possession;[71, 75, 86] (3) burglary investigation is enhanced when a theft involves marked property;[38] (4) burglary suspects are more readily identified as a result of marked property in their possession; (5) suspected burglars and fences apprehended with marked property in their possession are more likely to be prosecuted;[87] and (6) burglars and fences apprehended with marked

property in their possession are more likely to be convicted.[79]

Measures of effectiveness that can be used to evaluate Operation Identification's effect on burglary apprehensions and convictions include the rates of apprehension of suspected burglars with and without marked property in their possession[6] and the prosecution and conviction rates of suspected burglars apprehended with and without marked property in their possession. Data needed to perform an evaluation of the increased apprehension and conviction of property offenders due to Operation Identification, however, have been lacking to date. One reason is that most police department O-I projects, as indicated in the National Crime Prevention Institute's survey,[67] are still relatively new and have not yet had enough time to record a significant number of O-I apprehensions. Another reason is that many O-I projects, either by design or circumstance, are not collecting any arrest data. The third reason is the relatively small number of arrests that are made in burglary cases. Results of a study of crime in New York City, cited in Reppetto's report on residential crime,[18] suggest that less than five percent of all burglaries result in one or more arrests. In Denver,[102] only 1.6 percent of all burglaries occurred among O-I participants (even fewer thefts involved marked property). Results such as this suggest why any increase in apprehensions has been difficult to measure.

Nevertheless, examples of apprehensions due to Operation Identification have been reported in New Orleans[71] and Phoenix.[100c] Prosecutions as a result of O-I have been cited in Dallas[70]

and Ann Arbor, Michigan.[89]

Not all results to date have been positive, however. The usefulness of identification numbers in burglary investigations has been questioned by a California study[75] which found that, while 16.5 percent of 7,763 burglaries examined were cleared by arrest, only 11.3 percent of those involving identifiable property were cleared. The study suggested that one possible reason for these results was that investigators failed to use property identification information, including serial numbers, because of processing difficulties (e.g., complicated procedures required to trace ownership across state boundaries).

The need is apparent for additional evaluation of Operation Identification's effect on burglary apprehensions, prosecutions, and convictions before sound conclusions can be drawn.

Disposal of marked stolen property. The final component of O-I's deterrent effect is the increased difficulty in disposing of marked stolen property. Since the burglar usually wants to dispose of property he has stolen, the reaction of fences to marked property may have an impact on the burglar's decision about burglarizing an O-I location. The principal assumptions made in this regard are that fences also avoid identifiable property that is traceable to the scene of a burglary;[66, 71, 78] and that property identification consequently makes the sale of stolen property more difficult or, at least, lowers the "market" value of the item.[75, 86]

Evaluation of this process has also been limited to the

testimony of convicted burglars. In Illinois,[1] 45 percent of those interviewed indicated that marking decreased the value of stolen property and made its marketing more difficult in at least some cases. Eleven percent said they would steal only unmarked items. Reports from Denver,[97, 102] where there were 32,000 O-I participants as of January 1975, suggest that little marked property has been stolen in burglaries of Operation Identification participants (only 246 of 2,990 items marked by victimized participants were stolen).

C. Burglary Deterrence Problems

Two possible problems created by the burglary deterrence aspects of Operation Identification have been identified. Crime displacement from participants displaying decals to non-participants has been suggested by data provided by an evaluation of the O-I project in Denver.[94] There the burglary rate for participants is only 20 percent of the rate for non-participants. The city-wide burglary rate, however, has increased. These statistics indicate that burglars may, in fact, have been merely displaced rather than deterred.

Another possible problem is the displacement of the burglar from the theft of marked items to the theft of unmarked and unmarkable items such as money or clothing.[66] The extent of this problem is suggested by Scarr's study of burglary patterns[103] which reports, for example, that during 1969 in Washington, D.C., 29 percent of the property stolen was unmarkable (checks and documents, clothing, drugs, food, liquor, money and coins, and tobacco).

Since burglars want personal profit, increased fear of apprehension and anticipated difficulty in fencing stolen marked property will usually cause them to seek more suitable targets.[98] This, in turn, suggests a need for increased participation rates[2a, 66] - the greater the number of participants, the fewer the acceptable burglary targets. In fact, a recent study states that crime prevention by blocking potential burglary opportunities through programs such as Operation Identification is effective only when the number of non-participants "...approaches or is less than ..." the number of targets demanded by burglars.[98]

D. Evaluation Results

Various methods have been used for measuring the effectiveness of O-I projects in deterring burglary. St. Louis[2e] and Denver[97] have compared the burglary rate for participants to that for non-participants. St. Louis has also compared the burglary rate for participants after they joined Operation Identification to their burglary rate during a one-or two-year period before joining the program.[2a] City-wide burglary rates before and after the program began in St. Louis are also available.[2c] The study of O-I projects in Illinois[1] compared the rates in implementing communities of total burglary, burglary involving markable goods, daytime residential burglary, residential burglary involving markable goods, and daytime residential burglary involving markable goods to the corresponding rates in non-implementing communities. Denver records the value of marked property stolen and not stolen from participants.[97] In San Jose, a study was done to determine the proportion of O-I households which displayed project decals.[40] Subjective evaluations have also been done by interviewing project implementors, participants, non-participants, and convicted burglars.[1]

These evaluations report varied results. New Orleans reported monthly decreases in the burglary rate ranging from 2.3 to 33.8 percent during the 11 months after Operation Identification was introduced.[71] In Newton, Massachusetts a 41.4 percent decrease in the burglary rate was experienced in the first year after the initiation of an O-I project[86] and in Fairfax County, Virginia a 23 percent decrease was recorded in the first four months of project operation. One area of San Antonio experienced a reduction in burglaries from 86 in the year before O-I began to only four in the year after.[101b] In the O-I target area of Detroit, a 24 percent reduction in burglary was reported from 1972 to 1973.[48] In St. Louis, on the other hand, there was no effect on the rate of city-wide residential burglaries, although this might be explained by the low participation rate.[2a] In Illinois, no significant differences in burglary rates between implementing and non-implementing communities were detected.[1]

Results of comparisons between participant and non-participant burglary rates are generally favorable. Only San Jose reports no difference between the two groups.[113] Burglary rates from Monterey Park, California have been widely publicized.[78, 79, 80, 83] The likelihood of burglary was reduced by 78 percent

during a six-month period for participating households statewide in Minnesota.[62] In the Cincinnati area, amazingly only 10 of 17,000 participants (.058 percent), but 12,000 of 125,000 non-participants (9.6 percent) were burglarized in a one-year period;[90] in Denver 12.4 percent of non-participant locations were burglarized compared to 0.48 percent of the participant locations.[95] During 1973, Phoenix reported one burglary per 17 households (about a 6.0 percent rate). Among O-I participants, however, there was only one burglary per 229 households[100c] (about a .436 percent).

Several common problems with the evaluation of O-I's burglary deterrent effect have been noted. The question of data reliability was raised in the Illinois study.[1] As a means of determining the burglary rate among O-I participants,[2e] some projects depend on the investigating police officer to indicate on the burglary report the victim's participation in Operation Identification. The possibility that the rate of reported burglary might change among participants after they join O-I has been suggested.[2e] Comparison of participant burglary rates before and after joining the project is further complicated by the problem of "regression artifact" -- i.e., if victims of prior burglaries join O-I in large numbers, a decrease in the burglary rates would be expected even if Operation Identification had no effect at all.[2a, 110] Finally, the evaluations of O-I suffer from the same limitations experienced in evaluating most programs implemented in a "real-world" environment -- namely, the difficulty in controlling the many variables, and the difficulty in allocating the credit for measured results among several projects addressing the same problem.[97]

CHAPTER VI. THE EFFECT OF OPERATION IDENTIFICATION ON THE RECOVERY AND RETURN OF STOLEN PROPERTY

A. The Property Recovery System

An adequate model of the stolen property recovery process involves three separate entities. These are:

(1) the owner of personal property,

(2) the thief who steals the property, and

(3) the person who recovers the property and returns it (usually a police officer).

An important benefit claimed for the O-I program is that it provides substantial help in making the return of stolen property easier. The interaction of Operation Identification and the property recovery process can be described as follows:

(1) the owner marks or labels his valuable property;

(2) the thief steals some of the owner's property;

(3) the police recover the property either by

  (a) intercepting the offender before he can dispose of the property,
  (b) intercepting the fence before he can dispose of the property,
  (c) finding the property in a pawn shop, or
  (d) finding the property with its new "owner"; and

(4) the police return the property by tracing ownership through the identifying number or name on the property.

Despite this seemingly clear cut process, it produces several questions, which can be used to highlight what is and is not known about the actual intervention of Operation Identification into the property recovery process. These questions include:

(1) How completely, permanently, and easily can a homeowner mark his personal property? How can items such as money, silver, china, crystal, diamonds, other jewelry, clothing, and drugs be marked?[1]

(2) Does possession of marked property appreciably increase a burglar's risk of apprehension?

(3) What proportion of all stolen property is recovered, once disposed of by the burglar or fence?

(4) What identifying marks can the police trace? Can they trace property from outside their city, county, or state? What proportion of stolen marked property do they return?

(5) Is the rate of return for marked property higher than the rate of return for unmarked property?

A substantial number of O-I projects claim "the increased return of stolen property to the rightful owner" as a major benefit of the project. In Illinois' statewide program, this objective was promulgated as part of Illinois Law Enforcement Commission guidelines to the subgrantees.[1] In St. Louis, where the Operation Identification program was instituted as part of the High Impact Anti-Crime Program, the objective was included for measurement in evaluation plans since the grant presented it as a major goal.[2e] The New York City Police Department also included the objective in the grant application for its O-I project.[34] In a report for the Law Enforcement Assistance Administration on property numbering programs in the United States, two main objectives are identified; the first is property recovery and return, the second is burglary deterrence.[38] The citations above represent only projects with formally identified increased property recovery and return as an objective of Operation Identification; the number of projects that

publicize it in their project literature as an objective is far greater.

B. Use of Operation Identification for the Recovery and Return of Stolen Property

The documented results of Operation Identification projects in aiding property recovery and return have been limited almost exclusively to articles and stories in newspapers and magazines. Although most articles laud O-I's property recovery benefits without describing actual examples of its success, a few exceptions do exist. An Exchangite[80] article in June 1972 describes how a New Orleans citizen regained possession of her stolen property after police raided a fence. An article in the April 1972 National Observer tells how Saginaw, Michigan police examined a cache of stolen goods, found identifying marks on some of them, and located the rightful owner -- who was not even aware that the property was missing.[24] Some communities such as Buffalo, New York have attributed recovery of some stolen bikes to Operation Identification.[26]

Unfortunately, stories such as these represent the bulk of what is known about Operation Identification's effect on increasing the return of stolen property. Very few formal studies have been undertaken to monitor or evaluate this objective, but there is secondary evidence both to support and defeat many of the assumptions behind this component of the program. Some of this evidence is presented below.

C. The Police Use of O-I for Property Recovery and Return

The property recovery process described above has four

steps, beginning with property marking by the owner and ending with return of property to the owner by the police. The police role in the recovery process can be outlined as

(1) recovery of stolen property,

(2) finding of identifying marks,

(3) determination of the property owner from the identifying marks, and

(4) return of the property to the owner.

The identifying marks of course make it possible to find the owner of the property. But first, the identifying mark has to be compared with a list of marks, one of which may identify the rightful owner. While most projects can afford only a manual "retrieval" system, several have instituted their own computerized systems.[77, 78, 101b] At least one private company sells a registration service for marked property, via computer, which provides retrieval capability when a client's marked stolen property comes to the company's attention.[109] Many projects use the tracing capability of the National Crime Information Center, a nationwide system which maintains a computerized file of identifiable stolen property. Access to the system is provided for law enforcement agencies through on-line terminals.

Some problems have surfaced relative to the maintenance and use of these lists, whether manual or computerized. Many programs throughout the country recommend the Social Security number for property marking. Pending legislation,[17, 19, 38, 76] however, would make it illegal to use one's Social Security number

as an identifier for any purpose other than Social Security. Present federal regulations already prohibit the Social Security Administration from providing any information to other government or private agencies. As a result, recovered property marked with a Social Security number cannot be returned unless the property owner has registered his number with the local O-I project. Other problems relating to property marking include the necessity for maintaining up-to-date information about the identifier's owner and making sure that identifiers do not belong to more than one individual.[38, 93]

D. Property Recovery Problems

There are other problems with the use of O-I to recover and return stolen property. Some valuable properties cannot easily be labeled or marked. Jewelry, antiques, very small and expensive items, and property under warranty are examples. Problems also arise when persons do not have an identifying number of their own.[3, 34, 38] In New York City, the project recommends that the prospective participant with this difficulty use the number of a member of their family living within the same dwelling unit.[34] In St. Louis, residents without driver's license numbers often use the number of a relative or friend.[3] The use of another person's number adds an additional step in tracing and returning stolen marked property, and may make return of that property impossible. Some programs recommend placing the identifying mark in an inconspicuous place on the property.[93] How much this may affect the finder's recognition that the property is marked has not been tested. The wide variety of

identifiers recommended by various Operation Identification projects also presents serious problems in tracing owners from other localities. Lengthy identifiers are difficult, if not impossible, for persons to recall, should the need arise.[38] Furthermore, non-standard identifiers may not be recognizable to the finder of the property.[93]

E. Inherent Assumptions in the Use of O-I to Increase Property Recovery and Return

A basic assumption for this O-I objective is that project participants will actually mark their property, rather than merely posting decals or receiving literature about the program. Another assumption is that marked property aids in field investigations by burglary detectives. That is, does marked property influence whether it can be recovered through investigation? There is some evidence that the solutions to property crimes are insensitive to investigative work.[18, 75] A third assumption, although untested, has received some publicity:[66, 71, 75, 78] that the number of outlets (fences) is decreased for marked stolen property. The effect of this assumption on the disposition of stolen property by burglars is not known. Another assumption critical to successful property recovery and return is that law enforcement agencies can trace marked property to owners. Although the tracing mechanism can function, as proven through the few success stories publicized in the media, the extent to which rightful owners can be matched to their marked property remains untested.

F. Evaluation of the Property Recovery Objective

The few attempts to monitor the property recovery aspect of Operation Identification[2a, 6, 75, 95] have not yielded promising results. All of the evaluative studies have been hampered because so little marked property has been recovered. Thus, no firm conclusions can be drawn about the ability of Operation Identification to increase the return of stolen property. To date, no documented evidence apparently exists to verify that O-I projects have had a significant impact on the overall property recovery system. The question of whether the program can function more effectively if it is used on a much broader scale is unknown at this time.

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THE INSTITUTE FOR PUBLIC PROGRAM ANALYSIS

ASSESSMENT OF EFFECTIVENESS

PHASE I
EVALUATION OF OPERATION IDENTIFICATION

ABSTRACT

This report presents a judgmental assessment of Operation Identification. This assessment is based upon the past findings of other evaluators and project performance data collected by The Institute for Public Program Analysis during the Phase I Evaluation of Operation Identification for the National Institute of Law Enforcement and Criminal Justice. The report examines both the effectiveness and validity of the basic O-I activities, the underlying assumptions linking these activities, and the intermediate and ultimate objectives of the O-I concept.

The report describes a simple O-I project model, consisting of the following three components: recruitment, enrollment, and material distribution; burglary deterrence; and property recovery and return. Within each of these components, a framework of project activities and a chain of linking assumptions are identified and then used as the basis for the assessment.

Major findings include the following: (1) most O-I projects have been unable to enlist more than a minimal number of participants; (2) the cost of recruiting and enrolling O-I participants is much higher than expected; (3) O-I participants have significantly lower burglary rates; but O-I communities have not experienced reductions in city-wide burglary rates nor appreciable increases in the number of apprehended burglars; and (4) O-I markings have not increased the recovery and return of of stolen property.

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SUMMARY

The assessments presented in this report are based on a variety of information sources. Not surprisingly, the varying quality of past findings and the many differences found between the individual projects contacted during this study produced a wide spectrum of reported project results. For the most part, however, the assessments discussed below are based on results that have been reported by several researchers and projects operating in a variety of community and organizational environments. This approach was used in order to minimize the effect of the unusual or isolated project example, and also to identify and report only those results which appear most representative of and applicable to a wide range of project operations and environments.

In terms of the principal components of the O-I project model, the major findings are:

(1) O-I projects have been unable to recruit more than a minimal number of participants in their target areas (the telephone survey conducted for this study indicated that only 10 of 65 responding projects had enrolled more than 10 percent of their target area households);

(2) the recruitment cost per participant for an O-I project is quite high (median project cost is $4 per household) not counting donated promotional resources and manpower;

(3) O-I participants have significantly lower burglary rates after joining as compared to before joining (O-I projects in Seattle[41] and St. Louis[21] have documented burglary reductions of 32.8 percent and 24.9 percent respectively for O-I participants);

(4) cities with O-I projects have not experienced reductions in city-wide burglary rates (analysis of burglary rates for 255 cities with O-I projects in Illinois revealed no reductions when compared to 389 Illinois cities without O-I projects[18]);

(5) no evidence exists to indicate that O-I produces any increase in either the apprehension or conviction of burglars (not one of the 18 O-I projects visited for this study could document increases in either the apprehension or conviction of burglars);

(6) the presence of O-I markings does not significantly reduce the opportunities to dispose of stolen property (only 12 of 69 convicted burglars interviewed in Illinois indicated they would avoid stealing marked property[18]); and

(7) there is no indication that O-I markings appreciably increase either the recovery or return of stolen property (not one of the 18 projects visited could document increases in either property recovery or return due to O-I markings).

At first reading, results (4) through (7) appear incongruous with the fact that O-I participants do experience lower burglary rates. Explanations for these results include:

(1) only a small number of target area households are O-I participants and, as a result, little effect can be expected on city-wide burglary rates, burglar apprehensions and convictions, or the amount of property recovered and returned;

(2) some of the burglaries deterred from O-I households may be displaced to non-participating households in the target area; and

(3) the burglary rate reductions for O-I participants may be primarily due to non O-I causes (e.g., O-I participants tend to employ more target-hardening techniques than do non O-I participants).

Each of these explanations is discussed in greater detail in the main text of this report.

Recruitment, Enrollment, and Material Distribution. The overwhelming majority of O-I projects surveyed by telephone for

this study have recruited less than 10 percent of their target populations. The findings of several surveys[6, 18, 22] of both participants and non-participants substantiate that, while large numbers of people have been made aware of Operation Identification through the mass media, only a small percentage have been persuaded to join O-I. The results of several projects indicate increased participation levels with the use of such personalized recruitment methods as group presentations[18, 21] and door-to-door canvassing.[11, 14, 40] Such methods, however, have the disadvantage of being very time-consuming and costly in terms of the resources expended per enrollee. Recruitment efforts for existing O-I projects become increasingly difficult as a result of:

(1) the loss of media interest (a frequent source of free advertising);

(2) a decline in "outside" funding (most O-I projects with greater than 10 percent participation have received some outside funding support);

(3) a growing reluctance of non-participants to join (the "easier" participants are usually among the first to enroll); and,

(4) an increasing percentage of project resources diverted to recruiting additional participants and retaining current participants (marking new property and issuing new decals).

Despite the often-stated claim to the contrary, the total cost per household for O-I recruitment is often quite high. Participation and funding information obtained from several projects[10, 18, 27, 28] indicates considerable variation in the recruitment cost of each participant (from a low of $.78 per household in Grand Rapids, Michigan to a high of $17 per household in Seattle[41]). The statewide O-I program in Illinois

reported an average cost of $4.50 for each household enrolled during 1973; this information was based on 32 grants for O-I projects awarded to approximately 250 Illinois communities.[18] O-I projects reporting recruitment costs below a median figure of $4 per participant have generally benefited from free advertising donated by the local media and volunteer help contributed by business and civic organizations. Projects spending more than $4 per participant are usually using paid project staff members to make group presentations and for door-to-door canvassing.

A city of only 400,000 population, of which there were 31 reported in the 1970 census,[44] would have to spend more than $500,000 to achieve 100 percent participation. This is estimated using a recruitment cost of $4 per household and a size factor of three persons per household, which produces a per capita cost of $1.33 per person for O-I recruitment ($133,000 per 100,000 population). It can also be reasonably argued that as recruitment becomes more difficult, for the reasons already cited above, the average cost per enrollee will increase, thus driving total project costs even higher.

Burglary Deterrence. A significant reduction in burglary rates for O-I participants has been reported by several projects -- St. Louis,[21] Seattle,[41] Denver,[8] and Phoenix.[28] These statistically-documented results are based both on comparisons of before and after burglary rates for participants, and comparisons of burglary rates between participants and non-participants. A

24.9 percent reduction was reported for participants in St. Louis and a 32.8 percent reduction for participants in Seattle. Participant burglary rates were 6.7 times lower than non-participant rates in Denver and 18.7 times lower in Phoenix.

Despite these reductions, however, no substantive evidence was found that Operation Identification increases either the apprehension, prosecution, or conviction of burglars or that it hinders their ability to dispose of stolen property. A survey of convicted thieves in Illinois[18] revealed that burglars are not reluctant either to burglarize an O-I household or to steal marked property. Furthermore, project implementors and police officers interviewed during this study consistently believed that O-I had not significantly affected the burglars' ability to dispose of stolen property. The reasons they most frequently cited were:

(1) stolen property can be quickly transported to other jurisdictions;

(2) O-I markings can be easily altered; and

(3) the public is willing to buy anything if the price is right.

These results immediately raise the question: if burglars are not apprehended or convicted more frequently because of O-I and if the disposal of stolen property is not made more difficult, why are burglars deterred from O-I households? One explanation is that "successful" O-I projects are often part of larger crime prevention programs and, as a result, property marking is only one of many security precautions which O-I

participants are encouraged to use. Hence, it is possible that O-I's apparent burglary reduction benefit may actually be due to one or more other security measures instead of (or in addition to) the deterrent effects of marked property.

Even if attributable to O-I, however, the burglary deterrent benefit detected for O-I participants has not appeared as a benefit for the entire community; none of the four cities cited above reported any decline in city-wide burglary rates despite the significant reductions in rates among O-I project participants. Critics of O-I state that Operation Identification actually prevents very few burglaries; and that, in fact, any crime deterrence claimed as a result of O-I participation is merely crime displaced to non-participants in the target area. Measurements of displacement effects due to O-I have produced mixed results. An evaluation of the Seattle[41] O-I project failed to detect any significant level of displacement either to non-participants or to other types of crime. Studies in Denver[5] and St. Louis,[23] however, suggest that some geographic displacement may have occurred in each area after the initiation of the O-I project. All three studies, however, were conducted in communities in which the O-I project was only one element of a much larger anti-crime program being implemented at the same time; as a result, displacement effects could not easily be attributed to the O-I project alone.

Proponents of O-I claim, in defense of the apparent lack of a community-wide benefit, that such a benefit does in fact

exist and would appear if larger numbers of participants were enrolled; and further, that burglary rates for the entire city, although still rising, are not as high as they would have been if the O-I project had not existed. Verification of this hypothesis is very difficult, since expected burglary rates can only be estimated by using trend predictions calculated with reported crime statistics. This task is made doubly difficult by the dubious quality of most reported crime statistics and the multitude of social and economic factors that influence the crime rate in any given community.

The future potential of O-I as a burglary deterrent program benefiting the entire community raises the central question of what percent of the target population must be enrolled before a community-wide burglary reduction will be observed. No specific evidence is available to date to answer this question.

Property Recovery and Return. The property recovery effects of Operation Identification are almost non-existent. Despite the fact that almost every O-I project can usually cite one or two headline cases of stolen property recovered and returned to its owner due to O-I markings, no evaluative results from an O-I project support the claim that Operation Identification produces a significant increase in either the rate of recovery by police or return to owners of stolen property. Projects in Seattle,[41] Denver,[5] and New York City have reported minimal amounts of recovered marked property although considerable numbers of participants have been burglarized in each

city.

Among the factors contributing to this complete lack of success are:

(1) a high percentage of commonly stolen items are not easily markable (estimates range from 40 to 60 percent);[29, 38]

(2) most police departments, burdened with manpower and funding limitations, cannot adequately process or document the volume of recovered property they handle today;

(3) few police property recovery units in cities with O-I projects have altered or improved their tracing procedures to insure the efficient return of recovered marked property to owners; and

(4) the absence of an adequate identifier, unique and permanent for each person in the United States, seriously hinders the effective tracing of property owners.

CHAPTER I. INTRODUCTION

A. Purpose and Outline of the Report

The purpose of this report is to present a judgmental assessment of the failure or success of Operation Identification (often times referred to as O-I throughout this report). This assessment is based upon both the past findings of other evaluators and project performance data collected during this study. This information is used to examine both the effectiveness and validity of the basic O-I project activities, the underlying assumptions linking those activities, and the intermediate and ultimate objectives of the O-I concept.

Each assessment presented in this report includes some or all of the following elements:

(1) a discussion of the confidence that can be placed in the collected data in terms of its validity, reliability, and accuracy;

(2) identification of specific knowledge gaps that exist in the collected data, the importance of those gaps, and possible reasons for their existence;

(3) determination of the range of project performances in terms of effectiveness and efficiency;

(4) identification of key factors that have contributed to project success or failure; and,

(5) presentation of the comparative costs of alternative project methods.

As a basis for the assessments of O-I project assumptions and objectives, several frameworks of project activities or interventions are presented. These frameworks, based on a large sample of O-I projects, are used to describe the chain of

assumptions which link the expenditure of funds to project activities, the project activities to intermediate effects and, finally, the intermediate effects to the ultimate impact of O-I upon the reduction of burglary. These frameworks are also used to identify feasible measurement points, important data elements to be collected, and practical methods of data collection.

This report is divided into six chapters. The remainder of this chapter defines the kinds of property marking programs assessed, describes a simple O-I project model used to organize the assessment results, identifies the information sources used, and summarizes the major assessment findings. Chapter II presents an overview assessment of Operation Identification in terms of the costs and resources expended for O-I projects, the overall benefits of the concept to the community, and the future of O-I programs.

Chapters III, IV, and V each present an assessment of one of the major components or objectives of Operation Identification (i.e., recruitment, enrollment, and material distribution; burglary deterrence; and property recovery and return). Within each chapter, a framework of project activities or interventions, representative of O-I projects, is presented and used to identify a chain of linking assumptions for this component of O-I. These assumptions or effects are then restated as questions to be assessed.

Chapter VI discusses two additional features of Operation Identification that are frequently identified as project benefits: improved police-community relations, and increased public knowledge and use of other security precautions.

B. What is Operation Identification?

During the past decade, one of the more significant changes within the law enforcement community has been the widespread growth of crime prevention programs. Designed to provide citizens with both the knowledge and, whenever possible, the equipment to reduce their chances of being victimized, crime prevention projects now exist in law enforcement agencies throughout the United States. Although these programs vary considerably in content and scope from one jurisdiction to another, almost all inform citizens about specific steps that can be taken to reduce the risk of being burglarized. Property marking projects are one of the most commonly utilized programs.

These projects are collectively identified as Operation Identification. They seek to deter burglars by encouraging citizens to mark their valuable property with a unique, traceable number, sign, or name which can be used to identify the item and establish ownership if it is stolen. The O-I projects discussed in this paper are limited to property marking programs which possess the following characteristics:

- citizens are encouraged to mark each movable piece of valuable property they own;
- a personal identifier, unique to each citizen, is used; and
- burglary deterrence is a goal of the project.

C. A Simple O-I Project Model

The assessment results presented in this paper are organized

according to a model of O-I projects that consists of three components: recruitment, enrollment, and material distribution; burglary deterrence; and property recovery and return. The first component consists of all project efforts and includes all activities planned and implemented by the project itself. This "effort" component is discussed in Chapter III. The last two components, discussed in chapters IV and V, respectively, represent the two principal objectives or effects of Operation Identification: to protect citizens enrolled into the project so that their risk of being burglarized decreases; and to increase the likelihood that their property, if stolen, is returned. A brief discussion of each component follows.

1. Recruitment, Enrollment, and Material Distribution. This component includes all of the activities and materials used to inform the public and potential burglars about O-I. These efforts are designed to educate each citizen about the risks of being burglarized, the existence of the local O-I project, the usefulness of O-I in reducing the risks of burglary, and the steps necessary to join the project. Efforts to recruit participants range from broad appeals in the mass media to individual contacts through group presentations and door-to-door canvassing.

This component also includes all project activities and materials utilized in enrolling each citizen in the O-I project. Enrollment elements include the kinds of instructions given to each participant, the types of identifiers recommended, and the extent and completeness of project records. Distribution elements include the types of marking tools and decals used, and the various kinds of centers used for distributing project equipment and materials.

2. Burglary Deterrence. This is the major objective of all O-I projects presented in this paper. The specific interventions which O-I theoretically can make into the burglary process are presented in Chapter IV. Fundamental to each intervention is the existence of a permanent, unique identifier which can be used to link recovered property to a specific crime or criminal. The deterrent effects of O-I rely upon the burglar's assumed belief that O-I marked property increases his risk of apprehension and lowers his economic gain.

3. Property Recovery and Return. This O-I objective also depends upon the existence of a unique, personal identifier but here the link is between the stolen property and the owner. As with burglary deterrence, the O-I concept appears to have several logical avenues of intervention into the property recovery process. The recovery by police of O-I marked property is increased because of the improved ability to identify the property as stolen or to link the property to a specific crime; and property return is enhanced because of the improved tracing mechanisms which link property markings to specific owners.

4. Other benefits. Although not identified as a major component of the O-I model, two additional benefits of Operation Identification, frequently cited by O-I implementors, are (1) improved police-community relations, and (2) increased public awareness and use of other security precautions. Im-

proved PCR occurs, it is claimed, because citizens have an increased opportunity to see and work with the police on a program specifically designed to help lawabiding citizens protect themselves against crime. Operation Identification is also used by many crime prevention units to introduce citizens to the idea of and need for greater home security. The basic simplicity of the O-I concept is easily understood and, as such, serves as an excellent vehicle for motivating citizens to use both property marking and other crime prevention techniques.

D. Information Sources Used for the Assessment of Operation Identification

All of the pertinent information accumulated during this study has been summarized in three earlier study products. These are:

(1) "Operation Identification: A Review of General Knowledge and Past Findings" (hereafter referred to as the Review Paper);

(2) "A Telephone Survey of Operation Identification Projects: Methodology and Results" (hereafter referred to as the Telephone Survey); and

(3) "A Field Survey of Operation Identification Projects: Methodology and Results" (hereafter referred to as the Field Survey).

Review Paper. This product is a review of current general knowledge and past findings about Operation Identification. Two levels of information are presented. First, the review of general knowledge focuses on the context and background, general goals, and alternative approaches to O-I. This information was collected from background material, past research, historical development, and expert opinion about the role and usefulness of O-I as a burglary prevention concept.

The second level of information centers on past findings of other researchers about the implementation and evaluation of specific O-I projects. This information was collected from a variety of sources, including newspaper stories; magazine articles; grant applications, progress reports, evaluation surveys, and promotional materials, all from individual O-I projects; state planning agency reports; evaluation studies; expert opinions; and information supplied by the manufacturers of engraving and labeling equipment used by O-I projects.

Telephone Survey. To supplement the general knowledge and past findings reported in the Review Paper, a telephone survey of 99 ongoing O-I projects was conducted during December 1974 and January 1975. Two groups of projects were surveyed. One was a stratified sample of 78 representative projects selected on the basis of geographic location, population, and the degree of urbanization of the target area. The second group consisted of 21 special projects, each selected because of an unusual project feature (e.g., projects in very large urban areas and projects for which evaluations had been completed).

The Telephone Survey consisted of more than 170 questions and subquestions about the history, organization, levels and sources of funding, objectives, operations, evaluation efforts and results, degrees of success, and problems of the O-I projects. All survey responses for each group of projects were keypunched and machine tabulated. With the survey data in machine processable form, over 240 pairs of variables were

cross-tabulated with each other in an effort to identify strong associations between major project variables.

Field Survey. To secure more detailed information about the project descriptions developed from the review of past findings and the Telephone Survey, on-site visits to 18 of the O-I projects contacted in the Telephone Survey were made during February and March 1975. These visits were designed to validate the results of the Telephone Survey, obtain more precise information about the operations of particular O-I projects, and more accurately identify the similarities and differences between O-I projects.

Selection of the projects to be visited was based both on interviewee responses to specific questions in the Telephone Survey and the subjective opinion of each interviewer about the potential usefulness of a project visit. Specific selection criteria included the existence of a project evaluation, the quality of the project data base, the total number of participants enrolled in the project, the percent of the total target area enrolled, and the degree of success claimed by project personnel.

During the 18 field visits, 88 persons were interviewed. They included police officers and civilians working on O-I projects, burglary detectives, police property officers, project evaluators, and prosecuting attorneys. In addition to conducting interviews during normal business hours at O-I project headquarters, the field site interviewers also attended group presentations promoting O-I, accompanied door-to-door canvassers,

and visited several police property rooms.

E. Major Assessment Findings

As indicated above, the assessments presented in this paper are based on a variety of information sources. Not surprisingly, the varying quality of past findings and the many differences found between the individual projects contacted during this study produced a wide spectrum of reported project results. For the most part, however, the assessments discussed below are based on results that have been reported by several researchers and projects operating in a variety of community and organizational environments. This approach was used in order to minimize the effect of the unusual or isolated project example, and also to identify and report only those results which appear most representative of and applicable to a wide range of project operations and environments.

In terms of the principal components of the Operation Identification (O-I) project model, the major findings are:

(1) O-I projects have been unable to recruit more than a minimal number of participants in their target areas (the telephone survey conducted for this study indicated that only 10 of 65 responding projects had enrolled more than 10 percent of their target area households);

(2) the recruitment cost per participant for an O-I project is quite high (median project cost is $4 per household) not counting donated promotional resources and manpower;

(3) O-I participants have significantly lower burglary rates after joining as compared to before joining (O-I projects in Seattle[41] and St. Louis[21] have documented burglary reductions of 32.8 percent and 24.9 percent respectively for O-I participants);

(4) cities with O-I projects have not experienced reductions in city-wide burglary rates (analysis of burglary rates for 255 cities with O-I projects in Illinois revealed no reductions when compared to 389 Illinois cities without O-I projects[18]);

(5) no evidence exists to indicate that O-I produces any increase in either the apprehension or conviction of burglars (not one of the 18 O-I projects visited for this study could document increases in either the apprehension or conviction of burglars);

(6) the presence of O-I markings does not significantly reduce the opportunities to dispose of stolen property (only 12 of 69 convicted burglars interviewed in Illinois indicated they would avoid stealing marked property[18]); and

(7) there is no indication that O-I markings appreciably increase either the recovery or return of stolen property (not one of the 18 projects visited could document increases in either property recovery or return due to O-I markings).

At first reading, results (4) through (7) appear incongruous with the fact that O-I participants do experience lower burglary rates. Explanations for these results include:

(1) only a small number of target area households are O-I participants and, as a result, little effect can be expected on city-wide burglary rates, burglar apprehensions and convictions, or the amount of property recovered and returned;

(2) some of the burglaries deterred from O-I households may be displaced to non-participating households in the target area; and

(3) the burglary rate reductions for O-I participants may be primarily due to non O-I causes (e.g., O-I participants tend to employ more target-hardening techniques than do non O-I participants).

Each of these explanations is discussed in greater detail in chapters III through VI of this report.

CHAPTER II. AN OVERVIEW ASSESSMENT OF OPERATION IDENTIFICATION

A. Introduction

The concept of Operation Identification has an initial simplicity that certainly accounts for part of its attractiveness as a crime prevention method. The idea of marking or labeling one's own property to deter burglars and to improve the return of property that is stolen is a cause and effect relationship easily explained and readily understood. At least part of the explanation for the rapid proliferation of O-I programs throughout the United States in the last 10 years can be attributed to this basic simplicity.

Unfortunately, in the case of Operation Identification, this rapid expansion has also been characterized by the attitude that the attractiveness of the O-I concept insures its effectiveness. This has meant that project implementors and criminal justice planners frequently have passed over the weaknesses of the underlying assumptions of the O-I concept and have ignored the less than perfect environment in which O-I projects must operate. The examinations of both O-I assumptions and project results in this report indicate that the O-I concept has faltered, to date, primarily because the environments in which O-I projects have been implemented do not satisfy the basic assumptions upon which the concept is based.

As mentioned earlier, the final three chapters of this paper present individual assessments about participant recruit-

ment and enrollment, burglary deterrence, and property recovery and return. This chapter presents an overview assessment of O-I, drawing upon the results of those individual assessments. The remainder of this chapter is divided into two sections. The first summarizes the assessment results in terms of what O-I projects have accomplished to date. The second section discusses the future possibilities of Operation Identification.

B. Operation Identification Today

This section presents a picture of O-I projects as they exist and operate today. The efforts and effects of representative O-I projects are examined in terms of the benefits and costs to the entire community.

Recruitment, Enrollment, and Material Distribution. The basic failing of most O-I projects to date is that they have been unable to recruit more than a token number of participants. Although the O-I projects contacted for the Telephone Survey had existed for an average of two years, less than 20 percent of them had recruited more than 10 percent of their target populations. A similar result was also found in a 1974 evaluation of the statewide O-I program in Illinois.[18] Researchers the examined over 250 O-I communities and found only a few that had enrolled more than two or three percent of their target populations.

The small numbers of O-I participants have not been the result of public ignorance about O-I projects. Surveys of non-participants in Illinois,[18] St. Louis,[22] and Denver,[6] document a high level of public awareness about the existence and purpose

of the local O-I project. This gap, however, between the levels of public awareness and O-I participation appears to reflect a public apathy all too characteristic of American society. In 1972, for example, only 55 percent of the voting-age population in the United States participated in the presidential election.[44] Further, despite massive public education efforts by the government and even legislated restrictions on tobacco advertising, per capita tobacco consumption in this country has not changed significantly in the last 15 years.[44] Hence, despite the fact that public opinion polls continue to verify that most Americans consider crime to be a serious problem and that O-I projects have succeeded in educating most citizens about the existence of Operation Identification, the overwhelming majority of O-I projects have not been able to recruit more than a small percentage of their target populations.

The few O-I projects that have reported some recruitment success (i.e., enrolling more than 10 percent of their target populations) usually possess some or all of the following characteristics (see Table 3-1):

(1) the target area is relatively small, possessing less than 10,000 households;

(2) the O-I project has used personalized recruitment methods such as group presentations and door-to-door canvassing rather than merely media publicity; and

(3) the project has received considerable amounts of outside funding, services, and material from cooperating government, civic, and business organizations.

The first characteristic is related to the ability of O-I projects in small communities with strong neighborhood

structures to inform and recruit large numbers of participants with informal methods which rely on word of mouth contact between individuals. Personal contact with a friend or neighbor who has already joined the project appears to play a particularly important role in this type of recruitment. The success of this method is not surprising, however, when it is noted that political campaigners and charitable organizations routinely use neighbors and friends to promote candidates and collect donations.

In many urban and suburban environments today, however, informal word of mouth communication is not reliable because of the decline of the neighborhood structures. Many projects also report that impersonal public education techniques using the mass media, area-wide mailings, and leafleting have also proven ineffective in motivating people to join O-I. As a result, more and more O-I projects have begun to use group presentations and door-to-door canvassing in order to provide more personal contact with each new participant. Projects in Seattle,[41] Denver,[5] and Detroit[12] report considerable success with these personalized methods.

The final characteristic is that most of the O-I projects that have succeeded in recruiting more than 10 percent of their target population have received, at no cost to the local government, considerable amounts of resources, services and materials from other public and private agencies. Many projects, for example, receive all or part of their direct financial support from either federal or state agencies, as well as free advertising

from the media, donated materials from business groups, and volunteer help from civic organizations.

Although complete budgetary figures are almost impossible to obtain since they are not kept by many projects, cost data from St. Louis,[20] Denver,[10] Seattle,[40] and Illinois[18] indicate that a representative cost for O-I recruitment is approximately $4 per participant. The actual cost for an individual project depends on the type of recruitment strategy used and the amounts of donated services that can be obtained. As an example, the O-I project in Grand Rapids, Michigan has relied almost exclusively on a public education approach to recruitment. With advertising time provided at no cost by a local television station and with materials provided by local insurance agents, recruitment costs directly chargeable to the project have been less than $1.00 per participant. In contrast, the Seattle O-I project, supported entirely with a grant from the State of Washington, has relied almost exclusively on group presentations and door-to-door canvassing for O-I recruitment; the unit cost for this project has been $17 per participant.

A city of only 400,000 population, of which there were 31 reported in the 1970 census,[44] would have to spend more than $500,000 to achieve 100 percent participation. This is estimated using a recruitment cost of $4 per household and a size factor of three persons per household, which produces a per capita cost of $1.33 per person for O-I recruitment ($133,000 per 100,000 population). It can also be reasonably argued that as recruit-

ment becomes more difficult, for the reasons to be cited below, the average cost per enrollee will increase, thus driving total project costs even higher.

In summary, the best evidence to date indicates that the use of low cost (less than $4 per participant) public education methods for recruitment has not succeeded in producing more than a token number of O-I participants. In contrast, personalized recruiting methods do appear to be more effective in producing new participants, but are usually more expensive to the project.

Burglary Deterrence. Evaluation studies in St. Louis,[21] Denver,[9] Seattle,[41] and Phoenix[28] report some burglary deterrence benefits for O-I participants. Based on comparisons of before and after burglary rates for participants, the St. Louis project reported a 24.9 percent reduction and the Seattle project a 32.8 percent reduction.

The reasons for this deterrent effect are not obvious, however, for despite these lower burglary rates, there is no substantive evidence that Operation Identification increases either the apprehension, prosecution, or conviction of burglars or that it hinders the disposal of stolen property.

These results immediately raise the question: if burglars are not apprehended or convicted more frequently because of O-I and if the disposal of stolen property is not made more difficult, why are burglars deterred from O-I households? One explanation is that "successful" O-I projects are often part of larger crime prevention programs and, as a result, property

marking is only one of many security precautions which O-I participants are encouraged to use. Hence, it is possible that O-I's apparent burglary reduction benefit may actually be due to one or more other security measures instead of (or in addition to) the deterrent effects of marked property.

Even if attributable to O-I, however, the burglary reductions found for participants in the four cities cited above have not produced city-wide reductions in the total number of burglaries. This result is significant since it indicates that although participants have benefited from O-I, the entire community has not. The defenders of Operation Identification argue that the absence of a decline in the total number of burglaries is not significant since O-I has prevented burglaries that might otherwise have been committed. The failure to see a city-wide decline, it is further suggested, merely reflects the very low O-I participation levels today and, as more participants are recruited, the city-wide effects of O-I will become apparent.

The detractors of Operation Identification, however, argue that O-I actually prevents very few burglaries; instead, the burglars who avoid O-I households merely select non O-I homes for their crimes. As a result, no city-wide reduction in reported burglary rates has occurred because most of the O-I "prevented" crimes have, in fact, been displaced to other targets. Efforts to measure the existence and extent of various kinds of crime displacement have been made in St. Louis,[23] Seattle,[37] and Denver,[5] but no conclusive evidence exists to

satisfactorily resolve this question.

Property Recovery and Return. The evidence accumulated for this study indicates that the property recovery and return benefits envisioned in the concept of O-I have been completely lost in the realities of project implementation. This does not appear to be due exclusively to the small amount of O-I property stolen to date. Not one O-I project contacted for this study was able to substantiate the claim that O-I marked property was more difficult to dispose of by burglars, was more likely to be recovered by the police, or was more likely to be returned to its owners if stolen. The major reasons contributing to O-I's failure to improve either the recovery or return of stolen property are:

(1) the absence of an adequate identifier, unique and permanent for each person in the United States, seriously hinders the effective tracing of property owners;

(2) many commonly stolen items are not easily marked (e.g., money, silver, furs);

(3) O-I markings are easily altered;

(4) stolen property can be quickly transported to other jurisdictions where O-I marks are not traceable;

(5) most police departments, burdened with manpower and funding limitations, cannot adequately process or document the volume of recovered property they handle today; and

(6) no acceptable procedure for using the NCIC computer files to trace O-I marked property has been developed.

Although the success of Operation Identification in the area of property recovery and return appears to be nonexistent for a multitude of reasons, two problems appear to be most

crucial to this failure. The first, as cited above, is the fact that no uniform type of personal identifier available to each person and applicable throughout the United States now exists. As indicated in Martensen's and Greene's[17] study of property numbering systems, the ideal personal identifier should be universally available, unique, and permanent for each participant, and easily traceable by all law enforcement agencies throughout the country. Only the Social Security number, used by many O-I projects, even approaches these requirements today. Its fatal handicap, however, is the fact that federal regulations prohibit the Social Security Administration from giving information to any other government agency; as a result, owner traceability is only feasible for those jurisdictions which have the number on file.

Most O-I projects recommend the use of the participant's driver's license number (DLN) frequently prefixed with an abbreviation for the state. A significant advantage of this identifier is the fact that most police departments today can request a computer search (usually requiring only a few seconds) of driver's license numbers issued in their state. Several disadvantages, however, also are apparent with the use of DLN's. These are:

(1) not every participant has or can obtain a DLN;

(2) many states change the DLN on a regular basis (30 states change the DLN annually[17]); and

(3) the length of some DLN's make engraving a difficult task (some states have a 16-digit DLN).

The second major problem which is critical to the property recovery effects of Operation Identification is the police property system itself. An important element of the Field Surveys conducted for this study was examination of the property disposition systems of several police agencies. In general, police property systems appear to be a seriously neglected support service of most police departments. Frequently undermanned, sometimes located in poor facilities, and burdened with a recording system that generates volumes of paper, present police property systems barely manage to supervise and document the volume of property received today. With most of their limited resources devoted to the maintenance and processing of property and paperwork, property officers, as observed in the Field Survey, were unable to spend more than a token amount of time examining property for identifying marks or using these marks to trace property owners.

These limitations are even more pronounced in those O-I projects where O-I numbers (whether registered with the project or not) are not readily available to the property recovery unit of the local police department.

In view of the lack of any acceptable identifier, and given the poor state of police property systems, it is not surprising that O-I projects throughout the country have experienced little or no success in improving either the recovery or return of stolen property.

Other O-I benefits. In addition to the burglary deterrence

and property recovery goals, some O-I implementors claim other benefits have been realized from the O-I projects. The two most commonly identified are that:

(1) O-I, implemented and supported by the police, serves a useful police-community relations (PCR) function by involving the police and the public in a cooperative effort to fight crime; and

(2) O-I information often serves as a useful vehicle for introducing other crime prevention concepts to citizens who initially may have been interested only in Operation Identification, and for motivating them to join such programs or to adopt preventive techniques.

The PCR value of O-I is difficult to assess. Surveys conducted in St. Louis[22] and Illinois[18] indicate that participants generally have a more favorable impression of the police than do non-participants, and that O-I has some positive effect on participant attitudes toward the police. The difficulty here is to determine whether participants have a better impression of the police because they join an O-I project, or whether participants are merely the same people who support the police by participating in other PCR functions. No O-I project to date has attempted a thorough evaluation of this question however.

All of the crime prevention units visited during the Field Survey and 50 percent of the projects contacted for the Telephone Survey included Operation Identification as part of a larger crime prevention program; several had conducted extensive crime prevention publicity campaigns featuring O-I as a major element. No evaluation of the effectiveness of O-I merely as

a device to inform citizens about crime prevention has been attempted.

C. The Future of Operation Identification

The results presented in the preceding section indicate that to date the implementation of Operation Identification has not yet provided community-wide benefits to any significant degree, either in terms of the number of burglaries reduced or in the amount of property recovered or returned. Using these results as a starting point, this section examines the future potential of Operation Identification. The specific questions to be addressed are whether the present implementation problems can be overcome and what new types of problems will arise as and if greater numbers of participants are enrolled. Both questions are discussed within the context of determining whether the net future benefits of O-I for the entire community are likely to exceed the total costs expended for the project.

Recruitment, Enrollment, and Material Distribution. The future recruitment potential for Operation Identification is not encouraging. The 78 representative projects contacted for the Telephone Survey had recruited an average of only five percent of their target populations in the first two years of operation. Assuming the same rate of participant enrollment continues, these results indicate that the average O-I project will need at least 20 years merely to reach the 50 percent participation level. Whether this level will provide any community-wide benefits is discussed below.

Even this discouraging forecast may be optimistic since

several additional problems are likely to hinder future O-I recruitment efforts. One difficulty is that as more O-I participants are enrolled, the recruitment effort required for each new participant will increase. This phenomenon is likely to occur because of the self-selection process of O-I enrollment. The earliest participants in any voluntary project are usually the easiest to recruit. As more and more persons join the project, however, the remaining group of non-participants represents those citizens who are most resistant to any recruitment efforts; and, as a result, their recruitment, if possible at all, becomes increasingly difficult and expensive. No "bandwagon" effect was reported by O-I implementors in the cities contacted.

At the same time that the recruitment cost for each participant may be increasing, O-I projects may also begin to lose some of their funding support. Although over 85 percent of the projects contacted for the Telephone Survey were using police department personnel and facilities, fewer than 40 percent of the projects were receiving funding support from either the police department or any other local government agency. Other sources of support most frequently identified in the Telephone Survey were the Law Enforcement Assistance Administration (26.9 percent), state planning agency (14.1 percent), business organizations (17.9 percent), and civic groups (10.3 percent). Over 78 percent of the projects indicated that all or some of the project materials were provided by business and civic organiza-

tions. Of the 14 projects in the Telephone Survey that reported participation levels above 10 percent, all but two indicated some level of outside support; five projects were receiving LEAA monies and nine were receiving some resources from either business or civic groups (see Table 3-1).

The ability of O-I projects to rely upon these "extraordinary" sources of funding in the future is questionable. Grants from LEAA and state planning agencies are usually designed to provide only short term support in order to help local communities initiate new projects; if the projects prove successful, continued support must be assumed by the community itself. Resources provided by local business and civic organizations may become even more questionable. The longer an O-I project is in existence, the more likely the possibility that such organizations will look for new projects which need support. As an example, several projects contacted during this study indicated that as the newness of the O-I concept in the community wore off, it became increasingly difficult to obtain free promotional time from local television and radio stations, and free advertising space in the local newspapers.

It should be noted that many of the projects contacted for the Phase I evaluation were receiving outside support. It is hypothesized that subsequent termination of that support will also contribute to the "diminishing returns" effect in the amount of effort required to recruit new participants.

Another cost burden which O-I projects will encounter as more and more participants are enrolled is the amount of effort

that must be devoted to maintaining project participation. This maintenance is necessary because, from the moment a person joins an O-I project by marking his property and posting decals, a process of deterioration in his participation sets in: new property is purchased, marked property is sold or given away, a new identifying number is issued, a new residence is obtained, and old decals fade or peel away. If this rate of deterioration among project participants becomes greater than the rate of enrollment of new participants, the effective coverage for the community decreases. Although the opportunity for such a reversal in total coverage becomes increasingly probable as the number of participants to be maintained increases, without exception, participant maintenance was not cited as an important project activity by any of the projects visited for this study.

In the absence of large amounts of funding and participation incentives, the outlook for future O-I recruitment is not very good. In response to the question in the Field Survey about what level of O-I participation would constitute "successful recruitment," a surprising number of O-I project staff members indicated success levels below 50 percent (some as low as 30 percent) of the target population. It seems questionable whether such O-I participation levels can ever provide community-wide burglary reduction benefits, or, should displacement effects be freely operating, result in displacement of burglary from the target community.

Burglary Deterrence. As indicated above, the best evidence to date suggests that although burglars are deterred from O-I households, the reduced burglary rates for project participants have not produced city-wide burglary reductions. These findings are not definitive, however, since they are based on data obtained primarily from O-I projects which were either part of larger crime prevention programs, or which had recruited less than 20 percent of their target populations. The critical questions then for any future evaluation of O-I's burglary deterrent effect are (1) whether burglary reductions for participants can be expected if O-I projects are initiated independent of other crime prevention activities, and (2) whether city-wide burglary reductions can be expected if higher participation levels are achieved.

Moreover, so long as the possibility of burglary displacement exists, either to other targets or other types of crime, the future assessment of Operation Identification as a burglary deterrent will remain very much in doubt. The displacement theory essentially implies that no community-wide burglary reduction benefits will be obtained as long as the "supply" of non-participating households is sufficient to meet the needs of active burglars. Using this basic idea, Riccio[31] has developed a crime prevention model which can be used to estimate the total number of O-I households that must exist in a community before the total number of burglaries in that community will be reduced. Use of this model on the O-I communities contacted for this study indicates that no city-wide

crime prevention benefits will be realized until more than 90 percent of the target population is enrolled. This is a participation level which even most O-I project implementors do not believe they can achieve. (See Table 4-4.) Further, total recruitment costs to achieve 90 percent O-I participation levels are very large even for small communities. Using the per capita (i.e., per city resident) recruitment cost of $1.33 derived above (i.e., to achieve 100 percent participation), the per capita cost to recruit 90 percent of the households in the target area is approximately $1.20 (to recruit 75 percent of the households requires $1 per person). Few projects to date have spent more than a few cents for each person in their target area.

Finally, the continuing success of O-I's burglary deterrence, even among participants, is based on the effectiveness of O-I when a participant is burglarized. So long as burglars believe that O-I markings lower the value of stolen property, make the disposition of such property more difficult, and increase the chances of being apprehended, they will avoid O-I households; the failure of O-I to make those beliefs reality will eventually undermine all of the deterrent effect. Perhaps the most discouraging result to date is the fact that no project, study, or evaluation has been able to document O-I's effectiveness in any of these areas.

Property Recovery and Return. The future of O-I for increasing either the rate of recovery or return of stolen property is dependent on improvements in the two problem areas

identified: the over-burdened police property system; and the absence of a personal identifier, available, unique, and permanent for each person, and easily traceable by any law enforcement agency in the United States.

The kinds of improvements required for police property systems were clearly defined by the National Advisory Commission on Criminal Justice Standards and Goals. In the area of police support services, the Commission provided a basic set of organizational, personnel, and operating procedures for property disposition by law enforcement agencies (see Standard 12.3, Police Report, pp. 309-312). For the most part, these recommendations are directed at the establishment of a manageable property system that is properly staffed and supervised, and able to adequately process and document recovered property. It is reasonable to assume that complete implementation of these improvements by the majority of law enforcement agencies will require many years.

The emergence of an entirely suitable personal identifier, useful for tracing property owners from any jurisdiction in the country, does not appear very likely. The expansion of public awareness about the need to protect personal liberties and public backlash against government files on individuals, regardless of how innocuous, make this possibility remote.

Without improvement in both of these areas, there is little reason to be hopeful that any property recovery benefits will be realized from O-I in the near future.

Other O-I benefits. The most positive use of O-I to date has been to "sell" crime prevention to the public. The simplicity of the concept is easily explained and understood, and currently is used by many crime prevention units to introduce more sophisticated crime prevention concepts. In fact, the suggestion has been made that burglary reductions for O-I participants may not be due directly to O-I at all, but rather to the fact that O-I participants also tend to use other crime prevention techniques (e.g., better locks and lighting).

Closely associated with the use of O-I to promote crime prevention is its value for police-community relations (PCR). PCR is not frequently identified as a specific project objective, yet 8 of the 18 projects visited for the Field Survey were part of a PCR unit.

If the burglary deterrence and property recovery goals of O-I are ever achieved, the public information and PCR value of O-I are extra benefits that will serve to further enhance the project. If, on the other hand, O-I does not achieve its two primary objectives, then the public education and PCR benefits, although useful, may not justify its cost to the community when outside funding support ceases.

CHAPTER III. ASSESSMENT OF THE PARTICIPANT RECRUITMENT AND ENROLLMENT ACTIVITIES OF OPERATION IDENTIFICATION

A. Introduction

The activities engaged in by Operation Identification projects to encourage, develop, and monitor citizen participation constitute the recruitment and enrollment component of all O-I projects. This component includes all direct activities taken by project staff and volunteers, and represents the "effort" component of O-I. This chapter presents an assessment of this component. (Some authors refer to the evaluation of project efforts as "process" or "implementation" evaluation.) The assessment of the other project components: burglary deterrence, and property recovery and return, which may or may not be the results or "effects" of these efforts, are discussed in chapters IV and V respectively.

Recruitment objectives include making the public aware of the project's purpose and procedures, and encouraging citizens to join. To do this, it is often necessary to increase public awareness about the risk of burglary and convince citizens that O-I can help reduce their chances of being victimized. Enrollment objectives include: (1) enabling citizens to inventory and mark their personal property, (2) providing decals for participants to display, and (3) registering each participant with the project.

To accomplish the recruitment objectives, there are both impersonal public education efforts through the mass media, and

personal contact with groups and individuals by project representatives. The project's role in these activities can be described as either passive or active, depending upon the amount of direct contact between project representatives and the target population. The project's recruitment role is most passive when it uses mass media promotional efforts which require little direct interaction with the target population. On the other hand, projects that recruit participants in person through group meetings and individual contacts are actively involved in the recruitment process.

Enrollment activities include distributing the necessary O-I instructions and materials to citizens, loaning engraving tools, providing engraving services, and collecting such basic information about citizens who join the program as name, address, telephone number, identifying number used, and date joined. In its most passive role, an O-I project makes engraving tools and materials available to the public at various project distribution sites. In this role, the citizen must take the initiative to obtain what equipment and materials he needs, must mark and inventory his own property, and, finally, must post the project's decals himself; the project's enrollment activity consists primarily of only collecting registration information from each new participant. In its most active role, the O-I project has its representatives take the necessary tools and materials directly to citizens' homes, mark their property for them, post decals, and record the necessary registration information. In this case all the citizens have to do is agree to join the project and

allow the project representatives to perform these services for them.

The remaining sections of this chapter describe and assess the validity of the relationships between the activities of the recruitment and enrollment process. This is done by identifying and evaluating, if adequate data exist, the key assumptions that link these activities. It will be shown that, although the more "passive" recruitment methods tend to be less expensive, they are also less effective than more "active" project strategies.

B. Recruitment and Enrollment Framework

The activities which constitute the recruitment and enrollment process of O-I are shown in Figure 3-1. The activities indicated are performed either by the project or by participating citizens. Each activity is primarily dependent upon successful completion of the activities that precede it. The activities performed by the citizens are, for the most part, assumed to be the effect of the activities performed by the project. These citizen activities are illustrated in Figure 3-1 by dashed lines. The vertical arrows show the most commonly selected alternatives, while the horizontal arrows show options used by a few projects.

Project activities. The planning and implementation stage, shown at the top of Figure 3-1, represents all of the preliminary steps which must precede the formal commencement of project activities. Included are the mobilization of necessary resources (money, manpower, equipment, and office space), the establishment of goals and priorities, and the selection of specific intervention strategies.

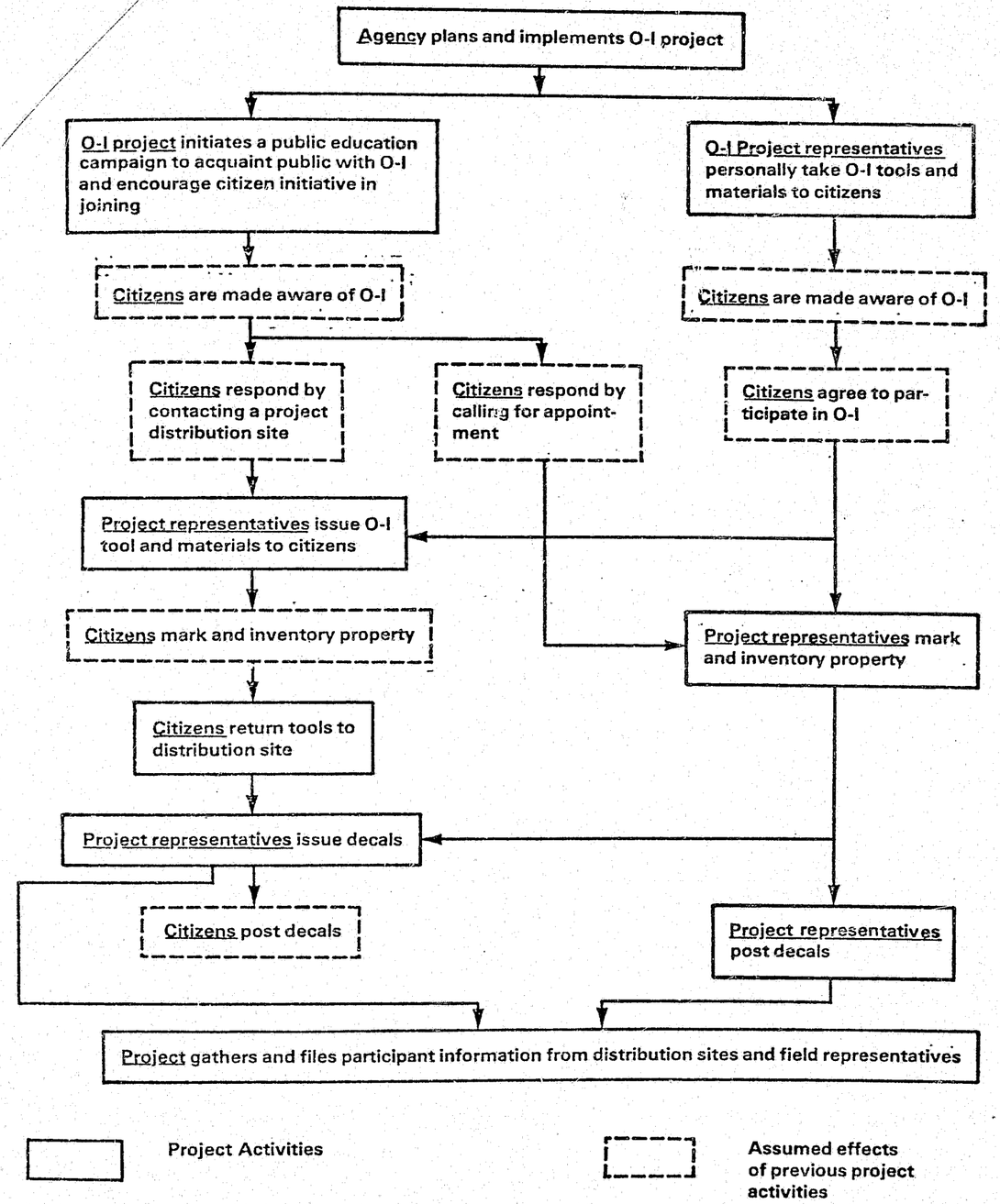

Figure 3-1

RECRUITMENT AND ENROLLMENT FRAMEWORK

The vertical path along the left side of the diagram follows what is called the public education model of O-I recruitment and enrollment. This model relies upon various public education strategies to motivate citizens to take the initiative in joining the O-I project. The public education model uses the following methods: news coverage, feature stories, and advertising through newspapers, radio, and television; visual displays such as posters and billboards; distribution of brochures and leaflets through mass mailings and personal contacts (door-to-door and at public booths); and presentations at group meetings. The usual enrollment method is the use of distribution sites to loan engraving tools to citizens so they can mark their own property. With the exception of group presentations and personal distribution of O-I literature, the project's role is passive both in recruitment and enrollment.

The vertical path along the right side of the diagram follows what is called the direct solicitation model. The project's role in this model is quite active, since the key activities are performed by project representatives and the citizen has only to give his consent. The most common recruitment method used is door-to-door contacts occasionally preceded by mailings, or door-to-door leafleting. Some projects rely upon group meetings to develop community contacts. The citizen's property is generally marked by the project representative immediately upon obtaining his consent.

The public education model is the most commonly used combination of recruitment and enrollment activities. In the

Telephone Survey, 88.5 percent of the 78 representative projects surveyed used mass media publicity, and 98.7 percent loaned tools to citizens. The direct solicitation model is used by some projects to supplement their public education efforts; about 45 percent of the Telephone Survey respondents indicated that they engrave property for citizens, although only 20 percent solicit citizens for this service.

Some projects utilize a combination of features from both models. These projects can be collectively identified as using a "crossover" model; the combinations of activities used by such projects are indicated by the horizontal crossover points in Figure 3-1. Crossover models and citizen response to events not shown on the chart (e.g., participation in response to a burglary) are not discussed in this chapter since they represent either a small minority of all O-I projects or infrequently occurring events.

Measurement points. Data regarding recruitment and enrollment can be collected at two major points within the framework of activities indicated in Figure 3-1. The first is when the project is recruiting participants through public education or direct contact with citizens. Information collected at this point can include the type, amount, and cost of the recruitment methods used; data about the personal contacts made by project representatives (e.g., the number contacted, locations, times and dates of contacts, and types of responses encountered); and the extent of public awareness about O-I obtained from citizen surveys. Specific data items could include the degree of fa-

miliarity about and reaction of citizens to O-I, and the usual sources of O-I information.

The second measurement point is at the time of participant enrollment; the kinds of information collected at this point can include data on the participants, the amount and kinds of property marked and inventoried, and the extent of decal use. Information about participants can include the number of people enrolled both at distribution sites and through direct contacts, the identifying numbers used by the participants, other burglary precautions taken by participants (and whether these were taken before, at the same time, or after joining O-I), prior burglary history, reason(s) for joining O-I, and data about each participant (name, address, telephone number, and date of enrollment). Property data include the number, type, and value of items marked and inventoried by each participant. For projects not requiring the use of a property inventory list, data can be collected on the number of participants who compile their own property inventories. Data on decal use include the number of participants posting decals, the number of decals used per household, and the places where participants post the decals. Some of these data are difficult to collect at the time of enrollment, especially when distribution sites staffed by volunteers are used. In these instances the data may be more easily collected with follow-up interviews of O-I participants; on-site checks would be ideal, but present serious practical problems.

Other useful data which can be collected for recruitment

and enrollment activities include: the number and cost of engraving tools purchased, the length of time borrowed tools are kept by users, the number of tools lost or stolen, the amounts and costs of printed materials used for enrollment, and the extent and value of donated manpower and services.

It should be noted that very few O-I projects have attempted to collect even part of the data described above. Most O-I projects to date have gathered little or no data either because of manpower limitations or a lack of interest in evaluating the effectiveness of the project.

Assumptions. The first major assumption made in the recruitment and enrollment process described above is that citizens can be made aware of O-I. This is common to both project models and includes awareness of the goals and objectives of O-I, the burglary deterrence potential of O-I, and the specific procedures required to participate in the program. At a lower level, this assumption encompasses several important elements (or subassumptions) about the effects of O-I recruitment efforts including that:

- people will see or hear the project information,
- people are willing to become informed about programs such as O-I, and
- people will "absorb" and retain at least a portion of the information.

The second assumption is that people will respond, once informed. This response can be any one of several alternatives, depending upon the project, such as a visit to a project dis-

tribution site, a telephone call to arrange an appointment for engraving services, or simply giving consent for a project representative to render the necessary enrollment services. The assumption that citizens will respond, once informed, is itself based upon the subassumptions that:

- o people are concerned about the risk of being burglarized,
- o people are willing to take steps to reduce their risk of being victimized,
- o people can be persuaded on the basis of information presented that O-I will reduce their chances of being victimized, and
- o people have at least some trust and confidence in the implementing agency or the project representative.

The third assumption is that people will follow project guidelines and instructions pertaining to marking and inventorying property, posting decals, and registration of participant information. It can be assumed with a fair amount of certainty that these activities will be implemented properly by trained project staff; but the level of certainty diminishes when project volunteers perform these services, and serious questions arise when citizens are expected to carry out these activities on their own. For this case, the important subassumptions are that:

- o adequate instructions have been given to the staff, volunteers, or citizens who will actually mark and inventory property, post decals, and record participant information (these instructions include what identifying number to use, what types and number of items to mark, the location of numbers on property items, the number of decals to use, the location of decals, and the kinds of participant information to obtain);

- o citizens will actually use the tools and materials issued to them by the project; and
- o citizens will not object to having identifying information about them recorded by the project.

Uncontrollable factors. There are many factors beyond the immediate control of O-I projects which have an effect upon the success of project efforts. Such factors are "givens" with which each project must contend and they vary greatly from project to project. One such factor is the organizational structure within which the project must operate; this is usually dictated by the implementing agency. Other factors are community attitudes toward crime and the implementing agency. These attitudes affect the extent, style, and methods of recruitment needed by local projects, and may be one reason for the wide variation in recruitment activities found among O-I projects. Both the Telephone and the Field surveys confirmed that these uncontrollable factors do influence the effectiveness of implementing O-I projects. It is, however, beyond the scope of the present study to assess the extent of influence exerted by such factors. It remains, in the final analysis, the responsibility of local project administrators to assess the particular environment in which their O-I project must operate and to make their policy decisions accordingly.

C. Major Questions to be Assessed

Based upon the preceding discussion of the recruitment and enrollment process, several major questions can be identified about the efficiency of the process itself and the

effectiveness of the activities within the process. These questions are:

1. Can large numbers of people be made aware of the existence of an O-I project?

2. Will a sufficient number of those people made aware of O-I take the necessary steps to join an O-I project?

   a. Will people take the initiative to join O-I as a result of O-I public education efforts?
   b. Will people agree to join O-I as a result of direct solicitation by project representatives?

3. Will O-I participants follow project guidelines and instructions?

   a. Will participants follow property marking instructions?
   b. Will participants inventory their property as instructed?
   c. Will participants post project decals as instructed?
   d. Will participants register with the project?

4. What costs are involved in the recruitment and enrollment of O-I participants?

Each of the foregoing questions is discussed in the following section.

D. Assessment of the Major Recruitment and Enrollment Questions

This section represents a synthesis of what is known about the questions identified in the preceding section. This information is taken from various sources, as described at the beginning of this paper. A discussion of the relevant findings for each question is presented below.

In summary, it appears that O-I projects can make the public aware of their existence, but only a small percentage of those informed will become participants. The mass media, particularly newspapers and television, appear to be effective in

reaching large numbers of people with O-I information, although personal contacts through group presentations and door-to-door canvassing can provide more detailed and personalized information to significant numbers of people. Personal contacts, however, are more costly and time-consuming than mass media promotion, but produce better rates of citizen response.

When adequate instructions are given, most O-I participants will follow project guidelines regarding the use of the recommended type of identifying number and the posting of project decals. Little is known about the number of items marked by participants or the extent to which participants use property inventory lists provided by O-I projects. The collection of registration information from O-I participants has produced few major problems, but how many people do not join O-I projects due to an unwillingness to provide personal registration information is unknown. It is also not known how many people mark their property or post decals without officially enrolling in their local O-I project.

Question 1. Can large numbers of people be made aware of the existence of an O-I project?

This question relates to the ability of an O-I project to make its existence known among the people living in its target area. A similar question can be raised about the extent of the public's knowledge about O-I goals and procedures, but that question is not discussed here because of the difficulty in measuring such knowledge. (Question 2 below raises the more relevant issue of public response to O-I information.)

There are data which indicate that large numbers of people can indeed be made aware of O-I, and there are limited data available on the roles played by the various promotional methods used to inform the public. The statewide evaluation of O-I projects in Illinois concluded, on the basis of random participant and non-participant interviews, that most people in the areas sampled were aware of O-I, although some were not immediately familiar with the name of the project.[18] In September 1973, a survey of 254 St. Louis residents, surveyed by telephone to test their awareness of various High Impact Anti-Crime programs, found that about 70 percent of those interviewed were aware of O-I.[21] A similar telephone survey of randomly-selected Denver residents showed that 75 percent of those interviewed were aware of O-I.[6] The St. Louis, Denver, and Illinois projects surveyed used a variety of promotional methods, including various kinds of mass media and personal contacts.

Radio and television. In the Telephone Survey, 54 percent of the projects contacted said that they used radio publicity either "often" or "sometimes," while only 29 percent said they used television publicity that frequently. Both radio and television tend to be used mostly in the larger urban settings. In the Denver survey cited above, 47 percent of all persons interviewed who were aware of O-I identified television as their initial source of O-I information, while only 7 percent indicated radio.[6] The Denver study concluded that television was the most effective medium for informing the public, and that radio was not particularly effective. In the St. Louis Impact survey

mentioned above, 46 percent of those persons aware of O-I named television as their primary source of O-I information, while only 8 percent named radio.[21] Another St. Louis telephone survey of 130 O-I participants and 218 non-participants found that 9 percent of the participants and 19 percent of the non-participants who were aware of O-I had first heard of the program on television, while only 3 percent of the participants and 6 percent of the non-participants had first heard of the program on radio.[22] In the Illinois O-I study, television was the second most frequently-mentioned source of citizen information about O-I, while radio was mentioned much less frequently.[18]

Newspapers. In the Telephone Survey, 67 percent of the O-I projects contacted said they used newspaper publicity "often" or "sometimes." In the St. Louis Impact survey, 12 percent of those persons aware of O-I mentioned newspapers as their primary source of O-I information,[21] whereas in the second St. Louis O-I survey, 21 percent of both participants and non-participants mentioned newspapers as their initial source of O-I information -- second only to television in the total number of persons reached.[22] The Illinois O-I study concluded that newspapers were the most effective promotional medium.[18] The Denver survey concluded that newspapers were the second most effective medium.[6]

Billboards, posters and displays. Various kinds of visual media are used by some projects to supplement other mass media efforts. Included in this category are billboards, posters,

display booths, bus and taxi signs, and bumper stickers. Less than one-third of the projects contacted in the Telephone Survey used any of these, and none of the projects included in the Field Survey claimed any degree of successful recruitment through such media, although several had used them extensively. The St. Louis O-I survey confirms this finding; only 1 of 130 participants and 7 of 218 non-participants cited billboards as their initial source of O-I information.[22]

Mass mailings. Mass mailings of O-I literature have been attempted by a small number of O-I projects, usually in larger communities, but none has reported any encouraging results from such efforts. The Seattle project has used mass mailings to precede door-to-door canvassing and public meetings in target neighborhoods, but the mailings alone have produced only a one percent response rate.[41] The Suburban Crime Prevention Unit in Wyoming, Michigan, sent letters offering O-I and premises security services to 451 target households in 1974 without a single response![48] In the Denver survey, only one and a half percent of all persons aware of O-I cited project mailings or leaflets as their source of O-I information.[6]

Group presentations. About three-fourths of the projects contacted in the Telephone Survey stated that their staff members gave presentations about O-I to local groups. The Field Survey found that the Denver O-I project has reached between 8,000 and 10,000 people in approximately two years, and that the St. Petersburg project has made presentations to more than 25,000 people in only seven months. During the first eight months of the Minnesota

Crime Watch, 1,020 group presentations were made, reaching over 54,000 people.[13] This method is often preferred to the use of mass media because of the increased contact between police officers and the public, and because of the amount and quality of information that can be presented at one time.

Door-to-door canvassing. The most individualized method of promoting O-I is through door-to-door canvassing by project staff or volunteers. Each contact can be limited to a short verbal presentation and distribution of O-I literature, or it can be expanded to include immediate enrollment of the household into the project by providing property marking and decal posting services. A number of cities, including St. Louis[20] and Hoffman Estates (Illinois),[16] have tried the more limited approach with poor results; on the other hand some cities, such as Indianapolis[14] and Detroit,[11] have reported good results when immediate O-I enrollment is included. In Indianapolis eight police officers canvassed 11,800 homes in a nine-month period. These more successful projects are discussed as part of the next major question. There is at present no information to show that door-to-door distribution of O-I literature is any more useful than mass mailings in informing the public about O-I. It is surely more time-consuming and costly. Some police departments choose to use this method of O-I promotion primarily to achieve increased contact between police officers and citizens.

Word of mouth. Information is often disseminated within a community by various informal mechanisms or networks. For purposes of the present discussion, all of these are classified

as "word of mouth." This classification includes information-sharing among friends, neighbors, and relatives, and the spontaneous exchange or dissemination of information by community groups such as church and volunteer organizations. It appears that such informal mechanisms aid the spread of O-I information into a community. In the Denver survey, 27 percent of the respondents who were aware of O-I said they had first heard of it from a friend or neighbor.[6] In the Illinois study, about 18 percent of the participants and 13 percent of the non-participants in Chicago who had heard of O-I had obtained project information initially from a friend or relative; for all northern Illinois jurisdictions outside of Chicago (hereafter referred to as northern Illinois), about 12 percent of both participants and informed non-participants had obtained O-I information from a friend or relative.[18] In St. Louis, 59 percent of the O-I participants interviewed in one survey had first heard of the program from a friend or relative, or through a church, school, neighborhood organization, or employer.[22] (This is in addition to the 35 percent who cited Police Community Relations meetings or Women's Crusade Against Crime meetings.)

Summary. In general, it appears that O-I projects can make the public aware of their existence, although the studies cited above do not indicate the degree of the public's familiarity with the goals and procedures involved in O-I. Television and newspapers appear to be the most effective mass media for reaching the public with O-I information. Visual displays and mass mailings do not appear to be effective at all. These findings

are limited, however, by the fact that the foregoing studies do not account for the degree of project utilization of these media. Although personal contacts through group presentations and door-to-door canvassing do not reach the large numbers of people achieved by mass media methods, they can provide significant numbers of people with more detailed and personalized information.

Question 2. Will a sufficient number of those people made aware of O-I take the necessary steps to join an O-I Project?

Most O-I projects have had little success in motivating large percentages of their target populations to join O-I, even in those areas where surveys have shown that most of the population is aware of the project. Community-wide participation rates reported in the Telephone Survey varied from less than 1 percent to nearly 40 percent, with two-thirds of the projects reporting less than 5 percent participation, and another 20 percent reporting only 6 percent to 10 percent. Whether these participation levels can be called "sufficient" is discussed later in this paper. The fact remains, however, that for most projects, participation rates are extremely low, especially when compared to the large numbers of people apparently aware of the O-I projects.

Some of the differences in participation levels among the more successful projects can be attributed to the use of different recruitment and enrollment methods. Specific examples to illustrate this are presented below in the discussion of the two sub-

questions dealing with the two major recruitment and enroll-
ment models described above. The use of different recruit-
ment and enrollment methods, however, does not appear to be
sufficient reason by itself to account for the wide variations
in participation levels among these more successful projects.
Different projects using similar recruitment methods under
similar conditions have reported significant differences in the
levels of citizen response.

In order to identify possible factors other than recruit-
ment and enrollment methods which influence participation rates,
two types of analyses were performed. First, the data on all
projects contacted during the Telephone Survey were examined to
determine what factors formed the strongest correlations with
participation rates; and second, data on those projects which
achieved participation rates well above the norm were examined
for identification of common characteristics.

No significant relationship was found between the partici-
pation rate reported in the Telephone Survey and any major
project characteristic, including the project's funding level,
number of full-time staff, degree of urbanization of the target
area, length of project operation, and number of distribution
sites used. The probability of above-average participation
levels, however, was found to be slightly higher for projects
located in the Midwest.

All projects which reported participation rates over 10
percent are listed in Table 3-1. Projects in jurisdictions
with less than 100,000 population had an average p

Table 3-1

TELEPHONE SURVEY O-I PROJECTS REPORTING
OVER TEN PERCENT CITIZEN PARTICIPATION

(N = 14)

Project Location	Percent Participation	Population (1970 Census)	Start Date	No. of Staff (Full Time/Part Time/Vol.)	Source of Funds or Manpower (in addition to Police Department)
Projects in jurisdictions with populations less than 100,000 (Average rate of participation: 28.3%[a])					
Wenham, Mass.	39	3,849	Jan., 1972	0/ 2/0	Police Relief Assn.
Plymouth, Minn.	36[b]	17,593	July, 1973	0/ 9/16	LEAA, local citizens' Council.
Concord, N. H.	31[b]	30,022	June, 1973	0/ 3/0	(None)
Muncie, Ind.	30	69,080	1973	0/ 3/25	LEAA, Insurance Assn., Chamber of Commerce.
Delaware, Ohio	19	15,008	June, 1973	0/ 2/0	LEAA, Insurance Assn.
Brea, Calif.	18[b]	18,447	Jan., 1970	0/ 5/22	Police Explorer Scouts.
Lincoln Park, N. J.	13	9,034	June, 1971	0/ 1/0	Police Assn., Insurance Assn., and other businesses.
Projects in jurisdictions with populations greater than 100,000 (Average rate of participation: 18.3%[a])					
Wichita, Kansas	37	276,654	Sept., 1971	0/ 5/187	Insurance Assn. and other businesses.
Cincinnati, Ohio	17[b]	452,524	June, 1972	0/ 7/20	Insurance Assn., banks,
(Montgomery, Ohio)[c]	26	5,684	"	0/10/0	Savings and Loan Assn.,
(Harrison, Ohio)[c]	21	4,408	"	0/ 7/0	County Police Assn.
Phoenix, Ariz.	17	581,562	1972	0/ 4/0	Insurance Assn., banks, and other businesses.
Denver, Colo.	17	514,678	Jan., 1973	21/ 0/0	LEAA.
St. Louis, Mo.	11[b]	622,236	Sept., 1972	1/21/12	LEAA.

a. Based upon the total number of households and the total number of reported participants for all projects listed in each category.
b. Known to be based upon estimated or unverifiable participation totals.
c. Located in Hamilton County, which has had a county-wide O-I project serving Cincinnati and suburbs.

rate (28.3 percent) considerably higher than the average rate (18.3 percent) for cities with more than 100,000 population. This result suggests that higher participation rates are more likely to be obtained in smaller target areas. One explanation for this result is that smaller cities are more likely to use personal contact methods which produce higher enrollment levels.

It should be noted that many of the participation figures listed in Table 3-1 are based only upon estimates given by Telephone Survey interviewees. Verification of estimated participation levels in the projects visited for the Field Survey indicated that, for many projects, the true participation level may not be nearly as high as the estimate originally obtained in the Telephone Survey.

A third observation about the projects listed in Table 3-1 is that all except one (Concord, New Hampshire) have had significant amounts of outside support, including funding and donated materials and services; amounts in excess of other projects which were less successful in recruitment.

Question 2a. Will people take the initiative to join O-I as a result of O-I public education efforts?

It has been shown above that large numbers of people can be made aware of O-I through mass media and other public education techniques. It appears, however, that public education alone is insufficient to motivate significant numbers of people to take the initiative to join O-I, although some promotional methods appear to be more effective than others in this respect. The citizen initiative required for enrollment in most O-I

projects is a visit to a project distribution site to obtain an engraving tool and project materials, and then marking his property. (Included in this category is the Denver O-I project which uses public education techniques, but only requires citizens to make a telephone appointment for project-provided engraving services.)

Most O-I projects have depended upon public education to produce citizen action and most have experienced disappointing recruitment results even though many people have been made aware of O-I. About 71 percent of the persons interviewed in the St. Louis Impact survey indicated that they were aware of O-I, but even the most optimistic estimates of participation rates for St. Louis indicate less than 11 percent.[21] The Illinois study concluded that most of the people in the areas sampled were aware of O-I, but even the most successful projects were able to achieve participation levels of only three to five percent, while the vast majority of Illinois projects had much lower levels of participation![18] In a survey of Denver residents, 79 percent had heard of O-I, but only 14 percent of all households had actually joined the project, and only 18 percent of the survey respondents who were aware of the O-I project had joined.[6]

In the St. Louis Impact survey, only 11 percent of the respondents who were aware of the O-I project had actually joined, despite the fact that nearly all reported having a favorable impression of the project.[19] In the St. Louis O-I

survey, nearly 50 percent of the non-participants interviewed had heard of the project, and nearly all reported a favorable reaction once the program was explained; 66 percent of these persons indicated some interest in joining the project.[21] Despite this, only 11 percent of those aware actually joined.

The limited information available on the recruitment effectiveness of various public education methods is summarized in the following paragraphs. The number of people recruited through each method is dependent upon the extent to which it is utilized, but with few exceptions, the surveys cited below do not account for this dependency. Billboards, posters, and displays are not discussed under this question because all of the available information about their effectiveness has already been presented; it was shown in the preceding section that these visual media are relatively ineffective methods of informing the public.

Radio. In the Denver survey, 7 percent of both participants and non-participants who were aware of the project had heard of O-I on the radio, and among these respondents, only 17 percent had joined.[6] On the basis of these results, the Denver study concluded that radio was not an effective recruitment medium. The Illinois study reported similar findings from its participant and non-participant interviews in Chicago and northern Illinois. In Chicago, only 5.9 percent of the participants and 4.8 percent of the non-participants who had heard of O-I cited radio as their source of O-I knowledge; in

northern Illinois, 9.4 percent of the participants and 12 percent of the non-participants who had heard of O-I named radio as their source of O-I knowledge.[18] In the St. Louis O-I survey, radio was mentioned as the source of O-I knowledge by only three percent of the participants and six percent of the non-participants who had heard of the program.[22] All of these studies found radio to be less effective than either television or newspapers in persuading people to join O-I.

Television. In the Denver survey, 40 percent of the participants and 50 percent of the non-participants who were aware of O-I had heard of the program on television; and among these respondents, 18 percent had joined the project.[6] The Denver study concluded that television was the most effective recruitment medium. In Chicago, 12 percent of the participants and 40 percent of the informed non-participants cited television as their source of O-I information; television was cited as the O-I information source by 20 percent of the participants and 32 percent of the informed non-participants in northern Illinois.[18] The only conclusion drawn by the Illinois study was that television was less likely to produce participants than had been expected. The St. Louis O-I survey showed that 9 percent of the participants and 19 percent of the informed non-participants had heard of O-I on television.[22] The St. Louis study concluded that among mass media methods used, television was the second most effective.

Newspapers. In the Denver survey, 27 percent of the participants and 32 percent of the informed non-participants had

heard of O-I through newspapers; among all respondents, 15 percent had joined the project.[6] In Chicago, where newspaper publicity was not widely used, 10 percent of the participants and 16 percent of the informed non-participants cited newspapers as their source of O-I knowledge; in northern Illinois, 50 percent of the participants and 46 percent of the informed non-participants cited newspapers as their source of O-I knowledge.[18] The Illinois study concluded that outside of Chicago, newspapers were the best medium for recruiting participants. The St. Louis O-I survey showed that 21 percent of both participants and informed non-participants had heard of O-I in the newspapers.[22] The St. Louis study concluded that newspapers were the most effective mass medium for the recruitment of participants.

Group presentations. In St. Louis the O-I survey showed that 35 percent of the participants and only 5 percent of the informed non-participants cited Police Community Relations meetings or Women's Crusade Against Crime meetings as their source of O-I information.[22] The study concluded that O-I presentations at such meetings were the most effective recruitment method. In Chicago, where most O-I promotion was done by civic groups, 31 percent of the participants and 9 percent of the informed non-participants mentioned civic organizations as their source of O-I knowledge; in northern Illinois, where such groups were not as involved, nine percent of the participants and four percent of the informed non-participants mentioned civic groups as their source of O-I knowledge.[18] The

Illinois study concluded that civic groups had provided the most effective means of recruitment in the Chicago area. The Seattle Burglary Reduction Program found mass media methods to be so ineffective that it now relies primarily on neighborhood meetings to recruit participants for O-I and other burglary prevention efforts.[40] The Telephone Survey showed that those projects using group presentations as one of their recruitment methods had a slightly higher probability of achieving above average participation levels.

Door-to-door canvassing. This discussion is limited to door-to-door contacts by project representatives solely for dissemination of project information; citizen enrollment is assumed to take place at a later time. Several O-I projects have tried this limited approach to door-to-door canvassing, hoping that this personal approach would be more effective in producing participants than the impersonal public education methods. To date, the results have not been encouraging. The St. Louis O-I project launched a door-to-door informational campaign in 1973, but soon discontinued it because of poor citizen response. The Suburban Crime Prevention Unit in Wyoming, Michigan, sent officers to 451 homes, but few new participants were produced, and it was concluded that the campaign had not been worth the effort.[48] The Seattle Burglary Reduction Program uses door-to-door canvassing preceded by mass mailings of project literature to build attendance at the neighborhood meetings which are the project's primary method of citizen recruitment; however, door-to-door canvassing alone has produced

few participants.[42]

Word of mouth. The informal mechanisms through which information spreads through a community are effective in producing O-I participation among those informed. This has been shown most dramatically in St. Louis, where 59 percent of the O-I participants interviewed in one survey indicated that they had heard of the program from informal sources (i.e., a friend, relative, neighbor, church, school, neighborhood organization, or employer), whereas only two percent of the non-participants who had heard of O-I had obtained their information from such sources.[22] (This is in addition to the 35 percent of the participants and 5 percent of the informed non-participants who cited Police Community Relations meetings or Women's Crusade Against Crime meetings.) The St. Louis study concluded that, collectively, informal sources were the single largest source of O-I information among participants.

In the Denver O-I survey, 32 percent of the participants and 25 percent of the informed non-participants interviewed had heard of O-I from a friend or neighbor.[6] Another nine percent of the participants and three percent of the informed non-participants had obtained O-I information from other sources such as school, church, employer, Boy Scouts, or local resident group.[6] In Chicago, 18 percent of the participants and 13 percent of the informed non-participants cited friends or relatives as their source of O-I information; in northern Illinois, about 12 percent of both the participants and the informed non-participants interviewed cited friends or relatives

as their source of O-I information.[18] With the exception of the results in northern Illinois, all of the surveys cited above indicate that word of mouth sources of O-I information are identified by significantly greater percentages of participants than informed non-participants. This indicates that these informal networks have been very effective in producing O-I participation among those informed in this manner.

It is interesting to note that the project which showed the most extensive recruitment by word of mouth (St. Louis) also had strong civic group sponsorship, while the area which showed the lowest level of recruitment by informal means (northern Illinois) had little or no civic group backing for O-I. It may be that community groups provide one important means of tapping into informal communication networks which mass media methods are unable to do. Some projects have tried to utilize informal sources by suggesting that participants encourage their friends to use the engraving tool while it is checked out. Other ways include newspaper ads that can be passed on or having participants give project literature to friends.

Summary. The discussions of the individual public education methods above indicate that although a large number of people can be reached with O-I information through mass media public education techniques, only a small percentage of those reached will take any action in response. On the other hand, although group presentations by project representatives inform fewer numbers of people, such presentations can be quite effec-

tive in producing participation among those reached, possibly due to the higher quality of the information conveyed. The evidence above also suggests that informal community networks are very effective in producing participation among those who receive O-I information through such sources.

Of the mass media techniques, television and newspapers appear to have been relatively more successful than radio in producing participation among those reached with O-I information. Other techniques such as mass mailings, door-to-door canvassing; discounts on insurance, and recruitment methods directed at recent burglary victims have not been successful.

Further research is required to identify the basic reasons for the low rate of response to mass media appeals. Possibly, the single most important area for future study suggested by the recruitment difficulties of O-I is the application of appropriate marketing research techniques to the law enforcement environment. These techniques would be used to determine the most appropriate "sales" approach required in order to sell crime prevention concepts to the public. The best evidence to date suggests that the consumer has not been adequately sold on the benefits of O-I.

Question 2b. Will people agree to join O-I as a result of direct solicitation by project representatives?

In reaction to the low rate of citizen response to mass media public education methods, some O-I projects have chosen to take O-I tools and materials directly to the citizen. Recruitment is usually done through door-to-door canvassing or at

group meetings, and enrollment is immediate. The project representative either provides property marking services on the spot or issues an engraving tool to the citizen.

Thus, by combining the recruitment and enrollment functions into one process, some projects have obtained relatively high participation rates. Community service officers in Detroit engraved over 29,000 items in 6,419 inner city homes over a 22-month period.[12] The Field Survey learned that Denver O-I staff members have provided property marking services to over 25,000 households in approximately two years. The Seattle Burglary Reduction Program organizes neighborhood citizen groups which purchase and circulate their own engraving tools; 2,728 O-I participants were enrolled during the first year of the program, both through this method and through provision of property marking services by the project staff.[40]

Various rates of citizen response to door-to-door solicitation for immediate property marking services have been encountered. In Indianapolis, the Field Survey found 11,800 inner city homes were contacted by police officers during a nine-month period, and approximately 3,300 permitted the officers to engrave their property. (Project literature was left at homes where repeat visits produced no personal contact; these homes were included among the 11,800 "contacts.") According to the Field Survey, a door-to-door property marking campaign by Phoenix Explorer Scouts in June 1973, enrolled 100 homes in O-I; this number represented 56 percent of a small target area

selected for the campaign. In Columbus, Ohio, the Hilltop Civic Council has sponsored a door-to-door O-I campaign within its neighborhood, with members of the group providing property marking services to residents; in blocks covered between August 1974 and February 1975, participation rates have been as high as 80 to 90 percent. In San Jose, California, 1,800, or 50 percent, of the homes in the O-I target area, have been enrolled through door-to-door solicitations. Year-end reports for 1974 indicate that 75 percent of the San Jose households contacted were interested in O-I, and 56 percent of those contacted permitted engraving to be done.[37]

Some projects covered in the Field Survey have also reported good results with direct recruitment at group meetings followed by immediate issuance of engraving tools. The St. Petersburg, Florida, Office of Crime Prevention explains O-I at meetings in private homes and leaves one or more tools with the host to circulate among his neighbors. Over 2,000 people have been registered in the project to date and many more may have used the tools without enrolling. In St. Louis County, Missouri, the O-I project enrolled about 3,000 O-I participants in 1974 by having employers and apartment managers circulate O-I tools and materials among their employees and tenants. The Suburban Crime Prevention Unit in Wyoming, Michigan, calls upon all residential burglary victims in the three participating municipalities to offer them a security survey of their homes and the immediate use of an engraving tool; few people refuse.

People are more likely to join O-I if project equipment and materials are brought directly to them by project representatives; it appears that considerably higher percentages of people respond to direct solicitation than to mass media appeals. Personal contact methods have proven quite useful in achieving high participation levels within target areas of limited size. Response rates among projects using personal contacts have varied from 30 percent to 80 percent. Factors producing this variance are difficult to isolate, but may include the characteristics of the target population, the time of day when contacts are made, and the skill of the canvasser.

Question 3. Will O-I participants follow project guidelines and instructions?

The crucial elements of citizen participation in O-I are the marking of property, the completion of a property inventory form when required, the posting of project decals, and the submission of registration information for project records. If all this is done for the participants by project representatives, it can safely be assumed that these activities will be properly completed. When citizens perform these tasks for themselves, however, the project must rely upon them to follow the instructions given. The question of whether citizens can be expected to follow these instructions is discussed below for each of the four tasks.

Question 3a. Will O-I participants follow property marking instructions?

Property marking instructions usually recommend the type

of identifying number to be used and the type of items to engrave. It has been found that most participants do in fact use the identifying number recommended by the project when such instructions are clearly given. In the St. Louis O-I survey, 83 percent of the participants interviewed stated that they had used their Missouri driver's license numbers (the number recommended by the project); most of the other participants interviewed indicated they had used their Social Security number (usually because they did not have a Missouri driver's license).[22] In the Denver O-I survey, 93 percent of the participants interviewed claimed to have used their Social Security numbers as recommended.[6] The Illinois O-I study showed that only 49 percent of the participants interviewed in Chicago and 67 percent of the participants interviewed in northern Illinois had used their Illinois driver's license number as recommended in the Illinois Law Enforcement Commission (ILEC) guidelines for O-I implementing agencies.[18] Twenty percent of the Chicago participants and 19 percent of the participants from the rest of northern Illinois had used their Social Security numbers, and the remainder had used various identifiers, including name, initials, and telephone number.[18] The study also concluded, however, that in many jurisdictions there were serious deficiencies in the instructions given to participants by the implementing agencies.

Another element of some property marking instructions relates to the importance of updating existing marks and en-

graving property purchased after the initial O-I enrollment. Few projects make such instructions explicit, and no evidence exists about the extent to which participants follow these recommendations.

Question 3b. Will O-I participants inventory their property as instructed?

Eighty-one percent of the O-I projects contacted during the Telephone Survey reported that they gave participants a form for inventorying their property. Many O-I projects sponsored by insurance associations encourage participants to file a completed copy of the form with their insurance agent. However, no information is currently available to determine the extent to which participants actually make use of property inventory forms. Although many projects stated that they did not collect inventory lists due to citizens' apprehensions about the misuse of these lists, no instances of such abuse have been found.

Question 3c. Will O-I participants post project decals as instructed?

Eighty-nine percent of the O-I projects contacted during the Telephone Survey indicated that they provided participants with project decals or stickers to post on their homes. Surveys in several O-I communities have shown that if adequate instructions are given, the majority of O-I participants do post these decals. In the Denver O-I survey, 96 percent of the participants interviewed stated that they had posted decals, and most had posted several; 84 percent had posted decals on

their front doors, 20 percent on their front windows, 57 percent on their rear doors, and 17 percent on their rear windows.[6] In the St. Louis O-I survey, 82 percent of the participants interviewed stated that they had used project stickers or decals.[22] In San Jose, a field check of O-I participants showed that 72 percent of the homes which had received engraving services had posted the project decals issued to them.[37]

The lowest percentages of decal use by O-I participants was reported in Illinois, but this may have been due to incomplete instructions given to participants by the implementing agencies.[18] In Chicago, only 22 percent of the O-I participants were displaying project decals; 13 percent had posted them near the front entrance of their homes, 3 percent had posted decals near the rear entrance, and 5 percent had posted decals on both entrances. In northern Illinois, 48 percent of the participants were found to be using the decals that had been issued to them; 16 percent had posted decals near the front entrance, 5 percent had posted them near the rear entrance, and 17 percent had posted decals on both entrances. The remaining participants had posted decals at other locations. It was also noted in the Illinois study that many participants had removed stickers which had become worn or faded.

Question 3d. Will O-I participants register with their local O-I project?

The amount of registration information collected by O-I projects from participants varies widely from project to project. Most projects collect registration information as part of the

tool check-out and return process or at the time property marking services are provided to participants. Few problems relating to such information collection have been reported by these projects, although some have reported occasional instances of citizens refusing to give personal information such as their Social Security or driver's license numbers. In St. Louis, the O-I project issued postcards to participants for them to sign and mail back to the O-I office to register their participation in the project without having to give personal information at an O-I distribution site. It was found, however, that only a small fraction of the postcards were returned by citizens who had used an engraving tool.[39] This is the only known example of an attempt to separate the registration process from other enrollment activities; in St. Louis, it appears to have created more problems than it solved.

It is not known whether requiring registration deters people from joining O-I, nor is it known how many people engrave their property or post decals without officially enrolling in their local project. These "unofficial" participants may be more likely to deviate from guidelines established by the local project. Finally, it is not known whether projects administered by police departments (as opposed to projects run by other government agencies or non-governmental organizations) encounter greater public resistance to registering O-I identifiers.

Summary. It appears that most citizens will follow O-I project instructions when such instructions are clearly explained,

although a major knowledge gap exists about the extent to which O-I participants use property inventory lists and keep their O-I enrollment current by updating the markings on their property (i.e., change initial markings if the identifier no longer applies and mark items purchased after the initial O-I enrollment). The major problem encountered in this area has been the use of a variety of identifying numbers by participants. (Confusion over what number to use has been characteristic of O-I since its inception.)

Question 4. What costs are involved in the recruitment and enrollment of O-I participants?

The complete cost of an O-I project is very difficult to determine, since few implementing agencies have separate O-I budgets and many projects rely upon donated services provided by other agencies or private groups. Major project costs include project materials and engraving tools, media promotional efforts, and the necessary manpower to administer each of the recruitment and enrollment activities. Information is presented below on estimated costs for materials, media, and manpower for several O-I projects; these and other cost estimates are then used to compute the costs per participant for several O-I projects.

Material costs. The kinds of equipment and materials used by O-I projects include electric or non-electric marking tools, O-I decals (water applied) or stickers (self-adhesive), instruction sheets, pamphlets, property inventory leaflets, tool checkout forms, and participant registration sheets. The costs of

these basic materials as reported by four O-I projects are presented in Table 3-2. Some O-I projects are now recommending that items not suitable for marking with engravers (art objects, antiques, paintings, furs, etc.,) be marked with "invisible" ink pens, whose ink becomes visible under ultraviolet light. Such marking pens cost from $1.50 to $3.00. These costs are relatively independent of the particular recruitment model (i.e., public education or direct solicitation) used by individual projects since the models differ primarily in the method of enrolling participants rather than in the materials used.

Media costs. Most O-I projects get some mass media promotion at no cost in the form of news items, feature story coverage, and public service announcements. Some projects have found, however, that such media time and space is often both inadequate and ineffective, and therefore have purchased media advertising; such advertising, however, can be quite expensive. In Denver, for example, a recent O-I grant proposal requested $23,000 for newspaper advertising and $11,600 for radio and television advertising for a 10-month period.[10] Newspaper advertisements cost the project from $160 to $187 apiece for a three-column, 14-inch space. Half-minute radio announcements cost $400 apiece to produce and an additional $11 each time they are used; television advertisements cost $500 apiece to produce and approximately $160 for each showing.

Manpower costs. Most of the manpower costs incurred by an O-I project are usually absorbed by the implementing agency through reassignment of existing staff or offset through the

Table 3-2

COST OF MATERIALS TO FOUR O-I PROJECTS[a]

Item	Unit Cost Range[b] Indianapolis[c]	Phoenix	Illinois[d]	Denver
Non-electric scribers	$1.25 - 5.00	NA	NA	NA
Electric engraving tools	$6.00 -11.00	$8.15 -14.00	$5.10	$5.20
Replacement tips for electric tools	UNK	UNK	UNK	$1.44
Decals/stickers (per 100)	$ .90 - 2.50	$3.70 - 5.50	$4.40	$1.67
Property inventory lists (per 100)	$1.80 - 6.80	$ .78	UNK	$2.33
Pamphlets/ brochures (per 100)	UNK	$1.00	$ .50	$7.70

NA - Not Applicable UNK - Unknown

a. Based on references 10, 18, 27, and 28.
b. Specific unit costs are determined by the quantity and quality of materials ordered.
c. Indianapolis Crime T.R.A.P. (Total Registration of All Property)
d. Statewide O-I program.

use of volunteers from other agencies or community groups. As a result, the total manpower costs for most O-I projects cannot be accurately determined. However, the experience of existing projects strongly indicates that a minimum core of paid staff is essential to project success. The guidelines for local implementors of the Minnesota Crime Watch program recommend that a minimum of eight man-hours per week be spent on Crime Watch activities, including Operation Identification.[13]

The amount of manpower needed to operate an O-I project depends upon the size of the project and the specific kinds of promotional methods used for recruiting and enrolling participants. Media recruitment and distribution site enrollment (passive project approach) can be managed with a minimum number of O-I staff, provided that media coverage is donated and ongoing personnel from cooperating agencies staff the distribution sites. On the other hand, door-to-door recruitment and property engraving by project staff members (active project approach) require considerably more manpower.

Cost per participant. Estimates of the minimum cost of recruiting and enrolling each O-I participant can be obtained by dividing the direct project costs by the total number of participants enrolled. It should be noted that such figures are very approximate, since direct project costs represent only a portion of the total amount of resources expended for a project and accurate data on the actual number of participants are difficult to obtain. Such estimates, however, do provide some

insights into the effort and success levels of various projects and also indicate the relative efficiencies of the major recruitment and enrollment methods.

Projects using the public education model show a wide variation in their per participant costs. During the Field Survey, it was found that the Grand Rapids, Michigan, Insurance Agents Association has spent approximately $3,900 on the O-I project for its metropolitan area, and the project has recruited approximately 5,000 participants. This yields a unit cost of only $.78 per participant, a very low estimate, but also a conservative one since the project has received considerable amounts of free publicity from a local television station co-sponsoring the project. The St. Louis O-I project has spent approximately $100,000 in Federal funds over a three-year period and estimates that roughly 27,000 people have participated in the program; this yields a cost of $3.70 per participant not including local resources used to match the Federal funds.

Table 3-3 presents cost and participation data for several O-I projects included in the evaluation study of the statewide Illinois Operation Identification Program.[18] The Illinois Law Enforcement Commission (ILEC) grant to each project does not include matching funds: the participant totals are the number of participants verified during field visits by an evaluation team from the University of Illinois at Chicago Circle. For these projects, the costs per participant varied from a low of

Table 3-3

COST AND PARTICIPANT DATA FOR O-I PROJECTS FUNDED BY THE ILLINOIS LAW ENFORCEMENT COMMISSION (ILEC)[a]

ILEC Grant Number	Location[b]	Grant Amount[c]	Number of Verified Participants[d]	Cost per Participant
741	Chicago	$48,457	5,552	$8.73
711	Park Ridge	2,748	627	4.38
736	Oak Park	1,193	600	1.99
651	Peoria	4,871	1,965	2.48
735	Skokie	1,329	480	2.77
856	Waukegan	1,240	192	6.46
742	Chicago Heights	822	130	6.32
Statewide Total:[e]		$125,434	27,858[f]	$4.50

a. Information adapted from "An Evaluation of Operation Identification as Implemented in Illinois."[18]
b. For grants divided among several communities, only the largest community has been named here.
c. Does not include local matching funds.
d. Figures listed are the total number of participants for all communities served by the grant, as verified in field visits by an evaluation staff from the University of Illinois at Chicago Circle.
e. A total of 32 grants were awarded to approximately 250 communities.
f. Based upon field-verified participation totals for all northern Illinois jurisdictions and mail questionnaire results for southern Illinois jurisdictions.

$1.98 to a high of $8.72; the statewide average was $4.50 per participant.

All of the official participation totals shown in Table 3-3 are believed to be lower than unofficial estimates of participation levels. It is also believed that the amount of the ILEC grant to each project represents only a fraction of the total cost of each project. Considerable amounts of additional resources are frequently expended by O-I projects in the form of services, facilities, and manpower donated by cooperating agencies.

As one example, the operation of O-I distribution sites can be quite expensive. The Denver O-I project reported that from December 1, 1973 to January 1, 1975, twenty-five local fire stations contributed a total of 10,225 man-hours to the O-I project; at an average rate of $5.75 per man-hour, the total contribution was valued at $58,794.[9] Similarly, the Denver Police Department had four sub-stations which donated 2,012 man-hours to the project between August 15, 1973, and January 1, 1975; at the same rate per man-hour, the total contribution amounted to $11,570.

The more direct forms of recruitment and enrollment are certainly no less costly. The Denver project relies mainly on project representatives who engrave property for citizens in their homes; the project expects to enroll 75,000 participants by the end of 1976, at a cost of approximately $500,000, an average cost of $6.67 per participant.[10] During the Phoenix

door-to-door O-I campaign, which used Explorer Scouts to offer engraving services to citizens, it took an average of 2.34 man-hours to recruit and enroll each new participant; if professional staff members had been used, this campaign could have cost as much as $14.00 per participant. The San Jose project found that door-to-door canvassing by paid part-time workers cost the project about $1.32 per contact and $2.31 per enrollee.[35] (The cost of materials and administrative support were apparently not included in this figure.) The Seattle Burglary Reduction Program reported that the extensive use of personal recruitment (door-to-door canvassing followed by neighborhood group meetings) cost the project about $17.00 for each project participant.[40] ("Participation" included the use of any one of four target-hardening activities, including O-I, offered by the program; the $17.00 per participant is a composite rate based on the total number of "participants" divided by the total budget for all four activities.)

Summary. Although the total amount of resources expended by most O-I projects is very difficult to compute, the unit participant costs vary from $.78 to $17.00 per participant. These costs are based on monies spent for materials, promotional services, and manpower; the actual cash outlay varies depending upon the amount of resources donated and the kinds of recruitment and enrollment methods employed.

It would seem reasonable, at first thought, that the cost of materials and equipment would decrease with time since the

initial purchase of engraving tools is the largest single budget item in this category. Actually, however, it has been reported by many projects that, for a variety of reasons, the amount of recruitment effort required for each new participant increases over time. Contributing to this latter effect is the fact that once the novelty of O-I wears off, the availability of free media publicity becomes increasingly limited. Also, the people most motivated to participate in O-I are the first to enroll, and increasingly more effort is needed to persuade others to join.

Lower costs per participant can be achieved through heavy reliance upon donated O-I promotional activities. However, such a strategy is most likely to result in a very slow rate of citizen response, requiring several years of work to produce satisfactory participation levels. Moreover, this strategy could be unsatisfactory in highly mobile urban communities where participants may move away or change residences faster than they can be enrolled. In order to build participation levels of more than 50 percent within a few years, it appears that it will be necessary to expend large amounts of money on O-I recruitment and enrollment. These amounts can easily approach the figure of $17 per participant experienced in Seattle. The magnitude of this cost may be put into perspective by comparing it to estimates of the average annual cost per household for all local law enforcement services, which is about $125, and the average annual loss per family for reported residential bur-

glary, which is $9.[47] Of course, the latter figure does not reflect the "cost" of fear and suffering arising from residential burglary, and the former does not include the costs of other elements of the criminal justice system. Nonetheless, the figures indicate that successful implementation of O-I can, contrary to popular belief, be a very expensive proposition for a community. Some would argue that the costs per residence for alternative forms of target hardening, such as burglar alarms or improved door and window locks, can be considerably higher, and the cost for O-I can sometimes be shared with those of community education, Block Watch, or premises security survey programs. Nevertheless, communities seeking wide citizen participation in O-I should still be aware of the potentially high total cost for achieving this objective. Also, it must be realized that the effectiveness of O-I's "protection" of participants almost certainly deteriorates over time (as decals fade or are moved, as numbers of unmarked items are acquired by participants not able to conveniently engrave them, and for many other reasons) unless measures are taken to counteract these effects. Thus, an effective O-I program will also experience continuing "maintenance" costs in addition to those for the initial recruitment and enrollment. Virtually nothing is presently known about the extent or rate of such deterioration, or about the costs of an adequate maintenance effort. The material in the following chapters, which deals with the effectiveness of O-I in deterring burglaries and in enhancing the process of re-

covering and returning stolen property, casts additional doubt on the value of substantial expenditures for O-I.

CHAPTER IV. ASSESSMENT OF THE BURGLARY DETERRENCE EFFECTS OF OPERATION IDENTIFICATION

A. Introduction

Apart from the intervention of Operation Identification or other crime prevention techniques, the burglary process can be conceptualized as a series of decisions made, and actions taken, by a burglar. With personal gain as the goal, the process begins with the decision to commit burglary from among the various legitimate sources and crimes of profit; and, when successful, ends with the disposition of stolen property to a buyer or its retention by the burglar himself. Intermediate steps taken during the commission of a burglary include:

(1) selection of a specific target from among the opportunities available (usually after a period of surveillance);

(2) entry into the target;

(3) selection of specific property items to be taken; and

(4) escape from the burglarized premise.

Previous studies and available statistics provide interesting insights into the characteristics of this and the limited effectiveness of law enforcement agencies in combating it. The most recent FBI Uniform Crime Report [46] indicates that during 1973, a total of 2,540,907 burglaries were reported in the United States -- a rate of 1,210.8 burglaries per 100,000 inhabitants. It is the most frequently reported Index crime other than larceny-theft. Compared to 1972, the nationwide burglary rate increased far more than the rates for other Index property

crimes (8.0 percent for burglary, compared to 4.7 percent for both larceny-theft and auto theft). The estimated total economic loss in 1973 resulting from all burglaries totaled $856 million, compared to $603 million due to larceny.

The Uniform Crime Report characterizes burglary as "a crime of stealth and opportunity ... committed by both amateurs and professionals ... [which] makes the detection of the perpetrator more difficult." This characterization is substantiated by statistics which show that only 18 percent of all burglaries were cleared by arrest during 1973. Of those adults arrested for burglary, 82 percent were prosecuted; of those, 49 percent were convicted of burglary, and 18 percent of a lesser offense. Juveniles constituted 55 percent of all persons apprehended for burglary.

Given the nature and magnitude of the burglary problem in the United States and in individual communities, Operation Identification programs seek to reduce the burglary rate in their target areas through: (a) deterrence of potential burglars through increased risk, by making stolen property: (1) more dangerous to possess (since it is easily identified as stolen) and (2) more difficult to dispose of (since fences will be reluctant to handle and consumers to buy such easily identified items), and (b) reduction of actual burglary by facilitating successful arrest, prosecution, and conviction.

Several activities associated with O-I are directed at these specific objectives. Those specifically related to property identification and the deterrence of burglary are the

marking of property, the posting of decals, and the inventorying of property by the recording of serial numbers. Other activities, such as education to achieve public awareness and implementation of other target-hardening procedures, though not a part of Operation Identification, must be considered due to their relationship to burglary deterrence. Therefore, the frequency with which these activities are found in conjunction with O-I projects must be included in any discussion of burglary deterrence, and their contribution to the deterrent effects claimed by O-I projects should be assessed

The remainder of this chapter identifies the major questions related to Operation Identification's burglary deterrence objective; then assesses each question, based on knowledge obtained from previous O-I evaluations, and information collected for this study from numerous O-I projects contacted in the Field and Telephone Surveys.

B. Framework of O-I Project Activities Related to Burglary Deterrence

Figure 4-1 illustrates both the burglary process described above and the deterrent effects attributed to O-I's intervention at each stage of the process. This section examines each stage of the burglary process in order to: (1) identify the specific activities comprising the O-I intervention; (2) identify the underlying assumptions upon which the deterrent effects are based; and (3) suggest the relevant data elements and measurement points for verifying these assumptions.

Burglary Process	Anticipated Effect of O-I's Intervention
Crime Selection	Decision not to commit a burglary
Target Selection	Decision not to burglarize an O-I participant
Entrance to Target	Failure to gain entrance
Item Selection	Decision not to take marked items
Escape	Increased risk of apprehension
Disposition of Stolen Property	Increased fencing difficulty and lower "market" value for marked property

Figure 4-1

CONCEPTUALIZED MODEL OF THE BURGLARY PROCESS AND THE DETERRENT EFFECTS OF OPERATION IDENTIFICATION'S INTERVENTION

1. Intervention into the Crime Selection decision. The primary O-I activity impacting on the potential criminal's decision about whether to commit a burglary, some other property crime, or no crime at all, is publicity about the project disseminated throughout the target area. Results of the Telephone Survey of 78 representative O-I projects indicate that 88.5 percent of the projects interviewed use some form of mass media to publicize their O-I program. Beyond the obvious objective of promoting citizen participation in Operation Identification, the publicity also serves to inform the potential burglar about O-I's existence and its consequences for him. As a result of this awareness, the burglar may be intimidated by both the threat of increased difficulty in disposing of stolen merchandise, and the increased risk of apprehension and conviction. to the point that he will view burglary as a high risk activity and decide not to pursue it. (The bases for these threats are discussed below in later stages of the burglary process.)

Factors affecting the extent of O-I's success in achieving a significant intervention at this stage include the project's level of participation, the influence of external variables that are not controllable by O-I projects but which may affect crime patterns -- such as other crime prevention activities and the level of unemployment -- and the extent of the displacement of types of crime. Of these, only the first is partially controllable by the O-I project. Assessment of this intervention may be affected by the level of unreported crime

in the target area which is, for the most part, uncontrollable (however, it can be estimated with victimization surveys); and also by trend and seasonality factors inherent in most periodic crime data, again partially controllable with the use of appropriate statistical techniques.

The basic assumption underlying O-I's intervention at this stage is that participation in Operation Identification will be sufficiently widespread throughout the target community to make the burglar's selection of suitable targets difficult, even if he chooses to burglarize only non-participants. The assumption is also made that this latter possibility does not always occur (i.e., O-I does deter some burglars, rather than merely displacing them to non-participants or other forms of property crime).

The assessment of O-I's intervention into the decision to commit a burglary, and the verification of the assumptions above can be made by examining the crime rates for burglary, larceny, and auto theft within the target area. Sources for this data would be the Uniform Crime Reports, records maintained by local law enforcement agencies, and periodic victimization surveys.

2. Intervention into the Target Selection decision. The selection of the target by the burglar may be affected by the presence of O-I decals posted by project participants as a warning to criminals that the valuable property at that location has been marked, and hence will be difficult to dispose of and risky to possess. The objective of O-I at this stage is to "announce" to potential burglars that a household has joined O-I.

The success of O-I intervention into the target selection process depends upon the extent to which the following implementation activities and effects occur:

- o participants properly mark their property and post decals;
- o participants who change residency remove decals from vacated premises and post new decals at their new residences; and
- o crime reports accurately reflect victim participation in O-I.

Each of these factors is at least partially controllable through the provision of adequate instructions to participants and the establishment of an accurate crime reporting system. For the assessment of this intervention in this chapter, it is assumed that the O-I project is fully and completely implemented.

The key assumption upon which this intervention is based is that burglars seek targets where the risk of detection is low and where the anticipated costs or difficulties during and after the burglary are minimal. Participation in Operation Identification, as demonstrated by highly visible decals, is assumed to affect the burglar's perception of the vulnerability or ease of entry of a premise, of his risk of detection with marked property, and the likelihood of a good return for the property stolen. Specifically, the assumptions are that the burglar, upon seeing the decals, will:

- o recognize that the resident is crime-conscious and has probably taken other preventive precautions;
- o recognize that the resident has marked his valuable property;

- o anticipate increased difficulties at the scene (i.e., entrance into premise and location of unmarked property);
- o anticipate increased difficulties in disposing of the stolen property; and
- o fear the increased likelihood of apprehension, prosecution, and conviction.

Assessment of these assumptions would require a comparative analysis of the burglary rates for both participants and non-participants within the target areas of individual O-I projects to determine if O-I participants are victimized less frequently than non-participants. The extent to which participants also utilize other target-hardening methods would also need to be measured to control for their effects on burglary rates. The perception of O-I and other crime prevention methods by burglars would also have to be determined before adequate assessment of this O-I intervention could be completed.

Information relating to the utilization of other crime prevention techniques by O-I participants, and to burglar attitudes, could best be collected through interviews with O-I participants and known burglars. Burglary rates for participants and non-participants could be computed either from data contained on police crime reports for target area residents by noting whether the victim was an O-I participant or not, by matching victim names to participant names, or through victim surveys of target area residents.

3. Intervention into the Target Entry stage. None of the property identification activities directly influence the

burglar's ability to gain entry to a selected target. Through the promotion of O-I, however, public awareness of the burglary threat and of the need for increased physical security is heightened. Through other target-hardening programs often promoted and implemented with Operation Identification, increased physical security is frequently achieved for O-I participants. The assessment of this effect is presented in Chapter VI.

4. Intervention into the Item Selection decision. Operation Identification projects seek to intervene into the burglar's selection of items to steal by marking and inventorying valuable property, and by making burglars aware that these actions have been taken. Proponents of O-I assume that commonly stolen valuable property is markable and that it will be adequately marked by project participants. It is also assumed that burglars will be discouraged from stealing marked property because of anticipated fencing difficulties previously mentioned, the probability of lower market values for such items, and a fear of apprehension with the property in their possession.

The assessment of this intervention centers on the collection of data, either from burglary reports or victimization surveys, relating to the amount and value of marked, unmarked, and unmarkable property that is stolen from O-I participants, the amount and value of marked property that is not stolen from burglarized participants, and the amounts of markable and unmarkable property stolen and not stolen from burglarized non-participants. A survey of burglars to determine

their reaction to stealing marked property would also contribute to the assessment of this O-I effect.

Any assessment of O-I's effect on item selection, however, would be limited by the following factors:

- o property markings placed in inconspicuous places;
- o property left unmarked because of its acquisition after initial participation in O-I; and
- o the reliability of burglary victims' estimates of property values.

5. Intervention into the Escape stage. Operation Identification projects usually assume that, as a result of marking property, the burglar's escape will be delayed -- this, because he will have to spend more time at the burglary scene attempting either to more carefully select the items he proposes to steal (i.e., only unmarked property) or to remove the markings from engraved property. The burglar's risk of apprehension/conviction is assumed to be increased by this additional time spent at the scene because police can easily identify marked property in his possession as stolen, and because of increased community awareness fostered by O-I and neighborhood watch programs.

Surveys of police and known burglars, and inspection of police arrest files and court files would provide the basis for assessing this intervention; although this assessment would also be limited by the factors identified in Section 4.

6. Intervention into the Stolen Property Disposition stage. The claim that Operation Identification affects the

disposition of stolen property is based on the following assumptions:

- o fences avoid purchasing marked property which can be easily linked to a specific crime (property is more identifiable because of O-I markings); and
- o private citizens and dealers in secondhand merchandise avoid purchasing marked property without assurances that it is not stolen, as a result of O-I activities to increase public awareness.

The theft of property for personal use, theft on contract, and the disposition of stolen property through interstate and international fencing operations, are factors beyond the control of local O-I projects. It would appear that the assessment of the effect of O-I's intervention into the property dispositon stage can be reasonably assessed only through the testimony of burglars and fences in order to elicit details about their experiences with marked property, and by securing the reactions of pawn dealers and private citizens who purchase secondhand merchandise.

C. Identification of the Major Assessment Questions Related to Burglary Deterrence

An assessment of the success or failure of Operation Identification's burglary deterrence component can best be made by answering the following questions:

- o Question 1: Are burglars deterred from victimizing O-I participants because of specific O-I project activities (i.e., the marking and inventorying of property and the displaying of decals)?

Determination of the impact of specific O-I activities upon the burglary process, however, requires the answers to the following questions:

- Question 2: Is the burglar's perceived and actual risk of apprehension, prosecution, and conviction increased as a result of Operation Identification?
- Question 3: Is it more difficult to dispose of marked stolen property than unmarked stolen property?
- Question 4: Is the market value of marked items less than that of comparable unmarked items?

Not surprisingly, these questions are closely related to the stated objectives of most O-I projects. An affirmative response to each would seemingly confirm the success of Operation Identification and the effectiveness of its various activities in deterring burglary. O-I programs are often financed with public monies: the Telephone Survey indicated that 26.9, 14.1, and 9.0 percent of the projects were currently funded by federal, state, and city agencies, respectively; while 29.5 percent were financed by the local police department. This fact, however, suggests that the benefit of O-I to the entire target community should also be considered. Consequently, another major question needs to be answered:

- Question 5: Do citizens not participating in Operation Identification benefit from burglary reductions similar to those experienced by O-I participants (because burglars generalize the effect of O-I to the entire target area), or do non-participants experience burglary increases due to the displacement of burglaries from O-I households?

D. Assessment of the Major Questions Related to Burglary Deterrence

This section assesses each of the major questions identified above for Operation Identification's burglary deterrence component. This assessment is based on a synthesis of relevant data available from past studies, and from data gathered during

the Telephone and Field site surveys of O-I projects. The accuracy and reliability of this information is discussed and, whenever sufficient knowledge relating to individual questions exists, a judgment is offered.

Question 1. Are burglars deterred from victimizing O-I participants because of specific O-I project activities?

The assessment of this question is presented in two parts. First, burglary rates for both participants and non-participants in several projects are reviewed to determine whether participating households have experienced burglary reductions (relative both to their burglary rates before joining and to non-participating households in the target area). This review is followed by an examination of those projects which have documented lower burglary rates for participants to determine what contribution, if any, Operation Identification played in these reductions.

The majority of Operation Identification project implementors are apparently convinced of O-I's burglary deterrent effect. Of 78 persons interviewed for the Telephone Survey, 64.1 percent thought that O-I had either been "very successful" or "somewhat successful" in deterring burglary among participants. Only 5.1 percent of the interviewees felt their programs had not been successful; the remainder did not know. Similar results have been obtained in previous surveys, such as that conducted by the National Crime Prevention Institute among its graduates and state planning agencies.[26] Of 84 respondents,

56.0 percent rated their O-I program as effective, whereas only 17.9 percent thought it had been ineffective.

Unfortunately, the judgment of many respondents to the Telephone and Field Surveys appears to be very subjective, with little supporting data available to substantiate their opinions. For example, of the 50 Telephone Survey interviewees who judged their O-I projects to be successful, only 16 kept written records of the burglary rate for participants, and only 8 kept similar records for non-participants. Obviously, more reliance must be placed on the results of those few projects for which such burglary data are available.

Burglary rates for both participants and non-participants have been computed in Denver[8] and Phoenix;[28] the results for these projects are quite encouraging. Two major shortcomings exist, however, in both projects. In the first place, participant and non-participant burglary rates for each are based on the number of O-I participants at the end of the time period of interest. To illustrate this procedure, let N denote the total number of households in the city, N_p denote the number of participants at the end of the time period of interest, B denote the city-wide burglaries during the time period, and B_p denote the number of burglaries of O-I participants. With these definitions the burglary rate for participants, R_p, is computed using the formula

$$R_p = \frac{1000\ B_p}{N_p} \text{ burglaries per 1,000 participants.}$$

Similarly, the burglary rate for non-participants, R_{np}, is computed using the formula

$$R_{np} = \frac{1000\ (B-B_p)}{(N-N_p)} \text{ burglaries per 1,000 non-participants.}$$

These estimates, however, assume that each of the N_p O-I participants was "protected" throughout the time period. If in fact the projects had enrolled new participants throughout the period, improved estimates of the number of participants could be obtained if N_p was modified to reflect only the fraction of the time period during which these new participants were protected. (B_p includes only those burglaries occurring during this part of the year.) Similarly, the number of non-participants would be adjusted to include the fractions of the time period these new enrollees were "vulnerable." By assuming that new participants were enrolled at a uniform rate during the year, adjusted burglary rates can be computed. Specifically, if n_p denotes the number of participants at the beginning of the time period, then the average number of participants during the time period of interest N_p^*, is given by

$$N_p^* = n_p + 1/2\ (N_p - n_p)$$

and the average level of non-participation is given by

$$N-N_p + 1/2\ (N_p-n_p)$$

The adjusted burglary rates for participants and non-participants then become

$$R_p^* = \frac{1000\ B_p}{N_p^*} = \frac{1000\ B_p}{n_p + 1/2\ (N_p-n_p)}$$

$$= \frac{2000\ B_p}{N_p + n_p} \text{ burglaries per 1,000 participants per}$$

time period and

$$R_{np}^{*} = \frac{1000\ (B-B_p)}{(N-N_p) + 1/2\ (N_p-n_p)}$$

$$= \frac{2000\ (B-B_p)}{2N - N_p - n_p}$$ burglaries per 1,000 non-participants per time period.

The adjusted and unadjusted burglary rates for the two projects cited above are summarized in Table 4-1. Based on the adjusted data, it still appears that O-I participants have experienced a significantly lower burglary rate than have non-participants.

The second shortcoming in the data used to compute the participant and non-participant burglary rates is the procedure by which the number of burglaries at O-I locations is determined. In both Denver and Phoenix, and in most other projects contacted, the patrol officers are relied upon to indicate victim participation in Operation Identification in the crime report, usually in the narrative portion. Some law enforcement agencies, such as the New York City Police Department, have recently modified their reporting forms to include a check-off box to indicate O-I participation. Sometimes there is a failure to accurately record victim participation in O-I, resulting in underestimation of the participant burglary rate and overestimation of the non-participant burglary rate.

Although it is difficult to estimate the extent of inaccurate recording of O-I participation, it is unlikely that it has been of a magnitude large enough to account for the burglary reductions reported for O-I participants. If, for example, the

Table 4-1

O-I PARTICIPANT AND NON-PARTICIPANT BURGLARY RATES

Period	Denver[a] Jan. 1, 1974 – Jan. 2, 1975	Phoenix[b] Jan. 1, 1974 – Dec. 31, 1974
Unadjusted participant burglary rates (burglaries per 1,000 participants)	11.34	3.78
Unadjusted non-participant burglary rates (burglaries per 1,000 non-participants)	119.71	83.95
Adjusted participant burglary rates (burglaries per 1,000 participants per year)	16.81	4.39
Adjusted non-participant burglary rates (burglaries per 1,000 non-participants per year)	113.24	82.21

a. Rates for Denver were computed using data contained in an interim evaluation report[5] and quarterly progress report[8] for the Denver Operation I.D. project.

b. Rates for Phoenix were computed using data provided by the Community Relations Division of the Phoenix Police Department.[28]

burglary rates for the Denver participant and non-participant groups were in fact identical, the crime reports for 1,827 burglaries of O-I participants must have failed to indicate the victims' participation in O-I (22,769 burglaries were recorded during the time period studied). Similarly, in Phoenix where 18,601 burglaries were reported in 1974, to obtain equal burglary rates for both groups, one has to assume that 1,951 burglary reports for O-I participants (over 10 percent of all burglary reports) were miscoded as non-participant burglaries.

As another measure of burglary deterrence among O-I participants, burglary rates have been computed in both St. Louis and Seattle for participants before and after they joined the O-I project. Again, the results suggest that a deterrent effect does exist for O-I participants. In St. Louis, for example, the participant burglary rate decreased 24.9 percent[21] -- from 4.68 burglaries per 1,000 participants per month during the two-year period before enrollment, to 3.52 burglaries per 1,000 participants per month after enrollment in Operation Identification. The St. Louis rates were determined by computer matching addresses of O-I participants to addresses of burglary victims. This method had the advantage of not depending on an indication of O-I participation in the police burglary reports. Two uncontrollable factors, however, could have affected these results. First, the addresses of participants who moved subsequent to enrollment were not updated; and secondly, the method used to code addresses in the two computer files did not identify

individual dwelling units when more than one existed at a single address (e.g., in an apartment building). Consequently, any burglary at a location where a participant resided was included as an O-I burglary. Thus, the burglary rates computed for participants both before and after enrollment in the project were inflated by an unknown amount.

In Seattle, participants were interviewed at the time of their enrollment in the Burglary Reduction Program to determine whether they had been burglarized during the previous six months. Six months later, they were again interviewed to determine burglary victimization since enrollment in the project. A rate of 52.1 burglaries per 1,000 households per six months was experienced before participation, but only 35.0 burglaries per six months after participation -- a 32.8 percent decrease.[41] The accuracy of the interview responses awaits verification by cross checking with police burglary reports. Further, all households participating in the Burglary Reduction Program, including some participants in block watch or the security survey program, but not O-I, were interviewed; no independent analysis of the burglary rates of O-I participants was done.

The need is recognized for studies such as those currently in progress in both Denver and Seattle to verify these results. However, the reported results from Denver, Phoenix, St. Louis, and Seattle, plus the subjective belief in O-I's success in deterring burglars expressed by project implementors who were interviewed for both the Field and Telephone surveys,

suggests that some burglary reductions have occurred among participants in Operation Identification. The next question to be answered is: what specific contributions did Operation Identification make to these reductions?

In San Jose, an evaluation design was instituted to minimize the confounding effects of other target-hardening programs; O-I promotional efforts were used to saturate a small target area with O-I information, while other crime prevention methods were not promoted at all. Burglary rates, computed for both O-I and non-O-I households in the target area, were found to be four times greater for households not exhibiting decals.[34] Still the results were not considered definitive since self-initiated burglary precautions (better locks, watchdogs, improved lighting) could not be controlled. In addition, approximately 43 percent of the O-I locations in the target area had also received a residential security survey.[37]

The reaction of burglars to Operation Identification, independent of other crime prevention activities, was investigated in Illinois where 69 convicted property offenders were asked to assess O-I as a burglary preventive technique. Only 7.2 percent of the burglars thought that O-I would be effective in deterring property crimes; 79.6 percent felt it would be ineffective in preventing burglary, although 43.4 percent thought it might affect property recovery or their actions at the burglary scene, or both.

The evidence above suggests that Operation Identification

may not be an effective burglary prevention device when implemented by itself and that sole reliance on it for such prevention may not be advisable. If the 31.9 percent of the burglars interviewed in Illinois who rated O-I as "a waste of time" are correct, a redirecting of the efforts and resources currently allocated to Operation Identification projects is needed.

One explanation for the burglary reductions that have been reported for O-I participants is that Operation Identification is usually only one of several crime prevention programs available in the areas where it is implemented. A study of crime prevention programs in cities with populations greater than 100,000 reported that 49 or 55 (89.1 percent) cities with property identification programs also provided security checks.[3] Also, 35 of the cities (63.6 percent) had programs promoting alarm systems, 31 (56.4 percent) had programs promoting the use of better locking devices, and police departments in 38 of the cities (69.1 percent) had programs promoting improved exterior lighting. Other studies have indicated that participants in Operation Identification often take additional precautions against burglary. In Denver, for example, telephone survey personnel found that the 115 O-I participants surveyed were generally aware of the burglary threat and as a result had taken other precautions beyond Operation Identification.[6] In St. Louis, a similar survey found that 34 of 66 responding participants had also taken other crime prevention precautions.[22] From an evaluation point of the view, however, the adoption of several security precautions by

O-I participants makes it difficult to attribute the significant burglary decreases among those participants solely to the direct effects of O-I.

As part of the Telephone Survey of O-I projects, implementors were asked if the project was operated separately, or as part of a larger scope crime prevention program. In addition, interviewees who indicated that their program was within a larger one, identified the other crime prevention programs existing in conjunction with O-I. The numbers of projects operating separately, as part of a larger program, and in conjunction with each of these other programs (security surveys, block watch, and citizen patrols), and having various levels of success in deterring burglary among participants (as judged by interviewees), are shown in Table 4-2. Because some projects were part of a larger program utilizing two or more of these other programs, the sum of the numbers of O-I projects with security surveys (32), block watch (14), and citizen patrols (4) exceeds the number of projects which were part of a larger crime prevention program (39). While no significant differences in success exist among projects employing the other crime prevention projects with O-I, it is interesting to note that no O-I projects operated as part of a larger crime prevention program were judged by the implementors as unsuccessful. By contrast, implementors in 10.3 percent of the O-I projects operating as separate programs judged the projects as unsuccessful.

Table 4-3 presents a similar summary for the 21 "special cases" that were also contacted for the Telephone Survey

Table 4-2

SUCCESS OF REPRESENTATIVE O-I PROJECTS IN BURGLARY DETERRENCE AMONG O-I PARTICIPANTS AS A FUNCTION OF CONCURRENT CRIME PREVENTION PROGRAMS[a]

Success of O-I Project in Deterring Burglary	Very Successful	Somewhat Successful	Not Successful	Don't Know	Total
Number of O-I Projects operated as a separate program	16 (41.0%)	3 (7.7%)	4 (10.3%)	16 (41.0%)	39
Number of O-I projects operated as part of a larger scope program	22 (56.4%)	9 (23.1%)	0 (0.0%)	8 (20.5%)	39
Number of O-I projects operated in conjunction with programs providing security surveys	16 (50.0%)	9 (28.1%)	0 (0.0%)	7 (21.9%)	32
Number of O-I projects operated in conjunction with a block watch program	8 (57.1%)	4 (28.6%)	0 (0.0%)	2 (14.3%)	14
Number of O-I projects operated in conjunction with programs of citizen patrols	2 (50.0%)	1 (25.0%)	0 (0.0%)	1 (25.0%)	4

[a]Source: Telephone Survey of 78 representative Operation Identification projects.

Table 4-3

SUCCESS OF SPECIAL O-I PROJECTS IN BURGLARY DETERRENCE AMONG O-I PARTICIPANTS AS A FUNCTION OF CONCURRENT CRIME PREVENTION PROGRAMS[a]

	Success of O-I Project in Deterring Burglary				
	Very Successful	Somewhat Successful	Not Successful	Don't Know	Total
Number of O-I projects operated as a separate program	5 (55.6%)	2 (22.2%)	0 (0.0%)	2 (22.2%)	9
Number of O-I projects operated as part of a larger scope program	10 (83.3%)	1 (8.3%)	1 (8.3%)	0 (0.0%)	12
Number of O-I projects operated in conjunction with programs providing security surveys	6 (75.0%)	1 (12.5%)	1 (12.5%)	0 (0.0%)	8
Number of O-I projects operated in conjunction with a block watch program	6 (85.7%)	1 (14.3%)	0 (0.0%)	0 (0.0%)	7
Number of O-I projects operated in conjunction with programs of citizen patrols	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1

[a]Source: Telephone Survey of 21 special cases.

(generally cities with populations in excess of 500,000). For these projects, no significant differences were found in the success levels of burglary deterrence between projects operated separately and projects operated as part of a larger crime prevention program.

Question 2. Is the burglar's perceived and actual risk of apprehension, prosecution, and conviction increased as a result of Operation Identification?

The reported number of burglars actually apprehended as a result of Operation Identification is quite limited due to low participation levels, low victimization rates among O-I participants, and low clearance rates for burglary in general. None of the project personnel contacted during the Telephone Survey indicated that they kept any records about the numbers of apprehensions, prosecutions, or convictions due to O-I. Consequently, any assessment of this question must be based on personal interviews and past studies of arrest patterns.

Scarr's analysis of burglary patterns in the Washington, D. C., area indicates that most burglary arrests are the result of offender carelessness or the use of informants by law enforcement agencies[38]. An analysis of burglary arrests during the five-month period January 1 through May 31, 1974 in Seattle produced similar results. Of 174 arrests, 146 were made for reasons unrelated to specific O-I activities (e.g., on the scene arrests, informants, and fingerprints).[41] Only 28 arrests were made for the types of activities in which O-I may be important, such as: "near scene searches", "traffic

stops [with] items in view of officers", and "suspicious activities [such as] carrying bulky items".

Field Survey interviews with persons involved in prosecuting burglary cases suggest that O-I has more potential as an aid to the police in apprehending suspects and obtaining warrants than as an aid to prosecution. Little current or anticipated utilization of O-I marked property in the judicial process was indicated, primarily because many arrests for burglary are made at the scene of the crime. Thus, it is unnecessary for the burglar to possess marked items in order to establish that he is the offender. A second factor is the prevalence of plea bargaining which bypasses the trial stage and the need for evidence. In New York, for example, 16 apprehensions were reported in which marked property was found in the suspect's possession, and in each case the suspect was eventually convicted. In 13 of the cases, however, the suspect was arrested at the burglary scene. The role which the presence of marked property played in the final verdicts in these cases is unknown.

The burglar's perceived risk of apprehension is reflected in his reaction when confronted with targets "protected" by O-I and other target-hardening devices. Reppetto's study of residential crime included interviews of convicted burglars on probation or in detention in the Boston area to determine the effectiveness of various burglary prevention techniques. Of the respondents (always less than 100 for each question), 88 percent indicated that a full-time occupant of a dwelling would or might

prevent them from victimizing that premise.[30] Similarly, 73 percent of the respondents indicated that they might be deterred by an alarm, 62 percent by neighbors checking, 61 percent by a dog, 51 percent by police and security patrols, 38 percent by strong locks, and 33 percent by good lighting. In contrast, only 26.1 percent of 69 convicted burglars interviewed during an evaluation of Operation Identification in Illinois claimed they would be deterred from entering an O-I marked premise.[18]

As both reports point out, the validity of the results were limited by small sample sizes, possible bias introduced by the sample selection process, and the reliability of the interviewees' responses. Nevertheless, the implication is clear that any increased perception by burglars about the risk of apprehension at O-I premises is more likely the result of target-hardening procedures other than those directly associated with Operation Identification.

A general uncertainty about any success in this area is expressed by project implementors. For example, 51.3 percent of the projects contacted in the Telephone Survey were unable to judge their success in increasing apprehensions, and 56.4 percent were unable to indicate success in increasing the convictions of apprehended burglars. This uncertainty, and the lack of data about the apprehension risk, prevent any definitive assessment of this question now. The discussion above suggests, however, that neither the perceived nor actual risk of apprehension, prosecution, or conviction is affected if the burglary target is

an O-I premise.

Question 3. Is marked stolen property more difficult to dispose of than comparable unmarked property?

The assessment of this question requires the synthesis of information obtained, first through personal contact during the Field Survey with both O-I project implementors and police department units involved in property disposition (e.g., anti-fencing and pawn shop details); and second, through interviews with known property offenders that have been conducted by other evaluators of Operation Identification. Finally, the effect of actual or anticipated difficulties in the disposition of stolen property upon the burglary process may be reflected by the relative amounts of marked and unmarked property that are stolen from O-I participants.

Some police department personnel not directly associated with an Operation Identification project had mixed reactions regarding the effectiveness of O-I's intervention into the existing system for property disposition. Most police officers, however, felt that the rapid movement of stolen property to other police jurisdictions, the ease with which burglars can remove or alter O-I markings, and the willingness of the public to "buy anything at the right price", made the disposition of stolen property relatively easy, whether marked or not.

Interviews with 69 convicted burglars in Illinois reflected a similar attitude; 44.9 percent felt that marked property would be more difficult to market in some or all cases. Only 17.4 percent of the interviewees, however, indicated that they might

be less likely to steal such property.[18]

In Denver, considerable data have been collected on the number and value of marked property, both stolen and not stolen, from 372 burglarized O-I premises. When these burglaries occurred, 2,990 marked items valued at $398,325 were at the scene and available to the burglar; yet only 246 of these items, valued at $46,789, were actually stolen.[8] The results led evaluators of the Denver O-I project to conclude that burglars do indeed avoid marked items especially since items marked by project staff are limited to those most frequently stolen by burglars in Denver.

The validity of the results of the interviews with burglars is limited by the small number questioned. Similarly, the reliability of the interviewee responses obtained by the Telephone Survey regarding project success in making stolen property more difficult to fence is questionable. Sixty-six respondents (71.8 percent) claimed success in this area; of these, however, only 11 had written records of the amount of marked and unmarked property that had been stolen from participants to support any conclusion that burglars were avoiding identifiable property.

Operation Identification's effect on the disposition of stolen property appears, at best, to make such disposition more difficult, but certainly not impossible. Additional evaluation is required, however, to determine if O-I alone or in combination with other modified police procedures (e.g., stricter control of pawn shop dealers) and public education programs designed to minimize property disposition through street corner sales is an

intervention activity which can effectively disrupt or hinder the disposition of stolen property.

Question 4. Is the market value of marked items less than that of comparable unmarked items?

Other than interviews of convicted burglars in Illinois which indicated that 44.9 percent thought that marking property would decrease its market value in some cases,[18] virtually no information is currently available which can be used to answer this question. The question is important enough, however, to warrant further evaluation, if only to determine the effect that property markings have on the legitimate resale of personal property by owners. In addition, the answer to this question has important implications for the evaluation of other O-I objectives such as deterring the theft of marked property, since a general decrease in the market value of marked stolen property might conceivably lead a burglar to increase the volume of property he steals in order to maintain a constant profit margin.

Question 5. Do citizens not participating in Operation Identification benefit from burglary reductions similar to those experienced by O-I participants (because burglars generalize the effect of O-I to the entire target area), or do non-participants experience burglary increases due to the displacement of burglaries from O-I households?

The community-wide benefit of Operation Identification has been addressed in other O-I evaluations, primarily by comparing the burglary rates in a project's target area before and after O-I implementation, or by comparing the burglary rates in target and control areas during the same time period. To date, no consistent evidence of a community-wide burglary reduction primarily attributable to the direct effects of Operation Identification has been found. However, dramatic city-wide decreases in the burglary rate in New Orleans,[25] Newton, Massachusetts,[4] and St. Peterburg, Florida[32] might suggest such an effect. Further examination of these data, however, raises doubts. In St. Petersburg, for example, where monthly decreases of 6.4, 3.0, 1.0, and 5.2 percent in the city-wide burglary rate during the first four months of program operation have been offered as evidence of the program's success, only 1,000 of the city's 97,000 households were participating in Operation Identification. It is difficult to believe that participation by little more than one percent of the households could account for five and six percent reductions in the overall burglary rate.

Two other questions must also be answered before reductions in city-wide burglary rates can be accepted as proof of O-I success. First, how do city-wide decreases compare with the expected burglary rate, based on previous burglary trends? and, secondly, has any crime-type displacement (from burglary to other property crimes) or geographic displacement (from the target area to other areas or jurisdictions) occurred?

Thus far, no O-I evaluation apparently has used trend analysis techniques to determine the significance of changes in burglary trends. Displacement effects have been the subject of few previous investigations. In Seattle, the extent of displacement from burglary to robbery, shoplifting, auto theft, and various types of larceny was tested for in each police sector.[41]

Although statistically significant changes (from burglary to other crimes) were found in some sectors, no consistent pattern emerged, and the evaluators concluded that crime-type displacement had not occurred as a result of Seattle's Burglary Reduction Program. Similarly, no evidence was found to suggest any significant level of displacement from residential to other types of burglary targets.

A study of the relationship between geographic crime displacement and the $20 million High Impact Anti-Crime Program was conducted in St. Louis.[23] That study, not limited to burglary crimes, concluded that:

- o no permanent geographic displacement of crime occurred to adjacent jurisdictions; and
- o a temporary displacement of burglary did occur soon after the program was initiated.

Although Operation Identification comprised only a relatively small part of the St. Louis Impact Program, the results of the displacement study do suggest the existence of an initial displacement effect related to anti-crime programs such as O-I.

In Illinois, burglary rates in 255 communities which had implemented Operation Identification projects were compared with burglary rates in 389 non-O-I communities. The rates were divided into the following categories:

- o total burglary,
- o burglary involving markable goods,
- o daytime residential burglary,

- o residential burglary involving markable goods, and
- o daytime residential burglary involving markable goods.

No significant differences in burglary rates were found between participating and non-participating communities for any of the categories.[18]

In Denver and St. Louis, as discussed above, the burglary rates for O-I participants were significantly decreased; yet, during the one-year period after Operation Identification was implemented, the city-wide residential burglary rate increased by 3.0 percent in Denver and by 9.1 percent in St. Louis. One possible explanation for such results is that the city-wide burglary rates would have increased by even greater amounts if O-I programs had not existed. An alternate interpretation is that the burglaries that were deterred from O-I premises were merely displaced to other "unprotected" locations.

This latter possibility has been investigated in some previous O-I evaluations. Displacement of burglary from participants to their non-participating neighbors was researched in the St. Louis telephone survey of both participants and non-participants.[22] Interviewees participating in O-I were asked if their neighbors had been burglarized since their participation in O-I; non-participants were asked if their neighbors had been burglarized during the previous year. No significant difference was detected in the frequency with which participants' neighbors were burglarized compared to the rate for neighbors of non-participants. It was concluded that no displacement had occurred. In Denver,

on the other hand, displacement to other targets was advanced as a likely interpretation of the continued increase in city-wide burglary.[5]

Another explanation of the absence of burglary reductions on a community-wide level is that, with the relatively low current levels of participation in Operation Identification projects, no community-wide effect can reasonably be expected but that, as participation levels increase, so will the scope of O-I's effectiveness. Such an expectation can neither be supported nor denied on the basis of present knowledge. Low participation rates were affirmed by the results of the Telephone Survey; only 15.4 percent of the projects for which a participation level could be determined had enrolled more than 10 percent of the households in the target community. An interesting exception was found in one small neighborhood of San Antonio, where 97.8 percent of the households were enrolled in the O-I project.[33] There, burglaries decreased from 86 in the year preceding O-I's implementation to only four in the year following. At this level of participation, however, the decrease more appropriately represents an example of burglary deterrence among participants.

In St. Louis, the percentage increases in burglary relative to the city-wide trend from 1972 to 1973 were correlated with the increase in participation during the same year for each of the city's 126 census tracts. The conclusion reached was that "there is no discernible tendency for census tracts with above

average participation levels to have below average burglary rates."[22]

The expected burglary deterrence effects of O-I for target areas with participation levels greater than 50 percent can only be speculated about at this time. Theories regarding the importance of participation level to the effectiveness of any crime prevention strategy such as O-I, however, have been advanced. Riccio has proposed that strategies which seek to prevent crime by blocking potential targets are effective only when the number of unblocked opportunities becomes less than the number of targets demanded by the persons perpetrating the crime.[31] Applying this theory to Operation Identification, and assuming that O-I is 100 percent effective in deterring burglary, the levels of participation that would be required to induce community-wide reductions in several O-I communities have been estimated, using the following data:

- o 1973 burglary totals, to estimate the future yearly demand for burglary opportunities (an underestimation since unreported burglaries are not included);
- o 1970 census data on the number of total housing units, to estimate the total number of available burglary targets (an underestimation since the data do not include non-residential targets and new housing);

  and

- o participation data obtained during the Telephone Survey to estimate the current number of "blocked" targets (possibly an underestimation because of unregistered participants).

Assuming that the rate of enrollments experienced to date

will be maintained (although the rate probably will decrease), the length of time required to achieve effective participation levels can be estimated. The results of these computations for a sample of cities of various size are summarized in Table 4-4. Many projects, undoubtedly, would find it very difficult to sustain community support and interest in O-I for the time periods indicated in the Table.

Riccio further hypothesizes that for any level of participation, the amount of crime prevention (number of crimes deterred) is directly proportional to the number of opportunities demanded, and inversely proportional to the number of unblocked targets. Using these relationships and the estimates above, it is possible to calculate the percentage increase in crime prevention if, for example, the current number of participants in each city was doubled. These increases are summarized in Table 4-5 for selected cities.

From these results, it is apparent that at current participation levels the increased community benefit, as measured by crimes deterred, would not be commensurate with the increased effort required to achieve this effect (i.e., doubling the participation in O-I generally would not double its crime preventive effectiveness). This conclusion must be qualified, however, since it is based on an unsubstantiated theory of crime prevention which assumes the complete effectiveness of the crime prevention strategy being used. Furthermore, it must be stressed that the conclusion applies only to the current participation

Table 4-4

O-I PARTICIPATION LEVELS REQUIRED TO PRODUCE A SIGNIFICANT LEVEL OF BURGLARY PREVENTION

	Households[a]	Demand for Burglary Targets[b]	Effective Participation Level[c]	Current O-I Participation	Project Age in Months[d]	Years Required to Achieve Effective Level[e]
	(H)	(D)	(E)	(P)	(A)	(Y)
Abilene, Tex.	30,702	761	29,941	600	11	44.8
Bloomington, Ill.	14,459	452	14,007	600	36	67.0
Chicago, Ill.	1,208,771	44,753	1,164,018	12,590	19	144.8
Cincinnati, Ohio	172,551	10,337	162,214	30,000	31	11.4
Denver, Colo.	193,765	15,067	178,698	33,158	24	8.8
Detroit, Mich.	1,255,489	36,537	1,218,952	14,630	45	308.7
Hagerstown, Md.	13,597	357	13,240	200	30	163.0
Hartford, Conn.	58,495	2,915	55,580	4,000	24	25.8
New Orleans, La.	207,367	9,224	198,143	5,000	40	128.8
New York, N. Y.	2,924,384	149,311	2,775,073	26,000	24	211.5
Owensboro, Ky.	16,929	353	16,576	1,200	12	12.8
Phoenix, Ariz.	195,036	19,328	175,708	33,325	36	12.8
St. Louis, Mo.	238,435	19,033	219,402	27,000	28	16.6
Washington, D. C.	278,444	11,801	266,643	2,500	36	317.0

[a]Housing units from 1970 Census.
[b]Burglary total reported in the FBI's Uniform Crime Report for 1973 was used to estimate demand for burglary targets.
[c]Participation level such that the demand for burglary targets equals the number of non-participants.
[d]Based on information received during the Telephone Survey.
[e]Calculated using the formula

$$Y = \frac{E - P}{12P/A} = \frac{H - D - P}{12P/A} = \frac{A\,(H - D - P)}{12P}$$

Table 4-5

PERCENTAGE INCREASE IN CRIME PREVENTION ACHIEVED BY DOUBLING CURRENT PARTICIPATION IN O-I

	Current Participation Level (Percent of Total Housing Units)	Percentage Increase in Crime Prevention if Participation is Doubled
Abilene, Tex.	2.0	4.1
Bloomington, Ill.	4.2	4.5
Chicago, Ill.	1.0	1.1
Cincinnati, Ohio	17.4	26.7
Denver, Colo.	17.1	26.0
Detroit, Mich.	1.2	1.2
Hagerstown, Md.	1.5	1.5
Hartford, Conn.	6.8	7.9
New Orleans, La.	2.4	2.5
New York, N. Y.	0.9	0.9
Owensboro, Ky.	7.1	8.3
Phoenix, Ariz.	17.1	26.0
St. Louis, Mo.	11.3	14.6
Washington, D. C.	0.9	0.9

level of each project shown (no project exceeded 30 percent participation). According to the crime prevention theory used to construct Table 4-5, once participation reached one-third of the community, doubling participation will increase crime prevention effectiveness by 100 percent or more. Nevertheless, present knowledge indicates that considerable amounts of resources would be required to reach even the one-third level of participation.

Additional evaluation is needed of the displacement effects of O-I, and further analysis should be made to either substantiate or refute the claim that while community-wide burglary rates may not have decreased due to O-I, the rate of increase has been diminished.

Results such as these, together with those discussed above, suggest that Operation Identification has not only been ineffective in reducing burglary, except among participants, but that without the expenditure of large amounts of time and effort to achieve larger participation rates, there appears to be little potential for community-wide burglary reductions.

CHAPTER V. ASSESSMENT OF THE PROPERTY RECOVERY EFFECTS OF OPERATION IDENTIFICATION

A. Introduction

A significant increase in the amount of stolen property returned to its rightful owner is another major benefit frequently used to promote Operation Identification. The cogency of this benefit is evidenced by its identification as a project objective in most O-I grant applications, as a recruitment argument to future participants in O-I brochures, and as a specific project effect to be measured in almost all proposed O-I evaluations. All of the O-I projects contacted for the Telephone Survey indicated that property recovery was an important objective of O-I; in fact, 14 percent felt it was the "most important."

Unlike the burglary deterrence objective, however, increased property recovery and return induced by O-I has not been well-monitored or evaluated. In this chapter, what little evidence does exist is presented. Important factors and assumptions about O-I's ability to improve the property recovery process are posed as questions, and then assessed on the basis of results of the Telephone and Field surveys, general knowledge, and the findings of previous investigations into the efficacy of O-I.

In the discussions to follow "recovery" is used to indicate property, whether stolen or lost, that is found, confiscated or retrieved by the police. "Returned" is used to describe

property, recovered by the police, for which the owner can be identified and located.

B. The Property Recovery Framework

Table 5-1 presents a summary of the property recovery process and O-I's intervention and effect upon that process. The four basic elements in the process are: (1) a burglary is attempted, (2) the burglary is successful, and the owner describes the stolen property to the police, (3) the property is identified and recovered by police, and (4) the property is traced and returned to the owner. Each of these steps is described in greater detail below.

1. Burglary attempt. Some property may be "recovered" when a burglar is apprehended either at or near the scene of the crime. (In this chapter, a burglary is considered successful only if the burglar escapes from the immediate scene of the crime with the stolen property.) O-I may cause apprehension of more burglars and thus facilitate recovering more property. The recovery occurs because the burglar is recognized as such and immediately apprehended, and not because of the O-I markings on the property he has stolen. An assessment of O-I's effect upon this type of apprehension has been presented in Chapter IV.

2. Owner describes property to the police. In the remainder of this chapter, it is assumed that the burglar has successfully escaped from the scene and that the eventual recovery of the stolen property is dependent upon the ability of

Table 5-1

INTERVENTION OF OPERATION IDENTIFICATION INTO THE PROPERTY RECOVERY PROCESS

Property Recovery Process	O-I Intervention	Property Recovery Effect
1. Burglary attempt	1. O-I participants use other target-hardening procedures O-I markings on property Increased neighbor awareness	1. Burglar is apprehended "on scene," property is recovered immediately
2. Burglary completed, victim describes stolen property to police	2. O-I identifier on valuable property Inventory list of property	2. O-I participants provide better descriptions of the stolen property
3. Property is identified as stolen and recovered	3. O-I marking on property Burglary report	3. Burglar is apprehended in transit Fence is apprehended Property is found
4. Property is returned to owner	4. O-I marking on property Participant registration list Use of existing files	4. Owner is found

the police to identify the property as stolen. Once the burglary has been discovered, the victim reports the crime to the police, who then solicit from the owner as accurate a description of each item as possible. Ideally, each stolen item is described in terms of type, brand, model, year, color, and serial number. In addition, the owner may also be able to describe other distinguishing features, such as scratches and nicks in the property. Occasionally, a victim may even provide the police with a photograph of the property. Obviously, the purpose of fully describing each stolen item to the police is to make it easier for them to identify the property as stolen and, if recovered, to return it to the victim.

Ideally, participation in O-I enables victims to describe their stolen property to the police more accurately in two ways. First, the victim is able to provide the police with an identifier which is an additional distinguishing characteristic of the property. Second, by having inventoried his property, the victim is able to provide more descriptive information about both marked and unmarked property that has been stolen. Since a property inventory list should include the type, brand name, model and serial numbers for all of the valuable property on a premise, theoretically, victimized participants are able to provide the police with accurate property descriptions directly from the inventory list.

A basic assumption is that O-I information will, in fact, become part of the burglary report. However, partici-

pants sometimes fail to give identifying numbers and other descriptions to the police, especially if they do not remember that the information exists, or do not believe that it is important enough to report. Possibly, too, the police officer filling out the burglary report may fail to ask for, or to record, the specific O-I information.

It is also assumed that the most frequently stolen property can be adequately marked. In fact, however, many valuable items, such as jewelry and clothing, are not easily marked, and are frequently stolen. In addition, some O-I participants fail even to mark many easily markable items. If a substantial fraction of all commonly stolen items are not "O-I markable", then the potential of O-I participants to provide better descriptions of their stolen property to the police may be severely limited.

One method for determining how well O-I has improved descriptions of stolen property by participants would be to sample burglary reports for both O-I participants and non-participants. Recorded for each group would be the fraction of the value of all stolen items that were identified with O-I numbers, brand name, model and serial numbers, and other important item attributes. Comparing the burglary reports for both participants and non-participants in order to determine the property attributes recorded should indicate the extent, if any, to which better property descriptions are provided by O-I participants.

3. Property recovery. As indicated in Table 5-1, once a burglar has left the crime scene, there are two principle ways in which property is recovered. First, the stolen property may be recovered either from burglars who are transporting it, or from fences and pawn brokers who receive it. The critical element is the ability of the police to identify the property as stolen. For example, when a police officer stops and questions a person, the officer's check of any identifying numbers on property in the suspect's possession may confirm that the property is stolen. If the officer is unable to quickly trace an O-I number and determine that the property is stolen, however, he may release the suspect. Similarly, unless property found in a pawn shop can be identified as stolen, it may be sold or redeemed before recovery by the police can occur.

The second method of recovery occurs when property is recovered by the police without any prior indication that it was stolen (e.g., property abandoned or recovered in connection with crimes other than burglary). In these cases, identifying the property as stolen is not critical to its recovery by police, but is important for tracing its owner.

The key intervention mechanism of Operation Identification into the recovery of stolen property is the ability to quickly identify property as stolen. In the simplest case, the engraved number may provide the police with an immediate clue as to whether a particular item is stolen. If a suspect

stopped for questioning cannot produce identification which matches the identifier on an item, further checking may determine that the property is stolen. Besides increasing the recovery of marked items, more unmarked stolen property may also be recovered because of O-I. If a suspect possesses unmarked property, in addition to marked property which has been identified as stolen, the latter can be confiscated on suspicion that it is also stolen.

An important factor which affects the ability of the police to recover O-I marked property is the amount of stolen property that is transported to other geographic jurisdictions where the O-I identifiers cannot be easily traced. This difficulty occurs whenever participants use names, addresses, telephone numbers, and other identifiers which, for the most part, are only locally traceable.

Increased recovery rates due to O-I can be measured by identifying stolen property which would not have been recovered without O-I; however, this is a very difficult task. One of the most perplexing problems is how to determine accurately how many burglary apprehensions would have occurred if the victim had not been an O-I participant. For such cases, the value of all the property recovered would be credited as a benefit of O-I. The usefulness of O-I in increasing the recovery of property reported stolen can be examined by comparing the relative amounts of marked and unmarked property which are recovered. Here, unmarked stolen property confiscated

with marked property would be included as an O-I benefit since O-I was directly responsible for the recovery of these items.

4. Tracing and returning property. When a burglar is apprehended at the scene of the crime, recovery of any stolen property occurs immediately and no tracing of the owner to return the property is usually necessary. Tracing is required, however, for the two recovery procedures identified above in Section 3 (i.e., for property identified as stolen and confiscated by police, and for property found or retrieved by police with no evidence that it is stolen). In the first, tracing the O-I number on the property enables the police to verify that the property has, in fact, been stolen and to return the property to its owner (i.e., the tracing occurs before the property is actually recovered). In the second, property is first recovered by the police, who then use the O-I number to identify the owner and return it to him.

The basic components in tracing property owners are:

(1) an adequate description of the stolen property;

(2) a pre-existing record or list which links property descriptions to owners; and,

(3) a mechanism for using property descriptions with an existing list to find the owner.

The first component has already been discussed above; O-I participants ideally provide better descriptions of their stolen property. O-I can also improve property return by adding additional identifying information to existing files,

or by creating new files which link property descriptions to owners. Return of property is also improved when O-I identifiers improve the linkage between property descriptions and an existing file.

The most common example of the addition of O-I information to an existing file is the recording of O-I identifiers in burglary reports. Some O-I projects, such as New York City's, have created new files which contain the identifying numbers used by each registered O-I participant. Others, like the Denver project, maintain both a participant file and a copy of each participant's inventory list. Many projects which recommend the driver's license number (DLN) make use of state DLN files.

The existence of a list of identifiers and the corresponding users does not, by itself, guarantee successful tracing; the kinds and use of O-I identifiers can also influence the extent to which O-I tracing is successful. Several important assumptions about O-I identifiers are:

- o Identifiers will be unique to individuals (i.e., they will not be used by more than one person);
- o Identifiers will be readily available to all persons;
- o Identifiers will be permanent for individuals;
- o Identifiers on O-I marked property will not be altered or removed;
- o Identifiers will be placed in a conspicuous location on property;

- o O-I identifiers will be recognized as such by the police; and,
- o Traced identifiers will lead to current information about users (e.g., the current addresses of the users).

The next-to-last assumption is related to the difficulty police in other jurisdictions often experience in tracing O-I identifiers to owners. When the police recover O-I marked property, they must first recognize the O-I markings and associate them with an accessible mechanism for tracing owners (e.g., a search of driver's license numbers).

The key points within the property recovery process described in Table 5-1 for measuring the increased return of property due to O-I are the recovery and return steps. The total value of both marked and unmarked property recovered and the proportion of each returned by the police can be used to compute the ratios of the value of returned to recovered property. These measures can then be used to test the hypothesis that the rate of return for O-I marked property is greater than the rate of return for unmarked property.

C. Questions to be Assessed

Listed below are questions, based on the important assumptions and elements of the property recovery framework described in Table 5-1, which suggest the types of information needed to determine O-I's ability to improve both property recovery and return.

Four major questions and several important subquestions are addressed in this assessment. The answers to these questions may be useful in providing insights into the success or failure of the property recovery effects of O-I. The major questions and subquestions are:

1. What fraction of commonly stolen items can be adequately marked?

2. What fraction of commonly stolen markable items do participants mark?

3. Is stolen O-I marked property more likely to be recovered by police than stolen unmarked property?

   a. Is the risk of burglar apprehension greater for burglaries at O-I residences than at non-O-I residences? (This has been addressed in previous chapter.)
   b. What fraction of O-I identifiers can be traced to owners?
   c. What percent of stolen O-I marked property is transported to areas where the identifier cannot be traced?
   d. Are better property descriptions obtained from O-I participants who have been burglarized than from non-participants who have been burglarized?
   e. Does O-I information become part of the burglary report?
   f. Are O-I marks on property altered or removed?
   g. Are O-I marks found and recognized by police officers who examine marked property?
   h. Do police departments have mechanisms for tracing O-I identifiers?

4. Is recovered O-I marked property more likely to be returned to owners than recovered unmarked property?

   (Subquestions 3c through 3h also apply to Question 4.)

D. Assessment of the Main Questions about Property Recovery

This section assesses each of the foregoing questions, using information collected from the Telephone and Field Surveys and from other research.

Although improved property recovery and return due to O-I have been claimed and have received considerable publicity, little substantive evidence exists which provides conclusive answers to the questions posed above. In part this is due to the small number of reported burglaries involving O-I residences. Few marked items, apparently, have been stolen, and the number of those that have been recovered and returned by the police is miniscule. Also contributing to this lack of evidence is the fact that most police departments surveyed maintain few, if any, written records about specific cases of O-I property recovery and return. Lack of police manpower and the frequent comment by project implementors that property recovery and return do not warrant evaluation were the primary reasons given in the Telephone Survey for not documenting property recovery results.

Evaluations completed by other researchers into the property recovery effects of O-I have been quite limited, and even tentative answers to most of the questions cited above are missing. In fact, so little evidence is available for questions 2, 3a, 3b, 3c, 3e, 3f and 3g, that they can be immediately identified as knowledge gaps and will not be

discussed further. For the remainding questions, the available evidence is examined below.

Question 1. What fraction of commonly stolen items can be adequately marked?

Some studies analyzing the types of property commonly stolen in burglaries indicate that only one-half of all commonly stolen items are markable. Analysis of data contained in Scarr's study[38] of burglary patterns shows that during 1968 and 1969, 46.4 and 43.1 percent respectively of the property stolen in Washington, D. C. was unmarkable. For the same time period in Fairfax County, Virginia, the percent of unmarkable property were 59.2 and 59.4 percent; and in Prince George's County 53.4 and 50.0. Analysis of data in a Sacramento, California study of the kinds of property stolen in 200 residential burglaries shows that approximately 37 percent of the items taken were unmarkable.[29] All the foregoing percentages were calculated using the definitions of "markable' and "unmarkable" presented in Mattick's evaluation of the statewide O-I program in Illinois.[18]

Unfortunately, none of these studies investigated the relative value of commonly stolen property; such data would be a better measure of the coverage which O-I can provide.

Very little is known about the effectiveness of other types of marking schemes, most notably, the use of a special ink which only becomes visible under an ultraviolet light. This method, first promoted commercially in 1974 as the "Brink's

Security Marking System" by the Sanford Corporation, has been adopted as a supplement to engraving by a few O-I projects. Although no evaluations of this alternative have been attempted, possible drawbacks of the system are:

(1) since the markings are invisible, all recovered property must be examined under an untraviolet light to detect the marks;

(2) few property recovery units have or use ultraviolet lights; and

(3) the markings are easily removed or altered (e.g., dry cleaning removes the ink from clothing).

Question 3. Is stolen O-I marked property more likely to be recovered by the police than stolen unmarked property?

Several evaluations which monitored the amount of O-I property recovered by police departments[1, 2, 7, 21] found that very little O-I marked property was stolen or recovered. Both the O-I staff members and property recovery personnel interviewed during the Field Survey reported the same finding. Those few instances of known property recovery have not as yet provided sufficient evidence with which to test the increased likelihood of recovering O-I marked property, even though O-I has not substantially increased the amount of property recovered.

Question 3d. Are better property descriptions obtained from burglarized O-I participants than from burglarized non-participants?

A study of burglary reports in six large California jurisdictions showed that victims could describe their stolen property by serial numbers, unique inscriptions, or markings

in only 5.1 percent of the cases (399 of 7,763).[2] These burglary reports represented samples taken from communities where O-I had been implemented, although the percentage of the burglaries in which O-I participants were victimized was not given. Further, analysis of the losses showed that only 8.8 percent of the hard salable items (television sets, stereos, appliances, etc.) were described by serial number, unique inscriptions, or markings.

These results suggest that better descriptions could have been obtained if a larger proportion of the victims had marked and inventoried their property. The Telephone Survey contacts show that 63 of the 78 projects (80.8 percent) recommend that participants complete and maintain a property inventory list. Since no adequate survey of burglary reports involving participants has been made to date, the extent to which victimized O-I participants provide better property descriptions is not known.

Question 3h. Do police departments have mechanisms for tracing O-I identifiers?

Comparatively little information is available which provides a direct answer to this question. However, as a result of research and from the Telephone and Field Surveys, considerable information has been secured about the use of various types of identifiers. It is included here because it concerns an O-I subject area about which little has been written heretofore.

Results from both the Telephone and Field surveys indicate that the types of records and the methods used to trace property owners vary considerably from project to project. In the Telephone Survey, 23 projects (29.6 percent) indicated that the list of identifiers used to trace owners was compiled from burglary reports which contained the victim's identifying number. Twenty-seven projects (34.6 percent) utilized project registration lists, while 48 (61.5 percent) relied on lists maintained by agencies such as the state motor vehicle department. (The above percentages total more than 100 percent because some projects reported the use of more than one mechanism to trace property owners.)

The type of identifier used by an O-I project can affect the success of the tracing mechanism utilized. A 1973 study of property numbering systems[17] found that none of the existing personal O-I identifiers in use met all the stated needs of an O-I project. Among the desirable attributes described for an ideal identifier were: uniqueness, permanence, standardization, availability, and traceability.

The study recommended that state driver's license numbers, prefixed with a two-letter abbreviation for the state, be used until a standardized, personal identifier becomes available nationwide.

Table 5-2 shows the kinds of identifiers recommended by the O-I projects contacted during the Telephone Survey. Each identifier fails to satisfy at least one of the attributes

identified above.

Table 5-2

IDENTIFIERS RECOMMENDED BY 78 TELEPHONE SURVEY PROJECTS*

Identifier	Number Responding	Percentage of Surveyed Projects
Driver's License Number	44	56.4
Social Security Number	30	38.5
Name	3	3.8
Address	2	2.6
NCIC Prefixed Number	6	7.7
Number Assigned by Project	6	7.7
None Recommended	5	6.4
Other	10	12.8

*Percentages total more than 100% because projects recommended more than one identifier.

The driver's license number is the most popular O-I identifier, since it is quite readily traceable through a computer search of the state motor vehicle files. The biggest drawback to its use, however, is its non-permanence. According to the property numbering study, 30 states change individual license numbers each year. Hence, stolen property marked with an outdated driver's license number may not be traceable by the police even within the same state. In addition, driver's license numbers vary considerably in content and length from state to state, thereby contributing to the problem of recognizing and using out-of-state numbers in tracing owners.

The major problem in using the Social Security number as an O-I identifier is that it is traceable only if the participant has reported it to police either through registration as an O-I participant or in a burglary report. O-I projects in both St. Louis and Cincinnati have been unable to trace Social Security numbers. Further, present federal regulations prohibit the Social Security Administration from identifying individuals to other government or private agencies. Pending federal legislation would further restrict the use of Social Security numbers by prohibiting their use for any purpose except Social Security. ("Comprehensive Right to Privacy Act," H. R. 1984).[43]

Entering O-I identifiers on stolen marked property into the National Crime Information Center (NCIC) computer files has been proposed as a national method for tracing the owners of recovered O-I marked property. NCIC, a branch of the FBI, maintains computerized stolen article files which law enforcement agencies nationwide can access through on-line computer terminals. At a June 1972 users' conference in Washington, D. C., the entry of owner-applied identification numbers into the searchable files of NCIC was unanimously rejected by the more than 200 law enforcement personnel in attendance.[45] The basis for this action was the fact that O-I identifiers do not satisfy the criteria established by NCIC for the entry of any identifier into the search files. These criteria are:

(1) the item must be <u>individually</u> serialized;

(2) the number must be unique to that item; and,

(3) the property must have been stolen.

Since each O-I participant usually uses the same number to mark all of his property, the identifier does not satisfy criteria (1) or (2) above.

NCIC further suggests that entry not be made unless:

- o the value of a single item is at least $500; and,
- o the aggregate value of a group of items is at least $5,000.[15]

In many cases these suggestions are disregarded by individual police departments since items connected with an important case (e.g., a homicide) are frequently entered regardless of value. Although O-I identifiers may be entered in a "free descriptive field" in the NCIC files, this field is nonsearchable. Thus, NCIC to date is not a viable mechanism for tracing owners of stolen O-I marked property.

The International Association of Chiefs of Police has proposed model legislation which would require manufacturers to imprint NCIC compatible identifiers on items before they are sold; and to place on the item a detachable tag, certificate, or label containing a description of the property which the owner could easily remove and keep.[24]

Question 4. Is recovered O-I marked property more likely to be returned to owners than recovered unmarked property?

When asked to rate the success of their O-I project in increasing the return of stolen property, 38 of the 78 interviewees (48.7 percent) in the Telephone Survey responded that they did not

know. Thirty-three respondents (42.3 percent) indicated that their project was "somewhat successful," and seven respondents (9.0 percent) indicated no success. O-I project staff members and property recovery officers interviewed during the Field Survey frequently indicated that they were unaware of any returned property due to O-I or else were aware of only a few cases. In New York City, where property return has been monitored since the project's inception in July 1972, only $8,500 worth of property had been returned to victimized owners by February 1975. Interviewees in smaller projects, such as University City, Missouri, and Kirkland, Washington, also indicated that the return of property due to O-I was negligible.

The Seattle Burglary Reduction Program has attempted an evaluation of the property return objective of its O-I project. O-I participants were enrolled in three experimental sectors of the City; three control sectors in which the number of O-I participants was minimal were selected for comparison. The total value of returned property increased in only one experimental sector for the test period September 1973 through August 1974 when compared to the base period of September 1972 through August 1973; for the same time periods, increases in the total value of returned property were found in two of the control sectors. Comparisons based on the ratio of the value of returned property to the value of all stolen property in each sector also indicated no significant differences between the experimental and control sectors.

Although the methodology of the Seattle evaluation appears sound, the comparisons designed to test for increased property return due to O-I were not particularly useful, since there were fewer than 30 burglaries at O-I residences for the entire test period.

CHAPTER VI. ASSESSMENT OF OTHER BENEFITS ATTRIBUTABLE TO OPERATION IDENTIFICATION

A. Introduction

In addition to the two major objectives of Operation Identification: burglary deterrence, and property recovery and return, some O-I implementors claim other benefits have been realized from the recruitment activities of Operation Identification. The two most commonly identified are that:

(1) O-I, implemented and supported by the police, serves a useful police-community relations (PCR) function by involving the police and the public in a cooperative effort to fight crime; and

(2) O-I information often serves as a useful vehicle for introducing other crime prevention concepts to citizens who initially may have been interested only in Operation Identification, and for motivating them to join such programs or to adopt other preventive techniques.

These benefits are assessed together in this chapter because they both represent "spin-off" or serendipitous effects of O-I (i.e., they are benefits realized from recruitment activities primarily implemented to increase citizen participation in O-I). As an example, recruitment efforts conducted by police officers (primarily directed at increasing the number of O-I participants) are also frequently identified as useful PCR activities. Also, group presentations about Operation Identification quite naturally invoke citizen inquires about other types of security precautions that can be used by citizens to safeguard their homes.

It must be emphasized that the benefits discussed in this chapter are characterized by the fact that they are not the primary

goals of the O-I recruitment activities that produce them; rather they are additional effects of the O-I activities that are described in Chapter III. Consequently, no new O-I activities are described in this chapter. Rather, the discussion of each effect focuses on (1) the underlying assumptions that link each benefit to O-I activities already described, (2) on the uncontrollable factors which hinder the effective evaluation of each benefit, and (3) on the evaluation findings of past research efforts and this study.

B. Improved Police-Community Relations

The claim that improved police-community relations result from police support and involvement in Operation Identification is based on the following assumptions:

- o increased contact between police officers and citizens who participate in O-I will improve the perception of the police by those participants,
- o publicity which shows police officers involved in a project to help citizens prevent crime will improve the police image in the community, and
- o O-I participation will lead to a reduced fear of crime and a more favorable attitude toward the police.

Although PCR may result from police involvement in O-I, it may also be true that the project's success may depend upon the pre-existing environment of police-community relations in the target community, and on concurrent PCR activities. Hence, the relationship between PCR and O-I may be reciprocal (i.e., each may have a definite effect upon the other). Each of these cause-and-effect relationships is discussed below as a separate

question.

Question 1. Can police-community relations be improved due to police involvement in an O-I project?

Most of the projects contacted in the Telephone Survey felt that police-community relations had been improved as a result of O-I project efforts. Sixty-four percent of the O-I projects contacted stated they had been "very successful" in improving police-community relations; 21 percent stated they had been "somewhat successful," and only 1 percent responded "not successful." (Thirteen percent said they did not know if they had been successful or not.) Among the same O-I projects, 94 percent stated that improving police-community relations was a "very important" or "somewhat important" objective, although only 9 percent identified it as the "most important" objective.

The statewide evaluation of O-I projects in Illinois concluded that O-I had some positive effect on citizen attitudes toward the police.[18] It found that 28 percent of the participants interviewed in Chicago and 32 percent of the participants interviewed in northern Illinois (excluding Chicago) stated that their experience with O-I had caused them to feel that the police were handling their jobs either "somewhat better" or "much better" than before. Sixty-one percent of the participants in Chicago and 56 percent of the participants in northern Illinois indicated no change in their attitudes. Very few of the participants interviewed, however, stated that their experience with O-I made them feel, in any way, more negative about police performance.

Interpretation of these survey results is difficult, however, since they do not answer the question: do participants have a better impression of the police because they join an O-I project, or are O-I participants merely the same people who support the police by participating in other PCR functions. No O-I project to date has attempted a thorough evaluation of this question.

Question 2. Can existing police-community relations affect the success of O-I recruitment and enrollment efforts?

In Chapter III, the involvement of civic and business groups in O-I and the mobilization of informal (word of mouth) community information networks are identified as important factors in the success of O-I recruitment and enrollment efforts. In addition to these factors, it may also be true that police departments that have established positive relationships with the community can more effectively mobilize community support for an O-I project.

Evaluation results related to this question are almost non-existent. The Illinois O-I evaluation indicated that citizen dissatisfaction with the police in Chicago may have adversely affected the O-I effort there.[18] This result may be one explanation for the different levels of recruitment success reported by projects which use the same promotional methods, but are run by different types of government or private agencies. Hence, even given a favorable PCR environment, there may be significant difference in recruitment effectiveness between police-run and civilian-based projects. Further information and research is

necessary, however, before definitive conclusions can be drawn.

In summary, there is some indication that the absence of good police-community relations in a target area can adversely affect the effectiveness of an O-I project and that, in turn, good relations can have a beneficial effect. On the other hand, many project representatives feel that O-I has helped improve police-community relations in their cities, and interviews of O-I participants conducted in Illinois tend to confirm this finding.

C. Promotion of Crime Prevention Activities

The results of field visits to 18 O-I projects strongly suggest that the most positive use of O-I to date has been to "sell" crime prevention to the public. The simplicity of the concept is easily explained and understood, and presently is used by many crime prevention units as a mechanism or vehicle for introducing more sophisticated crime prevention concepts. In fact, the suggestion has been made that burglary reductions for O-I participants may not be due directly to O-I at all, but rather to the fact that O-I participants also tend to use other crime prevention techniques such as better locks and more lighting. No evaluative studies now exist to substantiate or disprove this hypothesis.

All of the crime prevention units visited during the Field Survey and 50 percent of the projects contacted for the Telephone Survey included Operation Identification as part of a larger crime prevention program; several had conducted extensive

crime prevention publicity campaigns featuring O-I as a major element. No evaluation of the effectiveness of O-I primarily as a device to inform citizens about other security precautions has been attempted.

D. Summary

If the burglary deterrence and property recovery goals of O-I are achieved, the public information and PCR value of O-I are extra benefits that will serve to further enhance the value of the project. If, on the other hand, O-I does not achieve its two primary objectives, then the public education and PCR benefits, although useful, may not justify the cost of the project to the community when outside funding support for O-I ceases.

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THE INSTITUTE FOR PUBLIC PROGRAM ANALYSIS

PLANS FOR PHASE II EVALUATION ACTIVITIES

PHASE I
EVALUATION OF OPERATION IDENTIFICATION

ABSTRACT

This report identifies nine important gaps in the knowledge of Operation Identification's (abbreviated O-I) overall effectiveness found in the Phase I evaluation of O-I conducted for LEAA's National Evaluation Program. The nine areas concern: (1) enrollment instructions, (2) participant compliance therewith, (3) police-community relations benefits, (4) explanations of the burglary deterrent effect other than as an effect of O-I, (5) the burglar's risk of apprehension and conviction, (6) the marketability of stolen O-I marked property, (7) the displacement of burglaries to neighbors of participants, (8) property recovery, and (9) property return.

Plans for resolving the nine knowledge gaps are based on four data collection activities: (1) a survey of police and other experts on burglary, (2) examination of police and court records, (3) a survey of implementors of O-I projects, and (4) surveys of O-I participants and non-participants. A strategy for selecting a subset of the knowledge gaps for inclusion in the Phase II evaluation is given. Finally, a recommendation is made regarding the components and cost of the Phase II evaluation. It does not involve creation of new O-I projects or expansion of any ongoing projects. The cost of the proposed evaluation is thereby reduced; it is estimated to be about the same as for the Phase I evaluation.

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SUMMARY

LEAA's National Evaluation Program seeks to determine for selected topic areas what is known about the methods, outcomes, and effectiveness of representative projects. The assessment of each topic area, performed as part of a "Phase I evaluation," is also to include identification of the important unknowns, or "knowledge gaps," about underlying project assumptions. These gaps are the subject of the present volume, which presents plans for a possible "Phase II evaluation" effort designed to fill the gaps.

For each knowledge gap, the proposed plan examines the importance, feasibility, methods, and costs of obtaining controls or relative comparisons for testing operating assumptions and establishing effectiveness. Where alternate evaluation options exist, these too are considered so that LEAA will have at its disposal a series of evaluation alternatives ranging from no further evaluation, through implementation of only selected parts of the Phase II plan, to complete adoption of the proposed effort.

This report deals with the important assumptions about Operation Identification (O-I) which are as yet unvalidated, and which have been judged central to O-I's effectiveness. The assumptions have been identified by careful screening of the unknowns about O-I discovered in conducting the Phase I study. Each knowledge gap was formulated as a question, and the cost of obtaining an answer, its expected reliability, and the rela-

tive value of the answer to understanding O-I were considered.

The nine questions finally selected as the basis for the Phase II evaluation are:

Question 1 - Do O-I project implementors adequately instruct participants regarding property marking, the completion of inventories, and the posting of decals (including procedures for keeping current after initial enrollment)?

Question 2 - To what extent do project participants follow these instructions?

Question 3 - Is O-I an effective police-community relations program?

Question 4 - Are the reduced burglary rates experienced by O-I participants attributable to O-I (or do they arise from other crime prevention measures also in effect)?

Question 5 - Does O-I increase a burglar's risk of apprehension, prosecution, or conviction?

Question 6 - Is the marketability and/or market value of stolen property decreased because of property marking?

Question 7 - Are burglaries displaced from O-I participants to their non-participating neighbors?

Question 8 - Is stolen O-I property more likely to be recovered by police than unmarked property? and

Question 9 - Is recovered O-I property more likely to be returned to owners than unmarked property?

Evaluators who conduct the Phase II evaluation of O-I will have at their disposal a substantial data base compiled for the Phase I evaluation. Four supplementary data collection efforts have been proposed for the Phase II evaluation. They are:

- a survey of experts on burglary and on the processing of burglary cases in the criminal justice system;
- an examination of police and court records on reported burglaries, burglary arrests and processing, and property recovery and return;
- a survey of implementors of O-I projects; and

- surveys of O-I participants and non-participants.

As suggested by the list, the Phase II data are to be compiled from the existing universe of O-I projects. No new projects are proposed, nor is expansion of present projects. This approach substantially reduces the cost of the evaluation, and leaves the scheduling of its component activities largely to the discretion of the evaluator.

Chapter IV of the report presents a detailed evaluation plan for resolving each of the nine O-I knowledge gap questions. For each question there is a list of related hypotheses to be tested, a description of the data required and their sources, an explanation of the analytic methodology, a commentary on potential sources of error, and an indication of the important cost considerations. The analyses are designed to be largely independent of one another, so that, if desirable, some may be utilized while others are omitted.

A requirement of each Phase II evaluation plan is that it prioritize the identified knowledge gaps according to their importance in assessing the effectiveness of topic area projects, and then use the priorities to recommend a strategy for selecting components of the evaluation. Preparation of this recommendation has been one of the most difficult tasks of the project, since the largely negative findings of the assessment of O-I's effectiveness strongly suggest a recommendation to conduct no Phase II evaluation at all. Deliberations regarding two possible outcomes of this strategy have resulted, however, in a recommendation for a small scale Phase II effort. The two

possible outcomes considered were:

(1) If O-I has a valid burglary deterrent capability beyond that assessed in the Phase I effort then a "no evaluation" recommendation which contributes to the abandonment of O-I by its implementors will deprive the nation of a valuable burglary preventive resource; and,

(2) If the negative findings about O-I are in fact completely valid, the presence of uncertainty in the assessment (as evidenced by the knowledge gaps) and the popular appeal of O-I may, in the minds of decision makers, nullify the findings and lead to continued investment of considerable public revenues in O-I.

In both situations, the cost to the nation will be substantially greater than that proposed for the Phase II evaluation.

The recommended Phase II plan consists of the following components, listed in order of decreasing importance to the overall assessment of O-I's effectiveness.

(1) Burglary Reduction. If O-I implementors and participants believe that O-I can by itself add a measure of protection to enrolled premises, there will continue to be a compelling motivation to employ it. The two most crucial knowledge gaps in this regard are:

- Do O-I markings "protect" property from theft, compared to similar unmarked property? and
- Are burglaries displaced from O-I participants to their non-participating neighbors?

Methods for answering both questions are given: that for property marking involves a telephone survey of burglarized participants, and that for displacement involves analysis of computerized O-I and burglary data available in St. Louis, Missouri.

(2) Citizen Participation. Even if O-I's burglary deterrence ability was absolutely perfect, O-I could not contribute significantly to protecting either participants or their communities if the participants did not comply adequately with enrollment instructions. Two questions which express the important knowledge gaps in this area are:

- What level of compliance with enrollment instructions is achieved by participants? and

- Will participants keep their enrollment up to date (i.e., replace worn decals, update inventory lists, correct changed identification numbers, etc.)?

A telephone survey of O-I participants is recommended for answering these questions. It can be easily added to the survey proposed above for burglary reduction.

(3) Police-Community Relations. If the burglary reduction and citizen compliance aspects of O-I are reliably determined to be inadequate, an additional facet of O-I, widely considered attractive, will continue to motivate use of the program: O-I's assumed benefits as a police-community relations program. Methods for assessing the validity of this assumption include a survey of police experts, and a survey of O-I participants and non-participants. The former survey can tie in with the evaluation recommended for "Other Benefits" below; the latter survey ties in with the procedures recommended for (1) and (2) above.

(4) Other Benefits. The remaining O-I knowledge gaps have been grouped together under the heading "Other Benefits." The most important of these relates to O-I's assumed contribution to the recovery of stolen property and its subsequent return to owners. The recommended Phase II assessment of this assumption involves a survey of police and other experts.

The dollar and manpower costs for conducting the Phase II evaluation are difficult to project. Based on experience with similar tasks undertaken for the Phase I evaluation, it is suggested that approximately the same resources would suffice for the Phase II effort as for the Phase I: about 30 man-months of effort during a six-month award period, and funded at a level of $96,000.

CHAPTER I. INTRODUCTION

A. The Purpose of the Phase II Evaluation

LEAA's National Evaluation Program seeks to determine for selected topic areas (each composed of a group of similar crime prevention projects) what is known about the methods, outcomes, and effectiveness of representative projects. Each topic area included in the program is subjected to a "Phase I" evaluation which reviews general knowledge and past findings, supplements available knowledge with telephone or field surveys, and draws together the results in a comprehensive assessment of effectiveness. In addition to drawing conclusions about what is known with reasonable certainty, the assessment is supposed to identify the important unknowns, or "knowledge gaps," about the topic area. These knowledge gaps become the subject of a "Phase II" evaluation plan, a document required of each Phase I evaluator, which explains how the knowledge gaps may be resolved.

The decision as to whether the Phase II evaluation will be undertaken rests with LEAA, and is to be made with the assistance of a panel of experts on the evaluation of crime prevention programs. Important factors in this decision will include the level of success found in topic area projects, the recommendations of the Phase I evaluator, the quality of the evaluation plan proposed, and the cost of the needed evaluative effort.

The Phase II evaluation plan must, for each important knowledge gap identified, examine the importance, feasibility,

methods, and costs of obtaining controls or relative comparisons for testing operating assumptions and establishing effectiveness. If present, alternate evaluation options should also be considered, so that LEAA, in its deliberations regarding funding the Phase II effort, will have a series of evaluation alternatives ranging from no further evaluation, through implementation of selected parts of the Phase II plan, to complete adoption of the proposed effort.

This report presents the Phase II evaluation plan for Operation Identification (O-I). Companion reports present the required assessment of O-I's effectiveness and summarize general knowledge and past findings about O-I. The assessment is constructed around a framework of the assumptions made by O-I project implementors about how O-I functions. These assumptions, and the Phase I compiled data relating to their validity, have been carefully reviewed in developing the present evaluation plan. Only those yet unvalidated, and which have been judged central to O-I's effectiveness, have been singled out for further study -- the rest have been judged either as adequately resolved by available data or as inconsequential to the important hypotheses about O-I.

B. Knowledge Gaps in the Assessment of Operation Identification

To distinguish the O-I projects considered in the present study from related programs, the following chracteristics were established to define the topic area:

- citizens are encouraged to mark each movable, markable piece of valuable property they own;

- a personal identifier, unique to each citizen, is used; and,
- burglary deterrence is a goal of the project.

The major findings of the Phase I assessment of O-I's effectiveness were:

- O-I projects have been unable to recruit more than a minimal number (less than 10 percent) of participants in their target areas;
- the recruitment cost per participant for an O-I project is quite high (median project cost is $4 per household) unless promotional resources and manpower are donated;
- the burglary rate of O-I participants following their enrollment in the program is significantly lower than the corresponding rate prior to enrollment;
- O-I communities have not experienced reductions in city-wide burglary rates;
- no evidence exists to indicate that O-I produces any increase in either the apprehension or conviction of burglars;
- the presence of O-I markings does not significantly reduce the opportunities to dispose of stolen property; and
- there is no indication that O-I markings appreciably increase either the recovery of stolen property by police or the return to owners of recovered property.

The degree of confidence with which each of the above findings is known is difficult to assess. Although each is based on the results of previous evaluations of O-I projects, the accumulated judgments of experts in the field, and the findings of the telephone and field surveys conducted for the Phase I evaluation, the conclusions contain varying amounts of uncertainty. The significance of this uncertainty to decision makers who would rely on the results also varies between the findings, depending

on which O-I objectives are considered to be most important.

Chapter II of this report identifies nine knowledge gaps in the assessment of O-I's effectiveness which appear sufficiently important to be included in the Phase II evaluation plan. As indicated in that chapter, it is difficult to give a precise formula for the way in which the many gaps found were screened for inclusion in the Phase II plan. The basic focus was on questions tied to O-I's central objectives, and on whether or not these could be achieved through O-I's procedures and activities. The cost of obtaining an answer, its expected reliability, and the relative value of that answer were also considered for each question. Bearing these factors in mind, and relying on the insight into O-I gained in the earlier stages of the study, the research team then used its best judgment to select those areas finally included in the Phase II plan. In many cases, the questions included were selected so that the reliability with which assessment findings were known might be increased; in a few cases questions were included because previous findings shed little light on what their answers might be.

The nine knowledge gaps finally selected, stated as questions, are:

Question 1 - Do O-I project implementors adequately instruct participants regarding property marking, the completion of inventories, and the posting of decals (including procedures for keeping current after initial enrollment)?

Question 2 - To what extent do project participants follow these instructions?

Question 3 - Is O-I an effective police-community relations program?

Question 4 - Are the reduced burglary rates experienced by O-I participants attributable to O-I (or do they arise from other crime prevention measures also in effect)?

Question 5 - Does O-I increase a burglar's risk of apprehension, prosecution, or conviction?

Question 6 - Is the marketability and/or market value of stolen property decreased because of property marking?

Question 7 - Are burglaries displaced from O-I participants to their non-participating neighbors?

Question 8 - Is stolen O-I property more likely to be recovered by police than unmarked property? and

Question 9 - Is recovered O-I property more likely to be returned to owners than unmarked property?

C. Data Sources for Information Needed to Answer The Nine Knowledge Gap Questions

Evaluators who conduct the Phase II evaluation of O-I will have at their disposal a substantial data base compiled for the Phase I evaluation. Included are items such as:

- completed telephone survey forms for 99 O-I projects;
- completed field survey forms for 18 O-I projects;
- project literature, grant applications, materials, hand-out brochures, and evaluation reports for numerous O-I projects;
- a list of about 1,000 O-I projects reportedly under way in the U. S. at the time of the Phase I study; and
- numerous research reports and other documents relating to burglary, crime prevention, and evaluation.

Four supplementary data collection efforts have been proposed for the Phase II evaluation effort. They are:

- a survey of experts on burglary and on the processing of burglary cases in the criminal justice system;
- an examination of police and court records on reported

burglaries, burglary arrests and processing, and property recovery and return;

- a survey of implementors of O-I projects; and
- surveys of O-I participants and non-participants.

Each of the above is discussed in more detail in Chapter III. As suggested by the list, the Phase II data are to be compiled from the existing universe of O-I projects. No new projects are proposed, nor is further expansion of present projects. Most of the data are to be derived from surveys which, while similar to those conducted for the Phase I evaluation, concentrate on areas for which the Phase I data are inadequate. The remaining data items are to be compiled from existing police and court records in a sample of cities having O-I projects under way. In effect, the Phase II plan is based on a retrospective analysis of earlier, O-I related experiences. This approach, which involves no further experimentation with ongoing O-I projects, has been selected because:

- it substantially reduces the cost of the Phase II evaluation;
- it leaves the scheduling of Phase II research activities largely to the discretion of the Phase II evaluator (by requiring little coordination with ongoing projects); and,
- it appears to be capable of adequately resolving the important knowledge gaps.

D. Considerations Regarding the Composition of a Phase II Evaluation for Operation Identification

Chapter IV presents a detailed evaluation plan for resolving each of the nine O-I knowledge gap questions. An effort has been made to design the analyses so that they are largely independent of one another, permitting the undertaking of some and

the omission of others. In those cases in which data items or measures of effectiveness are relevant to more than one question, a complete discussion is given under the first question for which it is relevant; for later questions reference is made back to the initial discussion.

An obligation of each Phase I evaluator will be to prioritize the identified knowledge gaps according to their importance in reliably assessing the effectiveness of topic area projects, and to use these priorities, and cost considerations, in recommending a strategy for the Phase II evaluation. Such strategies may range from no evaluation whatsoever (when Phase I findings are quite certain) to examination of all identified knowledge gaps. Although the Phase I evaluator has spent months in review of the topic area, examining results of previous evaluations and soliciting the judgment of experts in the field, the task of preparing the recommended strategy for Phase II evaluation will almost certainly be the most difficult of the entire project.

The evaluator will be aware that over 1,000 O-I projects are under way nationwide, and that the number is likely to continue increasing. He knows that these projects must operate in nonideal environments in which achieving implementation is probably more difficult than operating successfully, once established. Finally, he must acknowledge that, despite his pressing responsibility to assess fairly the topic area, since there are so many projects and individuals who might be favorably or adversely affected, he must make his strategy recommendations on

the basis of imperfect knowledge.

This difficulty is multiplied when, as is the case for O-I, the assessment of effectiveness casts much doubt on the overall value of the topic area projects as crime preventive resources. In such a situation the temptation to recommend that no further evaluation be undertaken is strong. Perhaps the Phase I results are believed sufficient to conclude that O-I, while logically appealing and widely popular, is incapable of producing with any certainty either community-wide burglary decreases or improvements in property recovery and return; therefore the investment of further public revenues in evaluation would be unwise and unnecessary. Such a recommendation, if erroneous, however, could lead to greater public costs than those of any Phase II evaluative effort. For example, if O-I has a valid burglary deterrent capability beyond that assessed in the Phase I evaluation, then a "no evaluation" recommendation could contribute to the abandonment of O-I by its implementors, depriving the nation of a valuable burglary preventive resource. Even if a recommendation for no Phase II evaluation is based on completely valid Phase I findings, there is a risk of loss of considerable public revenues: the popular appeal of and current investment in O-I, both fiscal and psychological, will not be easily dislodged by a negative Phase I assessment which admits to knowledge gaps in important aspects of O-I's effectiveness. People will simply ignore the assessment and continue to invest in O-I.

For these reasons, the "no Phase II evaluation" recommendation for O-I appears on balance to be unwise. Instead, the research team recommends a limited Phase II effort designed to resolve reliably the validity of a few crucial, untested assumptions. Such resolution thereby will hopefully prove O-I's potential effectiveness, or finally demonstrate its inadequacy. The components and objectives of the proposed plan are discussed in the following section.

E. The Recommended Phase II Evaluation Plan

The recommended Phase II evaluation plan consists of two parts. The first is a prioritization of the O-I knowledge gaps according to their importance in assessing O-I's overall effectiveness. The second is a strategy for using the priorities and knowledge of the amount of resources which might be available for the Phase II evaluation, in selecting tasks for the Phase II effort.

Prioritization of the knowledge gaps is based on their aggregation into four research areas. Listed in order of decreasing priority, they are:

(1) burglary reduction;

(2) citizen participation;

(3) police-community relations; and

(4) other benefits.

Each area is discussed briefly in the following paragraphs.

1. Burglary Reduction

As long as implementors and participants believe that O-I can by itself add a measure of burglary protection to enrolled

premises, there will be a compelling motivation to promote and use O-I. If everyone, burglars included, held this opinion, O-I would almost certainly be a valid and useful burglary deterrent. On the other hand, if O-I provides marginal protection to a small number of participants, at substantial cost, and succeeds only in displacing burglaries to non-participants, the net benefit will be negative.

In assessing O-I's burglary deterrence capabilities the two most crucial knowledge gaps appear to be:

- Do O-I markings "protect" property from theft, compared to similar unmarked property? and
- Are burglaries displaced from O-I participants to their non-participating neighbors?

If O-I markings do not protect property, and if any prevented burglaries are merely displaced, O-I's assumed burglary deterrence benefits will be absent. Answers to these two questions are assigned top priority for the Phase II evaluation. Additionally, since displacement is a widely-hypothesized effect of other types of target-hardening programs, and since no adequate method of empirically testing for it has yet been developed, the proposed research on displacement may, as a side benefit, yield a useful methodology transferable to other types of programs.

Methods for resolving these two questions are given in Chapter IV: that for property marking is discussed under Question 4 and involves a telephone survey of burglarized O-I participants; and that for displacement, discussed under Question

7, involves analysis of computerized O-I and burglary data available in St. Louis, Missouri.

2. Citizen Participation

Even if O-I's burglary deterrence ability is perfect, O-I cannot contribute significantly to protecting either participants or their communities if the participants do not comply adequately with enrollment instructions. Failure to post decals, engrave property items, and complete the property inventory, and failure to keep these current once accomplished, will diminish O-I's influence -- either from the date of enrollment or more gradually as time passes. Although the assessment of O-I clearly indicates the problems of enrolling more than a minimal number of participants, it leaves largely open to question the extent to which presumed participants have complied and how rapidly such involvement may deteriorate into virtual non-participation. Two questions which express this knowledge gap are:

- What level of compliance with enrollment instructions is achieved by participants? and
- Will participants keep their enrollment up to date?

Both are considered under Question 2. The evaluation plan in Chapter IV suggests three research activities. Of these, it is recommended that the telephone survey of O-I participants be given top priority for the Phase II evaluation: it is the surest and quickest way to learn of participant compliance; and it can easily be integrated with the similar survey proposed above for studying burglary reduction, by the addition of a sample of non-burglarized participants.

3. Police-Community Relations

If both the burglary reduction and citizen compliance aspects of O-I are reliably determined to be inadequate, an additional facet of O-I, widely considered attractive, will still continue to motivate use of the program: O-I's assumed benefits as a police-community relations (PCR) program. O-I allows implementing agencies to take a preventive posture towards burglary, supplementing routine services such as investigation of reported burglaries. It also provides a vehicle for the promotion of other more complex crime prevention methods and for the general education of the public regarding crime prevention. If these benefits are truly valid, and if costs are sufficiently low, they may make O-I worthwhile despite its other shortcomings. As indicated in the Phase I assessment, little is known about O-I's effectiveness as a PCR program. Thus, this area is given third priority for the Phase II evaluation, methods for which are given in Chapter IV under Question 3. They include a survey of police experts, and one of O-I participants and non-participants. Of these, the survey of police experts is given lower priority, but should be included if the issues discussed below under "Other Benefits" are to be included in the Phase II effort, since they too rely on this survey. Again, the proposed survey of O-I participants and non-participants may be easily incorporated in the higher-priority Phase II assessments planned for burglary reduction and citizen participation.

4. Other Benefits

The remaining O-I knowledge gaps are grouped together under the heading "Other Benefits" and are given fourth priority for the Phase II evaluation. The most important gap relates to O-I's assumed contribution to the recovery of stolen property and its subsequent return to owners. The Phase I assessment found no evidence that O-I adds materially to the rates of property recovery and return. It is not known whether this results from defects in the O-I concept, from problems connected with present police procedures and limited resources, or for other reasons. Methods for learning more about the situation are presented in Chapter IV under questions 8 and 9. Of these, the survey of police and other experts is given top priority, and may be added to the similar survey proposed above in connection with assessing O-I's PCR benefits.

5. Strategy for Designing the Phase II Evaluation Effort

As indicated, the most important O-I knowledge gaps may be addressed by a Phase II evaluation effort which includes two surveys -- one of O-I participants and non-participants, the other of police and other experts -- and a computer analysis of certain O-I participation and burglary data. The dollar and manpower costs of conducting such an evaluation are difficult to estimate. Cost considerations include those for planning and conducting the surveys, and for designing and carrying out the computer analysis. Based on experience with similar tasks undertaken for the Phase I evaluation, approximately the same resources would appear to suffice for the Phase II effort as for the

Phase I: about 30 man-months of effort, during a six-month award period, and funded at a level of $96,000.

The design of the Phase II effort should proceed as follows:

1. review of the assessment of O-I and the Phase II evaluation plan by LEAA and its panel of experts;
2. identification of the knowledge gaps and evaluation methods which appear most central to the Phase II effort;
3. consideration of related evaluation activities under way nationwide;
4. construction and issuance of a request for proposals to carry out the Phase II evaluation; and
5. selection of the best proposal.

Should only some of the components of the recommended Phase II plan be selected for inclusion in the Phase II effort, it is suggested that they be selected in the order of their priority as identified above.

F. Prologue

In the following chapters reference is made to several of the other reports produced in connection with the Phase I evaluation of O-I. The full titles, and abbreviated names (shown in parentheses) for these documents are:

"A Review of General Knowledge and Past Findings," (the Review);

"Assessment of Effectiveness," (the Assessment);

"A Telephone Survey of Operation Identification Projects: Methodology and Results," (the Telephone Survey); and

"A Field Survey of Operation Identification Projects: Methodology and Results," (the Field Survey).

In preparing the present document, every effort has been made to make it as readable and easy to understand as possible. Due to the large number of O-I knowledge gaps treated, and the inclusion of one or more evaluative tasks for each knowledge gap, some parts of this report, particularly Chapter IV, will be best approached as reference material rather than as a narrative overview.

CHAPTER II. IMPORTANT UNANSWERED QUESTIONS ABOUT OPERATION IDENTIFICATION

A. Introduction

The Assessment has analyzed the operation of O-I in terms of the basic assumptions made by its implementors and participants. These assumptions were organized into a framework which displays their interrelations and provides a convenient vehicle for assessing what is known (i.e., empirically validated) and unknown about the way O-I is thought to work. The following discussion will be more meaningful if those who have not yet read that report do so before proceeding with the remainder of this document.

As the Assessment indicates, the current state of evaluative knowledge about O-I is such that many important questions remain unanswered. In the following discussion, the most important of these questions are presented, grouped according to the framework component to which they are most closely tied: recruitment and enrollment (including police community relations), burglary deterrence, and recovery and return of stolen property.

As explained in Chapter I, there was no precise formula for judging the importance of potential questions. Basically, the focus was on questions tied to O-I's central objectives, particularly those relating to whether or not these objectives could be achieved through O-I's procedures and activities. The cost of obtaining an answer, its expected reliability, and the relative value of that answer to the overall assessment of O-I's

effectiveness were also considered. In some cases side benefits, such as possible use of the results in studying the effectiveness of other types of target hardening programs, were also taken into account. In reading the following sections the reader should recall that the questions selected vary in importance in assessing O-I, as indicated by the priorities assigned to them in Chapter I.

B. Recruitment and Enrollment

The recruitment and enrollment component of an O-I project consists of activities designed to encourage, develop, and monitor citizen participation in the project. Encompassing most of the direct activities undertaken by project staff and volunteers, the component consumes most of the resources allocated to any project. As a result, the eventual success or failure of O-I's other components depends to a large extent upon the effectiveness of the recruitment and enrollment process.

Recruitment activities usually include impersonal mass media public education efforts, and more personal efforts involving contact with groups and individuals by project representatives. Enrollment activities usually include distribution of instructions and materials to citizens; provision of engraving tools, decals, inventory forms and, perhaps, of engraving services; and the collection of basic information about citizens who join the program (e.g., name, address, telephone number, date joined, and identifying number used in engraving property).

The most important knowledge gaps related to recruitment and enrollment center around the current paucity of knowledge about the extent to which participants actually perform the necessary O-I activities. Any realization of O-I's potential benefits by participants or the community is dependent upon the completion of the three basic activities: marking and inventorying property, and posting project decals. Without full implementation of any of these activities, the potential for burglary deterrence and increased property recovery and return are reduced from the moment the participant enrolls in the program. Further, in order for the benefits of O-I participation to continue over time, the participant must keep his marking and inventorying of property current, and maintain or periodically replace his project decals.

The degree of participant involvement in these activities is partly dependent on the instructions given by the local project, particularly in connection with keeping current after the initial enrollment. Therefore, to complete assessment of this area there is a need for further review of the instructions given to, and the activities actually completed by, participants.

The information needed to resolve these knowledge gaps may be obtained by structuring additional research around the following two questions:

1. Do O-I project implementors adequately instruct participants regarding property marking, the completion of inventories, and the posting of decals (including procedures

for keeping current after initial enrollment)? and,

2. To what extent do project participants follow these instructions?

The Assessment sheds some light on these questions. In general, the instructions given to new enrollees regarding initial enrollment activities appear adequate. However, little is known about the emphasis on, or project procedures or services for, keeping participants current. Even less is known about the extent to which new enrollees follow initial instructions, particularly those regarding the numbers and types of items engraved (when this is not done by project staff) and the completion of the inventory form. If only a few items are engraved, or the forms are not completed, the elements of O-I which rely on these activities are weakened or non-existent. Finally, almost nothing is known about the extent to which participants keep their participation current; the little evidence available suggests that this may be the project's Achilles' heel. If initial participant activity and enthusiasm is followed by inactivity, O-I's benefits must eventually be seriously weakened.

A separate objective of many O-I recruitment and enrollment activities has been the promotion of improved police-community relations. Both the police and the public, frustrated and alarmed at the extent of the burglary problem in communities across the nation, have sought tangible, effective measures for its control. O-I gives everyone a chance to "do

something" about the problem. Police agencies and other organizations which implement the program feel that the preventive effort offered by O-I is a valuable approach in dealing with burglary before it happens. An added, secondary benefit is that O-I projects create a good public image.

Among burglary prevention programs O-I has a compelling attractiveness: it is easy to explain to potential users, it appears inexpensive and easy to implement, and it has sometimes impressive success stories -- e.g., the arrest of a "fence" in New Orleans, and the return of stolen skis even before they had been missed. It would thus appear that O-I has often been considered a worthwhile endeavor for its police-community relations value alone. However, because of the questions raised about O-I's efficacy as a burglary reduction program, and the potentially high cost of full implementation (as indicated by the Assessment), a better assessment of those benefits is required. Thus:

3. Is O-I an effective PCR program?

C. Burglary Deterrence

The burglary deterrence component of O-I generally includes the following objectives:

- reduce burglary within the O-I project's target area;
- increase the burglar's risk of apprehension;
- increase the likelihood of the burglar's eventual conviction subsequent to apprehension; and,
- reduce burglary's profitability and attraction by impairing the ease with which stolen property can be disposed.

As indicated in the Assessment there is convincing evidence that O-I participants experience lower burglary rates after enrolling in the program. While the participants may be thus protected, little is known about the project's overall effect on their community's burglary rates. Here "community" includes, but is not limited to, the project's target area; it is comprised of three distinct groups: participants in O-I, non-participating neighbors of O-I participants, and all other non-participants in the target area and in jurisdictions in close proximity to the target community.

While evaluations of O-I in St. Louis, Denver, Seattle, and other cities have generally indicated that burglars are deterred from victimizing O-I participants, further evaluation appears required to determine why this is so. The crime of burglary by its nature is impersonal, and it is generally assumed that those who perpetrate it strive to avoid confrontation with their victims. Therefore it is thought that most burglars choose targets which present the least difficulty in terms of gaining entrance, making a successful escape, and disposing of stolen merchandise quickly and profitably. The testimony of known burglars has generally confirmed this assumption.

If one accepts the assumptions that burglars seek "easy" targets and that they are deterred from victimizing O-I participants, a logical conclusion is that many burglars view O-I premises as more difficult targets than non-O-I premises. Two alternative explanations may be postulated: deterred burglars

are either reacting to specific O-I circumstances (the presence of marked and inventoried property, or of decals) or to target hardening unrelated to property identification, but often found along with O-I.

Most project implementors and their funding agencies accept the former explanation unless they are simultaneously promoting other forms of target hardening. They are also assuming that O-I enrollees are displaying the warning decals and have marked their property, and that burglars will see the decals or markings and recognize their meaning. Other assumptions being made are:

- that the disposition of marked stolen property will be more difficult and/or less profitable than that of unmarked property;
- that the burglar's risk of apprehension will be greater (because of increased time required to select property or remove markings); and
- that the burglar's risk of prosecution and conviction will likewise be greater if he is apprehended with marked property in his possession.

Some insight into the validity of these assumptions has been derived, mainly from opinions expressed to the research team by police officers and prosecutors during the field survey; and from convicted burglars. However, additional evaluation is required to develop a reliable assessment.

If it is true, however, that burglars avoid O-I premises because of activities peripheral to O-I, then the following set of assumptions is more likely to hold:

- O-I participants are crime conscious and, as a result, have tended to take other target-hardening precautions;

- these other target-hardening precautions will significantly increase the time required by a burglar to enter the premise (and, consequently, will increase the likelihood that he will be observed); and,
- crime conscious residents of the neighborhood will increase the probability that the burglary will be noticed and reported.

The first of these assumptions has been addressed in previous O-I evaluations (e.g., in Denver and St. Louis), but with inconclusive results. An evaluation conducted in Seattle attempted to assess the relative deterrent effects of a variety of target-hardening techniques (security surveys, block watch, and O-I) being used singly and in various combinations in different parts of the city. No statistically significant differences were identified, but the data were insufficient to consider the results either conclusive or very reliable.

Probably the most important knowledge gap in the assessment of O-I's benefit to the community refers to the previously-mentioned possibility of geographic displacement of burglary. Any direct measurement of such displacement by examining burglary rates for non-participants has been impossible thus far because of the relatively small numbers of O-I participants and large numbers of non-participants in every project in which the evaluation was attempted. For example, assuming 10 percent project participation, if participants experience a 30 percent decrease in burglary (as was found in St. Louis and Seattle), and if all burglaries deterred among participants are displaced to non-participants, then non-participants would experience only a 3.3 percent increase in their burglary rate. Such an

increase is impossible to detect reliably considering the inherent variability of crime statistics, high nonreporting of crimes, and the presently increasing nationwide burglary rate (8.0 percent in 1973).

Despite these difficulties, it is important to settle the question of burglary displacement from O-I participants to their non-participating neighbors in order to resolve whether or not neighbors:

- are the recipients of beneficial effects of O-I (i.e., they too will experience lower burglary rates); or,
- are being victimized more frequently due to their proximity to participant premises.

The above mentioned unknowns about Operation Identification's effectiveness in deterring burglary have been formulated for the Phase II evaluation plan as follows:

4. Are the reduced burglary rates experienced by O-I participants attributable to O-I (or do they arise from other crime prevention measures also in effect)?

5. Does O-I increase a burglar's risk of apprehension, prosecution, and conviction?

6. Is the marketability and/or market value of stolen property decreased because of property marking? and,

7. Are burglaries displaced from O-I participants to their non-participating neighbors?

D. Property Recovery and Return

Implementors of O-I projects assume that even if O-I fails to deter a burglary at a participating residence, it will be an effective aid in the property recovery process and will be of value in identifying and locating the true owner of re-

covered property. As pointed out in the Assessment discussion of the recovery and return of stolen marked property, very little evidence is presently available with which to judge O-I's effectiveness in this area. Nationally, relatively few O-I participants have been burglarized since joining the program. Consequently few items of marked stolen property might conceivably be recovered and returned. Additionally, property recovery rates in general are very low and, as indicated by the findings of the Telephone and Field surveys, only a small number of marked stolen items are known to have been recovered.

The generally disappointing levels of O-I participation in most projects also work against adequate realization of the recovery and return capabilities which O-I may possess -- when relatively few property items are engraved, such items can never constitute any substantial fraction of those stolen and later recovered.

Even though experience to date casts doubts on O-I's ability to enhance property recovery and return, the central role of O-I's assumed capabilities in these areas in impacting burglary appears too important to declare failure without further investigation. A side benefit of such investigation would be a better understanding of police property recovery and return systems and, possibly, insight into methods for improving them.

Two fairly obvious questions may be used to indicate the important knowledge gaps for the Phase II evaluation plan:

8. Is stolen O-I property more likely to be recovered

by police than unmarked property? and,

9. Is recovered O-I property more likely to be returned to owners than unmarked property?

CHAPTER III. DATA NEEDS FOR THE PHASE II EVALUATION ACTIVITIES

A. Introduction

The previous chapter has reviewed the unanswered questions, the knowledge gaps, about O-I's effectiveness in achieving its objectives. A subset of nine important unanswered questions was selected for inclusion in the Phase II evaluation plan. The following sections describe the data needs for resolving the nine knowledge gaps. Four data collection efforts are described and their relationships to each of the knowledge gaps are explained.

B. The Phase II Data Collection Efforts

The Phase II evaluators of O-I will have at their disposal the substantial data base compiled by The Institute for Public Program Analysis in its performance of O-I's Phase I evaluation. Its components have been described in Chapter I.

The four data collection efforts proposed for the Phase II evaluation, also identified in Chapter I, are designed to supplement the already-available data where needed, at a minimum cost in terms of dollars and man hours required. There is the possibility that LEAA may elect not to pursue all of the Phase II activities, if the cost effectiveness of some is considered too low to merit expenditure of further resources. Consequently, the data collection tasks have been designed so that only those required need be undertaken, with the remainder being omitted. The basic objectives of each data collection effort and a dis-

cussion of how each relates to resolution of the nine O-I knowledge gaps of interest are presented in the following paragraphs.

1. Survey of Experts on Burglary and on the Processing of Burglary Cases in the Criminal Justice System

The ideal empirical test of O-I's basic assumptions would consist of unobtrusive observation of burglars as they plan and carry out their burglaries, and as they attempt to dispose of the property they have stolen. For obvious reasons the Phase II evaluators will require a more feasible approach for gaining more insight into O-I's impact. Previous evaluators, the Phase I evaluators included, have instead surveyed experts on burglary and on processing burglary cases in the criminal justice system. Such individuals as public prosecutors, burglary detectives, officers of pawn shop and anti-fencing squads, police property recovery personnel, police-community relations officers, operators of pawn shops and secondhand stores, police property tracing personnel, and convicted burglars themselves possess valuable knowledge regarding various aspects of burglary and how the criminal justice system deals with it.

A survey of such experts is proposed for providing input to five of the nine knowledge gap questions. They are, paraphrased in shorter form:

3. O-I's effectiveness as a PCR program?
5. O-I's effect on apprehension, prosecution, and conviction?
6. O-I's effect on the marketability of stolen property?
8. O-I's effect on the recovery of stolen property?

9. O-I's effect on the return of recovered property?

Chapter IV includes a discussion of the survey design and the use of its findings in answering these questions.

2. Examination of Police and Court Records on Reported Burglaries, Burglary Arrests and Case Processing, and Property Recovery and Return

Data relevant to six of the nine Phase II questions may be obtained from police and court records on reported burglaries, burglary arrests and case processing, and property recovery and return. Police crime reports filed by the officers dispatched to investigate burglary incidents contain information relating to four of the questions, again paraphrased in shorter form:

2. Adequate compliance by participants with O-I instructions?
4. Burglary reductions attributable to O-I or to other precautions?
7. Burglary displacement to participants' neighbors?
8. O-I's effect on the recovery of stolen property?

Data from these reports relevant to questions 2 and 8 are the descriptions of the stolen items. As indicated in the next chapter, this is to be compiled for a sample of participant and non-participant burglaries to determine if participants give more accurate descriptions of stolen property. For questions 4 and 7, the data of interest are the value of items stolen, and the dates and locations of the burglary incidents. Additional data items needed to answer these questions are to be derived from other sources, and are identified in subsequent sections.

Police arrest records and court records relating to burglary cases are needed for the evaluative effort proposed for question 5:

5. O-I's effect on apprehension, prosecution, and conviction?

Since so few arrests involving marked O-I property have occurred nationwide, the proposed analysis is based on a comparison of the outcomes of cases involving markable and unmarkable property.

For questions 8 and 9,

8. O-I's effect on the recovery of stolen property?

9. O-I's effect on the return of recovered property?

useful data will be obtained from police property recovery and property return records. Here again, since so few instances of the recovery of stolen O-I marked property have been reported by O-I projects, the analysis proposed below is based on a comparison of the recovery and return rates experienced for markable and unmarkable property.

3. Survey of Implementors of O-I Projects

For the Phase II evaluation, the purposes of the recommended survey of implementors of O-I projects are to gain information in areas not adequately covered previously, and to obtain more current information on events for which little data were available at the time of the Phase I surveys -- property recovery and return; and arrests, prosecutions, and convictions attributable to O-I. The survey design should provide data useful to six of the knowledge gap questions.

For question 1:

1. Adequate instructions to participants regarding implementing O-I?

implementors will be queried about the types of instructions given participants with particular emphasis on instructions relating to keeping participation current (e.g., replacing worn or faded decals.) The implementors will be asked about project services meant to facilitate keeping participants current (e.g., the availability of new decals to previously enrolled participants).

For question 2:

2. Adequate compliance by participants with O-I instructions?

the survey questions will deal with project records, if any, regarding participant compliance, and with other related evidence or experiences of the implementors.

Although the Phase I surveys dealt with some aspects of the PCR value of O-I, little specific evidence or insight into the mechanisms of O-I's PCR functions from the implementors' point of view were derived. Consequently, for question 3:

3. O-I's effectiveness as a PCR program?

this issue will be covered in the Phase II survey of implementors.

The remaining three questions for which data will be sought in the survey deal with assumed benefits of O-I for which very little supportive evidence existed at the time of the Phase I surveys:

5. O-I's effect on apprehension, prosecution, and conviction?

8. O-I's effect on recovery of stolen property?

9. O-I's effect on return of recovered property?

Since these presumed benefits, if occurring, would represent evidence of success, it is assumed that O-I implementors would be aware of relevant incidents and cooperate in relating these to the interviewers. On the other hand, if evidence of these benefits is still lacking, the Assessment's negative findings in these areas would be further confirmed.

4. Surveys of O-I Participants and Non-Participants

The Phase I research effort regarding participant and non-participant attitudes and awareness about crime, crime prevention, and O-I was based mainly on evaluative telephone surveys reported by O-I projects in Seattle, Denver and St. Louis. The following six knowledge gap questions are related to these issues, and were inadequately covered by the previous surveys:

1. Adequate instructions to participants regarding implementing O-I?
2. Adequate compliance by participants with O-I instructions?
3. O-I's effectiveness as a PCR program?
4. Burglary reductions attributable to O-I or to other precautions?
8. O-I's effect on the recovery of stolen property?
9. O-I's effect on the return of recovered property?

There are basically three methods for obtaining feedback from participants on these issues: a mailed questionnaire, a telephone survey, and an in-person survey. All three methods present disadvantages: the mailed questionnaire usually has

the lowest response rate and has an uncertain level of response accuracy; the telephone survey is more costly, reaches only persons having telephones, and is also uncertain, but allows somewhat greater verification of responses; the in-person survey is most reliable but prohibitively expensive. Additionally, regardless of the method chosen, participants and non-participants alike may be reluctant to divulge information about burglary preventive precautions they have taken.

Use of the telephone survey is recommended for the Phase II evaluation. The Seattle, Denver, and St. Louis projects used this method because of its ease of implementation, greater reliability than the mail survey, and cost savings compared to the in-person survey. These same criteria make it most attractive for the Phase II effort.

Since almost all the resources of any O-I project are devoted to recruitment and enrollment, and since O-I's deterrent benefits rely on participant compliance with enrollment instructions, it is important to assess both the quality of the instructions given, including how well they are understood by enrollees, and the extent of compliance. As previously indicated, the focus of Phase II inquiry in these areas will be on whether participants keep their participation current; and if so, how.

Questions 1 and 2,

1. Adequate instructions to participants regarding implementing O-I?
2. Adequate compliance by participants with O-I instructions?

will deal with these areas in the survey. Also, because the extent to which burglarized O-I participants complied with the instructions will be of particular interest (e.g., in determining whether or not the presence of O-I identifiers affected the items selected by the burglar), a special subsample of burglarized participants will be surveyed.

In seeking insight into question 3,

3. Is O-I an effective PCR program?

the survey will adopt the technique of the Illinois evaluation of O-I, in which participants were asked if their attitudes toward the police were improved by their involvement in O-I. A paraphrased version of the question may also be used in surveying non-participants, once the interviewer has explained the O-I program to them.

For question 4:

4. Burglary reductions attributable to O-I or to other precautions?

the survey will seek to establish the extent to which participants and non-participants have taken other burglary preventive precautions. The replies of burglarized participants will be of particular interest, when compared with those for non-burglarized participants and for non-participants. These data will be combined with information on reported burglaries obtained from police records to assess O-I's deterrence capabilities.

The final two questions to be addressed in the survey will be directed only to burglarized participants:

8. O-I's effect on the recovery of stolen property?

9. O-I's effect on the return of recovered property?

Hopefully, the responses obtained will supplement the meager knowledge presently available regarding the validity of O-I's assumed property recovery and return benefits.

C. Summary

Table 3-1 summarizes the relationships between the nine knowledge gap questions and each of the four Phase II data collection efforts. Use of the data collected in answering these questions is the subject of Chapter IV.

Table 3-1

KNOWLEDGE GAP QUESTIONS COVERED BY EACH OF THE PHASE II DATA COLLECTION EFFORTS

Question	Method of Data Collection			
	Survey of Experts	Police and Court Records	Survey of Implementors	Phone Surveys of Participants or Non-Participants
1. Adequate instructions to participants regarding implementing O-I?			X	X
2. Adequate compliance by participants with O-I instructions?		X	X	X
3. O-I's effectiveness as a PCR program?	X		X	X
4. Burglary reductions attributable to O-I or to other precautions?		X		X
5. O-I's effect on apprehension, prosecution, and conviction?	X	X	X	
6. O-I's effect on the marketability of O-I marked property?	X			
7. Burglary displacement to participants' neighbors?		X		
8. O-I's effect on the recovery of stolen property?	X	X	X	X
9. O-I's effect on the return of recovered property?	X	X	X	X

CHAPTER IV. METHODS FOR RESOLVING THE NINE KNOWLEDGE GAP QUESTIONS

A. Introduction

The following sections present methods for resolving each of the nine O-I knowledge gap questions using the types of data described in Chapter III. An attempt has been made to structure the analyses so that, if desired, each question can be treated separately, permitting the Phase II evaluator to deal with any subset of the questions. Each analysis specifies the data items needed, how they are used in drawing conclusions about the questions, what potential sources of error must be dealt with, and, where possible, what cost factors must be considered.

B. Question 1 - Do O-I Project Implementors Adequately Instruct Participants Regarding Property Marking, the Completion of Inventories, and the Posting of Decals (Including Procedures for Keeping Current After Initial Enrollment)?

This question is to be answered on the basis of telephone surveys of O-I project implementors and project participants. Other useful data may be obtained by review of the relevant portions of the Phase I Telephone and Field surveys materials. In the following discussion, the survey of implementors is treated first and is then followed by a discussion of the survey of participants.

The Phase I Telephone Survey reached 99 O-I projects in a five-week period, using three basically full-time interviewers. It is recommended that approximately one-third of

these projects be recontacted for the Phase II evaluation, taking care to select a representative sample. Considering the types of questions to be asked, this number should give sufficient accuracy at less than one-third of the cost of the Phase I survey (the Phase II survey will be much shorter). Included among these projects should be those for which participants will be contacted in the Phase II telephone survey of participants discussed later in this section.

The types of information requested from the O-I implementors should include the specific instructions given to participants, when and how they are given, and project efforts to monitor or measure participant compliance with these instructions. The kinds of questions to be asked to obtain this information are illustrated in Figure 4-1.

Analysis of the results of this portion of the survey of project implementors will be quite straightforward, involving only tabulation of the responses obtained. Although not recommended due to the extra effort involved, the evaluators may wish to correlate the replies with Phase I data on project size, age, funding level, and other attributes there recorded.

The Phase II telephone survey of participants should include a section relating to awareness of project-issued instructions regarding enrollment procedures.

Several factors must be taken into consideration in selecting the cities in which participants will be contacted. First, the local O-I projects must be receptive to the

(1) (For projects for which samples of written instructions for participants are not already available from the Phase I data base) Would it be possible to send the interviewer copies of written instructions for participants?

(2) Does the project make any attempt to encourage citizens to update their O-I participation? (If "Yes," how is this done? If "No", why not?)

(3) Does the project instruct participants to change markings if the original identifier no longer applies?

(4) Does the project instruct participants to mark newly purchased items? (If "Yes", how does the participant obtain the engraving tool?)

(5) Does the project instruct participants to add newly purchased items to property inventory lists? (If "Yes", and if duplicate lists are kept by the project or by the participants' insurance agents, are these duplicate lists updated also?)

(6) Does the project instruct participants to replace worn or faded decals? (If "Yes," how are the new decals obtained by the participant?)

(7) Is the person contacted aware of participants borrowing tools to update property markings? Changing original inventory lists? Requesting additional decals? (If "Yes", to what extent?)

(8) Has the project made any attempt to assess the degree of participant compliance with the above instructions?

(9) Is the person contacted aware of any other projects which have tried to make such an assessment? (If "Yes," which projects?)

(10) Do project records indicate whether people (a) checking out tools and (b) requesting decals are new participants or previous participants who are (a) updating markings (b) replacing old decals?

Figure 4-1

SURVEY QUESTIONS FOR O-I IMPLEMENTORS

Phase II study and must have sizable lists of participants' names and, preferably, telephone numbers for sampling purposes. Second, the projects should have been in existence for at least two years in order for the study to test the extent of participant updating. Third, at least some projects which request or require the use of a property inventory form should be included. Fourth, some of the projects should require enrollees to mark their own property. Finally, at least some of the projects should have access to good police burglary data bases and be able to identify a sizable number of participants who have been burglarized. Some of these attributes are relevant to other knowledge gap questions for which the participant survey will also provide data.

Local projects which fit most of the above criteria are located in St. Louis, Denver, New York, and Detroit. Additional sites can be identified, if desired, during the Phase II telephone survey of O-I projects. An appropriate sample of participants should be drawn from each of the selected sites, with the size and nature of the sample being determined by the total number of interviews to be completed, the number of participants enrolled in each project, and the number of years each project has been in existence. It is important to obtain a random sample of participants, stratifying the sample in order to include a sufficient number of participants who have been enrolled for at least two years, since these are most likely to have needed their participation

updated.

It will be useful to collect some basic demographic data on each survey respondent; the date that each joined O-I; and whether property was marked by the respondent or someone else, such as another member of the family or a project representative. The date of enrollment will be useful in several of the Phase II analyses, including that of assessing updating. Whether or not the respondent marked his own property may have an effect on his familiarity with the project and on his commitment to keep his participation up to date.

Samples of the questions to be asked of participants are shown in Figure 4-2. Analysis of the survey results will be similar to that for surveyed projects -- basically tabulation of the responses. Although the detailed makeup of the responses will be of interest, the main objective of the analysis will be to assess whether or not participants were aware of project issued instructions, particularly those relating to keeping their participation current.

Potential sources of error in the conclusions drawn from both the project and participant surveys will include confusion on the part of the respondents about the meanings of questions (e.g., due to differences in terminology), recall errors, and lack of respondent interest in the survey or in O-I. Care should be taken in selecting the respondent at each location contacted, so that the most knowledgeable individual is interviewed; this may require a second or third

(1) Were written instructions about how to participate in Operation Identification given to you when you enrolled in the program?

(2) What was your understanding of the proper procedure for:

- engraving your identifying mark on your property?
- posting the warning decals?
- completing the property inventory form?

(3) What instructions did you receive regarding:

- Changing the marks on property items if the original mark could no longer be used to trace ownership to you?
- Marking items brought into the premises after your initial enrollment?
- revising your property inventory when items were either removed from the premises or brought in after initial enrollment?
- replacing worn or faded warning decals with new ones?

Figure 4-2

SURVEY QUESTIONS FOR O-I PARTICIPANTS

phone call.

C. Question 2 - To What Extent Do Project Participants Follow These Instructions?

If O-I participants do not follow such instructions, or do not keep their participation current, the mechanisms by which O-I is thought to work cannot be fully effective. This component of the Phase II evaluation further assesses the extent of participant compliance. The necessary data can be obtained from three of the four data collection efforts described earlier:

- samples of police burglary reports may be examined for O-I participants and for non-participants to determine if participants are able to give better descriptions of stolen property (having complied with instructions to inventory marked property) than are non-participants;
- O-I project implementors may be queried regarding project services and procedures relative to participant compliance, particularly in connection with keeping participants current after initial enrollment; and,
- O-I participants may be asked about the extent to which they marked property, completed inventories, posted decals, and made efforts to keep these current after initial enrollment.

The collection and analysis of these data are described in the following three sections.

1. Are Better Property Descriptions Obtained From O-I Participants Who Have Been Burglarized Than From Non-Participants Who Have Been Burglarized? By marking and inventorying their property, O-I participants can presumably provide police with better descriptions of stolen property. The extent to which better descriptions have been provided, how-

ever, has never been tested. This assumption is also of some importance beyond the question of participant compliance with enrollment instructions, since the descriptions are sometimes used to facilitate property recovery, and to match recovered property with owners.

As suggested above, this assumption may be tested by examining samples of police burglary reports for both O-I and non O-I victims. Appropriate data to collect from the reports are the stated values of items reported stolen and whether they are described with O-I numbers, model identification, brand name, serial numbers, year of manufacture, color, or other item attributes such as are suggested by O-I property inventory forms, many samples of which are contained in the Phase I data base.

Once the property values and description data have been compiled, an operational definition of adequate property description must be constructed. This definition should be used to compute the fractions of the value stolen for which adequate property descriptions were given for participants and, separately, for non-participants. A simple chi-square test may then be used to detect significant differences, if any, between the fractions.

A potential source of error in such a test is that participants may be more likely to offer property descriptions to police than non-participants, for reasons other than participation in O-I. For example, participants may be more

crime-conscious and feel that the information would be useful in the burglary investigation, whereas many non-participants may not believe the information would be useful. Some control for this phenomenon may be obtained by surveying both regarding their views on providing property descriptions. However, considering the effort required, it is not recommended. Differences in report writing habits among police officers will also affect the overall analysis. Although procedures for completing burglary reports are standard, officers will differ in how thoroughly they solicit information and record it on the reports.

The St. Louis Commission on Crime and Law Enforcement, the local agency through which the St. Louis O-I project is funded, maintains computerized O-I participation records for St. Louis O-I participants, including the address and enrollment date for each. These records may be easily used to draw a sample of burglarized participants. As in previous St. Louis evaluation efforts, the computerized participant address file may be compared with a computerized file of reported burglaries maintained by the police department to identify participant addresses at which burglaries have been reported. For each such burglary, the complaint number (police report number) may be identified and used to retrieve copies of the original police reports for analysis as described above. The same procedure may be used to draw a sample of reports of burglaries at non-participating premises. It

is suggested that this sample be chosen by selecting addresses close to participants' addresses, to partially control for important intervening socio-economic variables such as race and income. A drawback of the St. Louis data is that many participants are apparently not registered with the project, and thus are not in the participant file. If desired, a check of the non-participant sample can be made to verify their status. Most other projects, however, suffer from a more serious data problem in that many participant burglaries are unknown to the project.

2. Are O-I Project Implementors Facilitating Participant Compliance? Results of the telephone survey of O-I project implementors described above may also be used to gain insight into the extent of participant compliance with enrollment instructions, and of project services designed to facilitate or assess compliance. Such assessment efforts can shed light on both initial and subsequent participant activities (i.e., those related to keeping participation current). Reference to the discussion of Question 1 provides further details.

3. What Level of Compliance Do Participants Report? The Phase II telephone survey of O-I participants may be used to solicit information on O-I enrollment and updating activities such as the number of items marked and inventoried, the updating of property markings and inventories, and the continued use of project decals.

Regarding the number of property items marked, it has been pointed out that if few items are marked by each participant this would appear to defeat most of the assumed theft deterrent, property recovery, and return benefits of such marks. Therefore, it is important to know how many items participants mark. Suggested participant survey questions for assessing the extent of marking are presented in Figure 4-3. The last question may be used to assess the extent to which certain commonly stolen, markable items are marked, and will also be useful in analysis of the theft deterrent effect of the marks (see Question 4 below).

Suggested survey questions relating to the initial use of property inventory forms by participants are illustrated in Figure 4-4.

Adequate updating of O-I participation should include the marking and inventorying of newly-purchased items, the re-marking of all items if the original identifier used no longer applies, and the replacement of worn or faded decals. It is important to know the extent to which participants can be expected to continue updating activities on their own. This will give some indication of the amount of effort local projects will need to devote to maintenance of the participation of previously recruited citizens. If a great deal of effort is required, it will substantially raise the projects' operating costs and costs per participant.

The types of questions to be asked of participants

(1) When you first enrolled in O-I, about how many property items in your premises were marked with identifying numbers? (none, 1-5, 6-10, 11-15, 16-20, over 20, or don't know).

(2) Who performed the property marking? (yourself or other resident, project staff member, other?)

(3) Of the following types of items, please indicate how many you now own and how many are presently marked:

Item	Number Owned	Number Marked
Portable TV	( )	( )
Camera	( )	( )
Portable Radio	( )	( )
Calculator	( )	( )

Figure 4-3

SURVEY QUESTIONS FOR O-I PARTICIPANTS

(1) When you first joined O-I, did you make an inventory list of your personal property? (If "No," why not: was not instructed to do so; did not think it necessary; or did not have the time to do it) (Yes___.)

(2) If you inventoried your property did the list include for each item:

(a) the make and model?

(b) the serial number?

(c) the date of purchase or year of manufacture?

(d) the purchase price?

(e) the color?

(f) the identifying mark used for engraving?

(3) Do you still have this property list in your possession? (If "No," why not?) (Yes___.)

(4) Do you know where it is located? ("Yes," "No," or "Not Sure.")

(5) When you first enrolled in O-I, about how many items did you include on your property inventory list? (None, 1-5, 6-10, 11-15, 16-20, over 20, or don't know.)

(6) Did you take any other measures to list or identify property which could not be engraved? (Such as taking pictures of items, recording detailed descriptions of items, or marking with "invisible" ink?) If so, how many items did this include?

Figure 4-4

SURVEY QUESTIONS FOR O-I PARTICIPANTS

regarding the updating of property marks are illustrated in Figure 4-5; questions to determine the extent to which property inventory lists have been updated, and worn or faded decals have been replaced are shown in Figure 4-6.

Analysis of the survey responses will require only simple tabulation and the computation of the percentages of respondents giving the various types of replies specified for the questions.

D. Question 3 - Is O-I an Effective Police-Community Relations Program?

Police-community relations (PCR) programs serve many functions for police agencies. Common objectives are to involve citizens and neighborhood groups in crime prevention programs, educate the public regarding police services and crime hazards, and provide an additional avenue for communication between the community and the police. Successful achievement of these objectives is very difficult to measure since the phenomena of interest involve interpersonal relations and public attitudes towards government services. Thus, many of PCR's direct "products" are subjective in nature, involving attitudes, awareness, and personal feelings -- those of police personnel as well as of the public. PCR's non-subjective "products" are mainly citizen organizations formed to deal cooperatively with the police on local crime problems.

In structuring the Phase II evaluation plan for assessing O-I's effectiveness as a PCR program the research team, drawing

(1) What identifier or mark did you use when you first enrolled in O-I? (driver's license number, social security number, name or initials, address, NCIC location code, telephone number, zip code, unique number assigned by O-I project, or other?)

(2) Can this identifier still be used to trace a recovered stolen item back to you? (If "No," how many items have been remarked with a traceable identifier?)

(3) Have any marked items since been sold? (If "Yes," what was done about the markings on those items? Nothing, marks were crossed out, new owner put his number next to old one, new owner received bill of sale, don't know.)

(4) Have any additional items been marked since your original enrollment in O-I? (If "Yes," how many? If "No," why not? None purchased; did not think of it; lost interest in O-I; no easy access to an engraving pen.)

Figure 4-5

SURVEY QUESTIONS FOR O-I PARTICIPANTS

(1) Since you originally joined O-I, have you added any items to your property list? (If "Yes," how many? If "No," why not? None purchased; lost list; lost interest in O-I; inconvenient to retrieve list for this purpose.)

(2) Have you ever deleted any items from your property list? (If "Yes," why, and how many? If "No," why not? None sold or discarded; list lost; lost interest in O-I; inconvenient to retrieve list for this purpose.)

(3) If either of the above have been done, were any duplicate copies of the list also updated? (Yes___. No___.)

(4) How many warning decals did you originally post on your premises?

(5) Are the original O-I decals which you posted still in place? (If "No," why not? How long did the original decals last?)

(6) Have you posted any additional decals since posting the original ones? (If "Yes," why? To replace original ones; to provide extra protection. If "No," why not?)

(7) If additional decals were posted, how were these obtained? (Had extras from original enrollment; obtained decals from O-I project; obtained decals from a friend; don't know.)

Figure 4-6

SURVEY QUESTIONS FOR O-I PARTICIPANTS

on the findings of the Assessment study, decided to focus on two basic questions:

- What specific contributions can O-I make to a police agency's PCR program? and,
- If O-I is basically ineffective in deterring burglary at the community-wide level, is it still worthwhile as a PCR program?

The evaluation plan proposed is modest in scope, seeking more to gather relevant, reasonably accessible information than to provide an air tight analysis of the issues. A complete treatment of the effectiveness of PCR programs in achieving police objectives would require an effort at least the equivalent of that for the present study for O-I. This kind of investment does not seem warranted solely to resolve the PCR benefits of O-I. (Some of the other Phase I evaluations funded by LEAA's National Evaluation Program may shed some light on this issue. Included are "Citizen Crime Reporting Programs" and "Citizen Patrol Projects," both of which are incomplete as of this writing).

The proposed evaluation plan is based on information to be gathered from three of the four Phase II data collection activities: the survey of experts on burglary and the processing of burglary cases in the criminal justice system, the survey of implementors of O-I projects, and the surveys of O-I participants and of non-participants. For the first two of these an open-ended, informal style of survey is recommended; for the third a closed-ended, more highly structured style is

suggested.

The "experts," to be surveyed in this case should include public prosecutors, burglary detectives, officers of pawnshop, PCR, and anti-fencing units, and operators of pawn shops and second hand stores. The interview questions should be constructed to solicit the types of information indicated in Figure 4-7. Admittedly, this line of questioning will not provide hard and fast answers about O-I's PCR benefits; rather it is intended to expose the practical problems and actual environment within which these benefits, if valid, must operate.

A similar format is recommended for the survey of O-I implementors -- namely, to identify specific experiences which demonstrate supposed PCR benefits of O-I, and to solicit opinions about the use of O-I for PCR purposes if its burglary deterrence capabilities are found to be inconsequential.

In surveying O-I participants and non-participants the main objective should be to determine if contact with O-I, or knowledge about police promotion of O-I, has raised the interviewee's opinion of the police agency and of its efforts to aid citizens in protecting themselves from crime. This approach was followed in the 1974 evaluation of O-I in Illinois.[1] Participants were asked:

"Before the Operation Identification program started, how much of a problem did you feel that crime was in this community?

"Before you participated in Operation Identification, how did you feel about the way your local police were handling their

(1) Is the interviewee aware of O-I and how it works?

(2) How has O-I personally affected the interviewee's job or business, if at all?

(3) To what extent has the interviewee been able to observe the involvement of others in O-I?

(4) When the interviewee first learned about O-I how did it affect his feelings about the implementing agency and about PCR?

(5) Has the interviewee had any experiences with O-I which illustrate positive or negative effects of O-I on PCR?

(6) How does the interviewee compare O-I's PCR benefits with those of other PCR programs such as Block Watch, Police Athletic League, etc.?

(7) If O-I was found to be largely ineffective as a burglary deterrent at the community level, would it still be worthwhile as a means for promoting public awareness of the burglary problem, or for promoting participation in other crime prevention programs?

Figure 4-7

SURVEY QUESTIONS FOR "EXPERTS"

jobs?"

"Since participating in Operation Identification, how do you think the crime situation in your neighborhood has changed?"

"How would you say that your experience with this program has affected your opinion about the way your local police are handling their jobs?"

Non-participants were asked:

"Do you think crime is a problem in this community?"

"How do you feel about the way your police are handling their jobs?"

"How do you feel about a program like Operation Identification (a program which urges citizens to mark household valuables to deter theft)?"

These questions may be adopted, or adapted by the Phase II evaluator. By comparing participant attitudes before joining O-I with those of non-participants it should be possible to determine whether participants tended to be more favorably disposed towards the police before joining than those who did not join. A comparison of participant attitudes after joining with those they held before joining will give an indication of attitude changes brought about by participation.

In addition to the above described procedures, the Phase II evaluator may be tempted to assess the relative cost effectiveness of PCR benefits gained through O-I compared to those derived from other types of PCR programs. To accomplish this it will be necessary to examine the productivity and costs of the alternative programs -- an extremely difficult task because no adequate, operational productivity measures exist for these programs. If undertaken at all, the analysis should

be mainly qualitative rather than quantitative, and, in the opinion of the authors, should be considered a low priority activity.

E. Question 4 - Are the Reduced Burglary Rates Experienced by O-I Participants Attributable to O-I (or Do They Arise from Other Crime Prevention Measures Also in Effect)?

Although O-I participants experience lower burglary rates after joining O-I than previously, and lower rates than non-participants, it is possible to advance explanations of this deterrent effect which are not directly attributable to O-I. One such hypothesis is that O-I participants are more crime conscious than non-participants and therefore take other crime-prevention precautions. If true, these other precautions may be responsible for the burglary deterrence rather than O-I.

The two basic assumptions are that:

- O-I participants take other crime-prevention measures more frequently than do non-participants; and,
- the presence of additional crime-prevention measures results in lower burglary rates for O-I premises which employ them.

To test the first of these assumptions it is proposed to employ a phone survey of a sample of participants and non-participants. To test the second assumption it is necessary to examine the burglary rates experienced by O-I participants as a function of whether or not they have taken additional precautions. Detailed plans for both tests are given below.

Another unresolved aspect of O-I's burglary deterrent effect is the assumed aversion burglars have for marked

property. To assess the extent to which O-I markings actually are effective theft deterrents it is necessary to:

- determine the extent to which commonly stolen property items can be so marked; and,
- demonstrate that marked property items are taken in burglaries less frequently than similar, unmarked items.

Plans for conducting these two evaluative activities also follow.

1. Do O-I Participants Take Other Crime-Prevention Measures More Frequently Than Do Non-Participants? To answer this question it is necessary to compile information on the types of crime-prevention measures taken by O-I participants and non-participants. The feasibility of obtaining such information using a telephone survey has been demonstrated in two previous evaluations of O-I, conducted in Denver and St. Louis, where participants and non-participants were asked to detail the precautions they had taken. Although it was anticipated that interviewees would be reluctant to divulge such information over the phone to unknown interviewers, this proved to be less of a problem than expected. Apparently, the formal structure of the interview, the credibility of the surveying agency, and the use of preliminary, crime-related questions all aided in gaining the trust of the respondents. Of course, some still-suspicious respondents may have chosen to give fictitious replies, including exaggerating the precautions taken at their premises, adding further uncertainty to the data.

Despite these drawbacks, it is recommended that a tele-

phone survey be used for the Phase II assessment of this question. In-person interviews appear to be subject to the same drawbacks as phoned interviews, and are considerably more expensive. Alternatively, the Phase II evaluator may choose to use a mailed questionnaire, on the letterhead of the local police agency or of a local congressman to gain credibility, and distribute sufficient numbers of questionnaires to assure an adequate number of replies even at a low response rate. The following discussion assumes that the phone survey is used, but adaptation of the methods to a mailed survey can be easily accomplished.

The selection of cities in which participants are to be contacted, and the construction of the sample of participants to be surveyed have been previously discussed under Question 1. Since it will also be of interest to assess the burglary rates of participants as a function of the types of other precautions taken, it is recommended that the sample include, as a separable component, all participants who have reported burglaries since joining O-I (i.e., a 100 percent sample). This aspect of the assessment is discussed in the next section.

The sample of non-participants may be drawn by pairing a non-participant with each participant in the participant sample. This may be accomplished with a reverse telephone directory (usually available at public libraries or, for a rental fee, from the local telephone company) by selecting an address near that of the participant. Of course, some

participants may not be so listed in the local O-I project's files, so non-participant status should be verified at the start of each non-participant interview. This type of pairing helps to control for demographic variables such as race, socio-economic status, and neighborhood crime rates.

In examining the deterrent effects of target hardening precautions other than O-I, it is useful to discriminate between the types and numbers of such precautions in effect at surveyed premises. Consequently, the number of such precautions to be considered in the survey must be limited (e.g., inclusion of only three burglary-prevention measures produces eight different possible combinations of target-hardening measures, and inclusion of five measures results in 32 combinations).

Previously-conducted interviews with convicted burglars indicate that, of the self-initiated crime preventive measures available, those found most effective were alarm systems, strong locks, and watchdogs. Therefore, these three classes of precautions are recommended for use in this facet of the Phase II evaluation. Care must be taken to provide adequate definitions of the precautions of interest (e.g., does a strong lock on only one of several entrances constitute utilization of that technique? does an alarm system installed by a previous tenant qualify as a precaution taken by the present inhabitant? etc.).

To facilitate the analysis of the burglary rates for

premises for which these types of precautions apply, the following questions should be included in the participant survey:

- How many months have you been a participant in the O-I program?
- Did joining O-I motivate you to take any other measures at the same time to protect your premises from being burglarized?
- During the year prior to joining O-I how many times, if at all, were your premises burglarized?

For burglarized participants, in addition to the above questions, include:

- How many times have your premises been burglarized since you enrolled in O-I?

Once the survey is completed, the collected data may be analyzed using a contingency table of the type shown in Table 4-1. In order to avoid any bias in the participant sample data which may result from inclusion of the 100 percent sample of burglarized participants, the evaluator may choose to include only a proportionate sample of burglarized participants in this aspect of the evaluation. A chi-squared contingency table test may then be used to test for significant differences between the precautions taken by particpants and non-participants.

2. <u>How do Burglary Rates for O-I Participants Vary as a Function of Other Crime Prevention Measures Also Used?</u> This facet of the Phase II evaluation seeks to isolate the deterrence effects of O-I from those of other crime prevention activities also operating, by comparing the burglary rates for

Table 4-1

CONTINGENCY TABLE FOR STUDYING THE RELATION BETWEEN O-I PARTICIPATION AND UTILIZATION OF OTHER CRIME-PREVENTION PRECAUTIONS

Number of Respondents		None	Alarms	Locks	Dogs	Alarms and Locks	Locks and Dogs	Alarms and Dogs	Alarms Locks & Dogs
O-I Participants									
Non-Participants									

O-I participants who had and had not taken precautions in addition to O-I. The analysis is based on the data for participants compiled for Table 4-1, and on the similar data compiled for burglarized participants (for whom a 100 percent sample has been recommended to increase the reliability of the burglary rate estimates). It proceeds in three steps:

- estimate the total number of participants who have taken each type of precaution;
- estimate the "before" burglary rates (i.e., for the year prior to joining O-I); and,
- estimate the "after" burglary rates (i.e., since joining O-I).

Since data from several cities may be used in this analysis, it is assumed in the following discussion that either the data from all cities have been aggregated, or that the evaluator will repeat the analysis for each city included.

The data of Table 4-1 are used to compute the fractions of participants sampled who have taken each type of precaution; these estimates are then scaled up to estimate the numbers of participants falling in each category if a 100 percent sample had been taken. Let these estimates be represented by:

N_o - number of participants having taken no precautions other than joining O-I

N_i - number of participants who took precaution i

N_s - number of participants who took at least one precaution other than joining O-I

Burglary rates for the year prior to joining O-I are estimated by using for each precaution category the total

number of burglaries reported and the number of participants contacted. Expressed in burglaries per participant per month, the estimates are computed by dividing the total number of burglaries reported by 12 times the number of participants. Let these estimates be represented by:

P_o - burglary rate for the year prior to joining O-I for participants who took no other precautions

P_i - burglary rate for the year prior to joining O-I for participants who had previously taken precaution i

P_s - burglary rate for the year prior to joining O-I for participants who had previously taken at least one other precaution

In order to compute the comparable burglary rates for the period following enrollment it is necessary to estimate for each precaution category the average length of time participants have been enrolled. This may be done using the survey responses for the corresponding question. Let these estimated enrollment times, in months, be given by T_o, T_i, T_s. If R_o, R_i, and R_s are the numbers of burglaries reported since joining O-I for participants in the different precaution categories, then the burglary rates following enrollment (let these be called A_o, A_i, and A_s) are estimated by:

$A_o = R_o/N_oT_o$

$A_i = R_i/N_iT_i$

$A_s = R_s/N_sT_s$

To simplify the following discussion, only those participants who either took no other precautions or took at least one other precaution are considered (the analysis is identical

if the individual types of precautions are to be considered separately). Table 4-2 shows how the "before" and "after" burglary rates may be arranged for comparison.

Table 4-2

BURGLARY RATE COMPARISONS

Time Period	Precautions Taken	
	Only O-I	O-I Plus Other(s)
Year Prior to Enrollment	P_o	P_s
Period Since Enrollment	A_o	A_s

The ratio of P_o to P_s will indicate whether burglary rates prior to enrollment were similar for those who had taken other precautions and those who had not. Similarly, the ratio of A_o to A_s will indicate whether joining O-I produced the same burglary deterrent effect for those who took no other precautions as for those who did. If the numbers of burglaries on which these estimates are based are small, or if any of the ratios given above are close to unity, the evaluator may wish to use an appropriate statistical method to test the significance of any differences in the various burglary rate estimates.

Potential sources of error in the above analysis may be introduced by dramatic community-wide burglary rate increases

or decreases (i.e., trends) or by seasonal variations in the burglary pattern (if the "before" or "after" periods tend to cover only part of a pronounced seasonal pattern). It may also be possible that the after to before comparisons will contain a regression artifact error due to a tendency for persons to join O-I shortly after experiencing a burglary.[2] If the evaluators have reason to suspect this phenomenon is taking place, the "before" period should be changed to two years instead of one.

3. <u>What Proportion of the Value of Commonly Stolen Items Can be "Protected" by O-I Property Identification Marks?</u> The extent to which commonly stolen items are not markable is an important limiting factor in O-I's ability to deter theft (if such marks "protect" the property), and also in its ability to identify property with owners. Analysis of burglary data compiled for previous studies of items taken in burglaries show that approximately one half of the items stolen are not markable (such unmarkable items are money, liquor, and clothing). The evaluation activities proposed in this section are designed to provide a more reliable estimate of this fraction, and to permit its computation in terms of the value of items stolen rather than only the number. An additional benefit of this evaluation will be a more accurate determination of which items are commonly stolen.

Data on the types and values of items stolen in burglaries may be obtained by sampling police burglary reports from

several of the cities in which other aspects of the Phase II evaluation are being conducted. If a survey of burglary reports is to be made in connection with Question 1's assessment of the quality of property descriptions given in burglary reports, data for the present question may be collected at the same time. A set of categories of items stolen must first be constructed to permit classification of items subsequently extracted from the burglary reports. Several such classification systems have been developed previously. For example, the following classifications were used in a study of residential burglaries in Sacramento, California:[3]

Money	Jewelry	Furniture
Televisions	Furs	Appliances
Stereos	Cameras	Typewriters
Radios	Guns	Food
Clothing	Tools	Liquor
Bicycles	Tape Recorders	Miscellaneous

An alternative list appears in Scarr's study of burglary patterns.[4] Some of the O-I property inventory forms, such as Denver's, contain useful lists as well (for unmarkable as well as markable items). Since the categories will be used to distinguish between markable and unmarkable items, they should be defined in a manner which prevents any single category from containing both markable and unmarkable items.

Proposed classification systems should be pretested on a sample of burglary reports to verify that stolen items can be

easily assigned to the correct categories. When a final set of classifications has been devised a final pretest should be made for the purpose of preparing a coder's manual. This manual should contain procedures for assigning unusual items to categories; this will aid in maintaining inter- and intra-coder reliability.

At this point the coding of burglary reports can begin. The reports sampled in the different cities included in the assessment should be for similar periods of time and similar types of burglaries (e.g., residential burglaries). For each item reported stolen its classification and reported value should be recorded; a special code should be identified for use when no value is given in the report -- these items can later be treated separately.

Once the data have been collected their analysis will be quite simple. The value total for each category, and whether or not the category refers to markable property, are used to compute the fraction of the value of items stolen which are markable. An indication of the extent to which items in the various categories are stolen will be given both by the category's value total and by the number of items recorded for the category.

4. Are O-I Marked Property Items Stolen in Burglaries of O-I Premises Less Frequently Than Unmarked Items? If the presence of an O-I mark on a property item helps to prevent its theft in a burglary, then a survey of burglarized O-I

participants should reveal that marked property items of a given type were taken less frequently than similar unmarked items also available in the premises. Such a survey is proposed for the Phase II evaluation. Since a survey of burglarized participants is to be used for the research proposed for Question 4 in the preceding subsections, the appropriate questions for the present analysis may be easily appended.

It will be recalled that one of the survey questions proposed under Question 2 (for O-I participants in general) was:

"Considering the following types of items, please indicate how many you now own and how many of these are presently marked:

Item	Number Owned	Number Marked
Portable TV	( )	( )
Camera	( )	( )
Portable Radio	( )	( )
Calculator	( )	( )

Replies to the above question will provide a convenient basis for comparison if burglarized participants are asked:

"For the following types of items, please indicate the number you have owned, whether or not they carried your O-I property identification mark at the time of the burglary (or burglaries), and whether or not any were stolen:

Item	Number Owned		Number Stolen	
	Marked	Unmarked	Marked	Unmarked
Portable TV	( )	( )	( )	( )
Camera	( )	( )	( )	( )

Item	Number Owned Marked	Number Owned Unmarked	Number Stolen Marked	Number Stolen Unmarked
Portable Radio	( )	( )	( )	( )
Calculator	( )	( )	( )	( )

Once the data are collected in this form it will be possible to compare the theft rates for marked and unmarked items of each of the four types listed. If desired, a chi-square contingency table can be constructed to perform the comparison. Similarly, such a table can be used to compare the extent of property marking by burglarized participants with that of participants in general, as indicated by the data from Question 2's survey.

F. Question 5 - Does O-I Increase A Burglar's Risk of Apprehension, Prosecution, and Conviction?

One of the central assumptions about O-I's burglary deterrent effect is that burglars will avoid O-I premises because of the increased risk of apprehension, prosecution, and conviction. The Assessment study has found no convincing evidence to support this assumption. Proponents of O-I would argue that it has not yet been possible to observe this aspect of O-I's impact on burglary because:

- participation rates are still too low to generate sufficient numbers of O-I burglaries for study;
- O-I's deterrent effect appears to be supported by burglary data for participants;
- apprehension rates for property crimes are very low, so possible O-I related apprehensions must be even less likely; and,
- frequent use of plea bargaining causes some burglary

cases to be disposed of as lesser offenses.

The proposed Phase II evaluation of this issue includes three research tasks designed to compile evidence of a valid impact, if any, based on recent O-I experience (i.e., since the completion of the Phase I study), and also to assess the potential impact based on a study of burglary arrests. The three tasks are:

- a survey of experts such as public prosecutors, burglary detectives, and officers of pawn shop and anti-fencing units;
- a study of the processing of burglary arrests through the courts; and,
- a survey of the implementors of O-I projects regarding recent experience with O-I related apprehensions, prosecutions, and convictions.

Procedures for completing each of these research tasks are given in the following paragraphs.

1. How Do Experts Assess O-I's Impact on the Burglar's Risk of Apprehension, Prosecution, and Conviction? During the Phase I evaluation of O-I the research team contacted 28 individuals who were not employed by O-I projects and whose jobs gave them an opportunity to observe O-I's effect on apprehensions, prosecutions, and convictions. Included were seven police property officers, eight detectives, eight planner-evaluators, two prosecuting attorneys, two administrative assistants to police chiefs, and one city manager. These individuals commented on aspects of the criminal justice

system and of burglary which affect O-I's ability to increase a burglar's risk of apprehension, prosecution, and conviction (hereafter abbreviated as APC). Much useful insight was gained in this manner, but the relatively small number of persons contacted prevents generalization of the findings. Since further survey contact is proposed with such experts, whose experience relates to both actual and potential APC benefits of O-I, for other parts of the Phase II evaluation, it is suggested that an addition to the survey be used to assess APC.

A survey of this nature can be conducted using telephone interviews. Based on the experience of the Phase I effort, however, in-person interviews appear more productive. Therefore it is recommended that the Phase II evaluator visit a number of cities in which O-I is most likely to have impacted APC, and that arrangements be made to meet with five to 10 appropriate individuals in each. During the Phase I telephone survey of O-I projects five cities having populations over 100,000 reported more than 10 percent citizen enrollment in O-I (Wichita, Kansas; Cincinnati, Ohio; Phoenix, Arizona; Denver, Colorado; and St. Louis, Missouri). These cities are recommended for inclusion in the proposed survey.

An informal, open-ended survey is suggested. Information to be solicited should include the following:

- the potential value of identifiable property in providing police officers with cause for detaining suspects, as an aid in obtaining arrest warrants, as evidence in criminal prosecutions, and as a substitute for witnesses at various stages of judicial processing;
- the extent to which these potential values, if any, have been realized to date; and,
- the relative merits of O-I identifiable property compared to property with serial numbers, and other types of evidence.

Results of the survey, once completed, should be tabulated and summarized in a short report.

2. <u>What is the Current Pattern of Case Dispositions for Court Processing of Burglary Arrests?</u> According to the most recent FBI statistics (1973), about one fifth (18 percent) of burglaries reported to the police nationwide are cleared by arrest. The Assessment study could find little information regarding O-I's impact on the case dispositions arising from such arrests. Ideally, cases involving marked O-I property as evidence could be compared with those that do not, to evaluate the benefits gained from O-I. Since so few instances or arrests involving marked O-I property have been reported nationwide, a more practical approach appears to be an assessment of the role <u>markable</u> property plays as evidence in court processing of burglary cases. If, for example, the presence of markable property evidence has little effect on the disposition of these cases, then it is extremely unlikely that O-I marked property will have much of an effect either. On the other hand, an important role for markable property in burglary case dispositions would suggest possibly significant

potential benefits from more widespread O-I engraving.

A tabular format for the analysis of court processing of burglary cases is shown in Table 4-3. The related data collection should be undertaken in three or more cities in order to minimize any biases arising from unusual local procedures for case processing. The cost of collecting case disposition data from court records can be very high, since most courts still rely on inefficient, manual record systems. In recent years automated court information systems have been adopted with greater frequency. It is recommended that such automated systems be employed for data collection for the present study. A list of cities employing the PROMIS (Prosecutors Management Information System) data software, developed with LEAA support, may be obtained from LEAA. It may be used as a basis for selecting the cities to be included.

It is not likely that automated court records will indicate the role of evidence, if any, in case dispositions. This information will have to be obtained from the original police arrest reports or arrest warrant applications. Consequently, the study should proceed by first drawing a sufficient sample of arrest reports or warrant applications, and later make use of the information system to discover the dispositions of the cases in the sample (each classified according to whether markable or unmarkable property was used as evidence). Special consideration will have to be given to cases involving multiple burglary charges, if only some of them involve markable

Table 4-3

SUGGESTED TABULAR SUMMARY OF COURT PROCESSING OF BURGLARY CASES WITH MARKABLE AND UNMARKABLE PROPERTY AS EVIDENCE

Disposition	Cases with Markable Property as Evidence	Cases with Unmarkable Property as Evidence
Warrant Requested		
Warrant Refused		
Nolle Prosequi		
Pre-Trial Disposition		
Guilty Plea		
Acquittal		
Conviction		
Other Disposition		
Total		

property. Possible strategies include (1) treating each charge separately, or (2) classifying a case as involving markable evidence if such is true for any of the charges; it will then be necessary to develop a decision rule for assigning a single disposition to the case. The validity of results derived using the first approach could be affected by the extent to which plea bargaining is used in the jurisdiction, and by such factors as the prosecution workload (which usually affects the number of charges prosecuted or dropped). If the second approach is taken, a bias may occur in favor of the role of evidence in achieving successful dispositions, since cases involving multiple charges (i.e., more than one burglary) are more likely to involve at least one item of markable property as evidence and are also more likely to result in successful disposition (e.g., a conviction on one or more charges).

Once the data have been compiled in the form suggested by Table 4-3, a chi-square contingency table test may be used to test for significant differences in the dispositions of cases involving markable evidence and those involving unmarkable evidence.

3. Has Recent O-I Project Experience Yielded Any Further Evidence of O-I's Effect on A Burglar's Risk of Apprehension, Prosecution, or Conviction? Since evidence of O-I's APC capability reinforces an O-I project's convictions regarding its own merits, it is likely that O-I implementors will be cooperative in sharing any such recent evidence with the Phase

II evaluator. Questions such as those proposed above for the survey of experts would be adequate. If such a survey indicates little further evidence of APC benefits this will provide added confirmation of the basically negative findings of the Assessment. If, however, more encouraging results are encountered, further study of such data may provide better insight into methods for enhancing O-I's APC benefits in other cities.

G. Question 6 - Is the Marketability and/or Market Value of Stolen Property Decreased Because of Property Marking?

The apparent ease with which stolen property can be marketed is one of the significantly weak links in society's efforts to control property crimes. Proponents of O-I have conjectured that the presence of an easily traceable identification mark on property items will decrease the marketability and/or market value of stolen property since purchasers will thereby be put on notice of the "hot" nature of items offered for sale. Interviews of convicted burglars, conducted in connection with earlier evaluations of O-I, suggest that this effect is minimal at best, but too little evidence is at hand to draw reliable conclusions. Two research tasks are proposed for developing a more reliable assessment: a review of related research literature, and a survey of knowledgeable police personnel and persons employed in the legitimate sale of secondhand property.

The illegitimate nature of the sale of stolen property makes research on the phenomenon very difficult. Consequently, few good studies have been reported in the literature. A use-

ful report has been prepared by Chappell and Walsh of the Law and Justice Study Center of Seattle's Battelle Institute.[5] The U.S. Senate has also conducted hearings on "criminal redistribution systems."[6] Further relevant material may be available from unpublished thesis research (available from University Microfilms of Ann Arbor, Michigan), and from federally funded research projects (accessible via the National Criminal Justice Reference Service, or the National Technical Information System). Review and synthesis of this material are suggested as the first step of the related Phase II evaluation.

A subjective appraisal of the extent to which O-I markings influence property items' marketability through fences, dealers in secondhand merchandise, and other outlets, can be obtained by surveying burglary detectives, convicted burglars and fences, secondhand dealers, and members of pawn shop and anti-fencing units from a representative sample of police departments. Relevant questions may be appended to the survey of experts proposed earlier for other facets of the Phase II evaluation. Again, an in-person, open-ended style of interviewing is suggested.

Interviewing convicted burglars or fences presents special problems which should be carefully considered before deciding whether to use this technique. These problems include obtaining permission to conduct the interviews (both from the potential respondents and from the correctional institutions), especially interviews of juvenile offenders (who account for

about half of the arrests for burglary); difficulties in drawing a representative sample of interviewees; and the ability to obtain truthful, reliable data from respondents.

Some additional insight into O-I's ability to deter burglary through reduced marketability and/or market values of stolen property may be gained from the study proposed earlier in connection with assessment of the number of property items engraved by O-I participants (see Question 4). If a burglar is likely to find few marked items among his loot, the net effect can at best be only a minimal reduction in his economic gain.

H. Question 7 - Are Burglaries Displaced From O-I Participants to Their Non-Participating Neighbors?

This portion of the Phase II evaluation is designed to assess O-I's effect on the burglary rates experienced by the non-participating neighbors of O-I participants. If the former are found to experience lower burglary rates this would provide much needed evidence of O-I's value to the community, and suggest that community-wide burglary rate reductions might be achieved at lower participation rates than previously considered necessary. If, on the other hand, neighbors of O-I participants experience increased burglary rates, then reported burglary reductions among the participants would appear to be arising from displacement rather than prevention.

A procedure for comparing the burglary rates of non-participating neighbors of O-I participants with those of non-participating neighbors of non-participant premises, and

paired to the participant sample, is described in the following paragraphs. Figure 4-8 illustrates the method for identifying the premises whose burglary rates are to be compared.

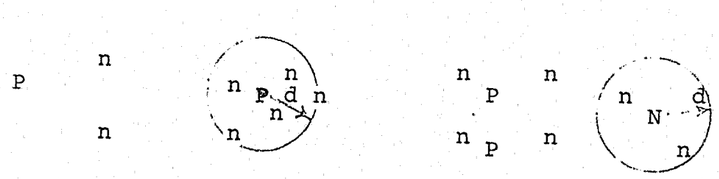

Figure 4-8

DIAGRAM OF LOCATIONS OF PARTICIPANTS AND NON-PARTICIPANTS

The figure, a schematic representation of a map of a portion of an O-I target area, shows the geographic locations of participant premises (indicated by P) and non-participant premises (indicated by n and N). A sample of the participants is selected as follows:

- The "neighbors" of a given premise are defined to be all premises located less than a distance d from it (e.g., d might be 500 feet).
- A participant P is <u>eligible</u> for the sample only if no other participants are located closer than a distance 2d from it (this implies that all of the participant's neighbors are non-participants, and that these

neighbors themselves have only one participant neighbor), and if P has been enrolled in O-I for at least a year.

- The set of eligible participants is used to select the needed sample, based on size considerations and the achievement of a representative geographic distribution.

For each participant selected for the participant sample a corresponding non-participant "mate" is selected as follows:

- The non-participant is located in the "vicinity" of the participant (at a distance, say, of 10d or less).
- The non-participant has no participants located closer than a distance of 2d from it (this implies that all of the non-participants' own neighbors are also non-participants).
- The "neighborhoods" of non-participants selected for the non-participant sample do not overlap.

In Figure 4-8 the circle at the left encloses an O-I participant (P) eligible for the sample, and identifies all of his non-participant neighbors (n); the circle at the right encloses a non-participant (N) selected as the "mate" to the sample participant at the left, and identifies all of the non-participant's neighbors (n).

The assessment of displacement is made by studying the <u>neighbors</u> of the participant sample and comparing their burglary experience with that of the <u>neighbors</u> of the non-participant sample. By so pairing each participant with a non-participant, and by determining the burglaries for the neighbors of each during similar time periods, the above evaluation design controls for both the burglary trend and for the variability of burglary rates within the project's

target area. The comparison is made as follows:

- For each sample participant P the number of burglaries reported by his neighbors during the year prior to P's enrollment is computed. Next, the number of burglaries they reported during the year following P's enrollment is computed. Finally, the "after" burglary rate is divided by the "before" burglary rate to determine the change, if any, in the neighbors' burglary experience due to P's enrollment.

- Similarly, for each sample non-participant a ratio of "after" to "before" burglaries experienced by neighbors is computed, using as the date separating the "after" year from the "before" year that of his mate's enrollment.

- Lastly, the after-to-before ratios for the sample participants are averaged and compared to the average of the after-to-before ratios of the sample non-participants.

If the figures computed indicate that neighbors of participants experience a greater increase in burglary following the participants' enrollment than do neighbors of the "control" non-participants over similar time periods, this will strongly suggest that burglary is being displaced from the participants to their neighbors.

In making the above analysis the Phase II evaluator should be aware of several potential sources of error. First, the displacement effect under study is necessarily that from participants to relatively close neighbors (i.e., not to neighboring communities). If desired, the value of "d" may be increased to partially offset this limitation. Second, some locations presumed to be non-participant premises may actually be unregistered participants. A costly but effective control

for this type of error is telephone verification of non-participant status for locations included in the non-participant sample and for all burglarized neighbors. Third, some participants in the sample may not have maintained their warning decals or even have posted any. This may be checked via either a telephone or field survey but, again, the costs can be considerable. Fourth, the analytic procedure assumes that the number of neighbors of locations in the participant sample will be roughly equal to those of locations in the non-participant sample; if one group has significantly more neighbors than the other it will have a higher burglary total when the burglary rates per location are <u>equal</u> for both groups. Since the analysis relies on after-before comparisons of burglary rates, the sizes of the two groups cancel out to some extent. Finally, unless the size of the participant sample (and therefore of the non-participant sample as well) is large enough the number of potentially-displaced burglaries will be small, since the normal "attack rate" measured in burglaries per premise per year is quite low. This consideration may be used to estimate the number of premises in an adequately-sized sample by making use of data on the average attack rate, the density of premise locations (e.g., in premises per square mile), and the value of "d".

In order to perform the above analysis it is necessary to have a data base which includes information on the locations of participants; their enrollment dates; and burglaries, including

the date and location of each. Also necessary will be the capability to determine the distance between any pair of specified locations, such as the distance between two participants, or the distance between a participant and the scene of a reported burglary. This type of data base and distance measurement capability exist in St. Louis where both participant and burglary data are geo-coded and stored on computer tapes. The list of participant addresses, a map of the city, and a reverse telephone directory may be used to select the non-participant sample. It is not necessary to determine the addresses of any of the "neighbors" which figure in the analyses -- instead the address of each reported burglary during an appropriate time period is used to determine whether or not it qualifies as a neighbor of any location in either the participant or non-participant sample.

I. Question 8 - Is Stolen O-I Property More Likely to Be Recovered by Police Than Unmarked Property?

Increased recovery of stolen property is one of the major objectives of the O-I program. The infrequent incidence of O-I property recovery, however, makes evaluation of this aspect of O-I extremely difficult. Any tests based on comparison of recovery rates for O-I marked property and unmarked property would be inconclusive because of the very small number of O-I items now being recovered. The evaluation plan presented below is designed to provide some secondary evidence with which to investigate the question, and to estimate an upper bound on

what O-I can do in increasing the recovery of stolen property. If these objectives are considered insufficient by the Phase II evaluator, it is suggested that this question be omitted from the evaluation.

Data for the Phase II plan will be drawn from all four of the previously identified sources:

- survey of experts (to gain further insight into the actual and potential value of property markings);
- police records (to study property recovery rates for markable and unmarkable stolen property, to assess the amounts of markable and unmarkable property stolen, and to learn if O-I participants give police more accurate descriptions of stolen property than do non-participants);
- survey of O-I implementors (to learn of recent experience with recovery of marked property); and,
- survey of O-I participants (to determine the extent to which O-I property inventory forms are used to aid in providing descriptions of stolen property).

Each of these components of the evaluation is discussed in the following paragraphs.

1. How do Police Experts on Property Recovery Assess The Value of O-I Markings in Property Recovery? Police burglary detectives, and officers of pawn shop, anti-fencing, and recovered property units deal with property recovery problems on a day-to-day basis. Such individuals contacted during the Phase I study contributed much regarding practical and routine aspects of property recovery, and how these might be affected by O-I. Questions used in the Phase I field survey will be appropriate for the Phase II effort (see the Field Survey for the survey instrument used). By contacting a larger number of

persons in the Phase II survey than was possible for the Phase I (see the Field Survey for method of selection), the breadth and reliability of the previous survey findings should be increased. As suggested for the other activities relying on this type of data, an in-person, informal format seems most appropriate. Also, the inclusion of several cities, as recommended earlier, will reduce possible biases arising from atypical circumstances in the cities contacted. Consequently the payoff from this type of research is more likely to be a broadened understanding of the problem than an accurate measurement of it.

2. <u>What Can Be Learned From Routinely Prepared Police Records Regarding the Value of Property Markings in Recovery of Stolen Goods?</u> Police property recovery reports usually indicate the number of items and types of goods recovered. Some also indicate the value of these items. If no value is given it is possible to obtain it from the original theft report, when the incident in which the item was taken can be identified, or by estimation from the values reported for similar stolen items. The evaluation proposed involves estimating separately the total values of markable and unmarkable property recovered in a specified period of time by several police agencies, and comparing them with the corresponding totals for property stolen during the same period of time. This makes it possible to (1) learn whether property recovery rates are similar for markable and unmarkable property, and to (2) estimate the

improvement in total property recovery which would result if O-I markings led to the recovery of <u>all</u> stolen markable property. Of course, O-I cannot be expected to do this so the assessment results will provide an upper bound on the possible improvement rather than an estimate of the improvement itself.

Data to be collected, based on an appropriate sample of police agencies and records on file there, include, for a specified period of time:

RM = the value of recovered markable property

RU = the value of recovered unmarkable property

SM = the value of markable property reported stolen

SU = the value of unmarkable property reported stolen

Partial estimates of SM and SU will be available from the research for Question 4, which yields figures referring to burglary losses only. These should be supplemented with tabulations for robbery and larceny.

The values of RM, RU, SM, and SU may be used to compute six useful effectiveness measures:

(1) $\frac{RU + RM}{SU + SM}$ = the overall property recovery rate

(2) $\frac{SM}{SM + SU}$ = the fraction of the value of all property stolen which is markable

(3) $\frac{RM}{RU + RM}$ = the fraction of the value of all recovered property which is markable

(4) $\frac{RM}{SU + SM}$ = the fraction of the value of all stolen property which is recovered and markable

(5) $\frac{RM}{SM}$ = the recovery rate for markable property

(6) $\frac{RU}{SU}$ = the recovery rate for unmarkable property

Measure (1), the overall property recovery rate, is computed annually by many police agencies. In St. Louis, Missouri, for example, during 1972 the overall value of recovered property, excluding stolen automobiles, was 10.6 percent of the value stolen. Measures (2) and (4) indicate the fractions of the value of all property stolen which are stolen and markable, and recovered and markable. The difference between the two figures is the improvement in the recovery rate which would be experienced if all stolen markable items carried O-I marks and if all such items were consequently recovered. Measure (3) is the fraction of all recovered property which is markable; comparison with measure (2) will indicate whether markable property is recovered in the same proportion as it is stolen. Finally, measures (5) and (6) indicate the recovery rates for markable and unmarkable property (i.e., of the value of all stolen markable property, how much is recovered? and, of the value of all stolen unmarkable property, how much is recovered?). These two measures are useful in indicating whether the recovery rate for markable property, which includes O-I property, may be different from that for unmarkable property for reasons other than O-I.

An alternate approach to assessment of the recovery benefits of property marking would be to investigate the recovery rate for serial number-marked property on the assumption that serialized property can be used as a surrogate for O-I property.

Some factors affecting the validity of the analysis described above are:

- Recovered property data will include property recovered from simple loss, non-burglary crimes, other jurisdictions, and incidents which occurred in time periods other than that specified for the analysis.
- Burglary and recovery data may be seasonal and subject to long term trends; this can be tested by collecting sufficient historical data on the value of property stolen and recovered.
- Some recovered property may be returned to owners without passing through the police property recovery room. Also, the extent to which this occurs will probably vary among police agencies, depending on the property recovery and return procedures followed.
- The property value estimates given in theft and recovery reports are subject to error. Also, the procedures for computing these may differ among agencies and officers. An alternate approach would be to compute the numbers of items stolen and recovered as well as the values. Adequate procedures for counting will be required.

The final aspect of this part of the Phase II evaluation relates to the extent to which O-I participants complete O-I property inventory forms and then use them at the time of a burglary loss to provide the police with more accurate stolen property descriptions than might otherwise be the case. A plan for assessing this aspect of O-I participant compliance has been given above under Question 2.

3. Has Recent Property Recovery Experience Differed From the Low Levels Previously Reported by O-I Implementors? None of the O-I projects contacted in the Phase I Field and

Telephone surveys, conducted from December 1974 through March 1975, reported any significant levels of property recovery attributable to O-I. It is suggested that this information be brought up to date at the time of the Phase II evaluation by reinquiring about property recovery in the Phase II telephone survey of O-I implementors. Here again, the Phase I Field Survey instrument may be used as the basis for conducting this facet of the telephone survey.

4. Do Burglarized O-I Participants Report Using O-I Inventory Forms to Aid in Describing Stolen Property? One procedure for determining the extent to which O-I participants provide police with improved descriptions of stolen property has been described above. Since one part of the Phase II telephone survey of O-I participants involves a 100 percent sample of burglarized participants in some cities (see Question 4), a section on property recovery easily can be added which will solicit relevant information directly from the participants. The types of data sought should include:

- how often were inventory forms used in giving property descriptions?
- were the forms sometimes unavailable or lost?
- were items stolen not listed on the forms? and,
- was any property subsequently recovered? If so, is it known whether or not the property descriptions were beneficial to the recovery?

J. Question 9 - Is Recovered O-I property More Likely to Be Returned to Owners Than Unmarked Property?

Recovery of an item of stolen O-I property by a police

agency does not guarantee that the item will be returned to its owner. Circumstances under which return does not occur include failure to observe or recognize the meaning of the O-I marking on the property, inability to trace an observed marking to an owner, and failure to locate an identified owner. Assessment of the property return benefits of O-I has been hindered by the same problem encountered in assessing its property recovery benefits: too few stolen O-I property items have been recovered to reliably examine the property return procedures. The plan given above for Question 8, regarding the recovery of stolen O-I property, can, with some minor modifications, be used to conduct a more adequate assessment of O-I's property return benefits than heretofore available. The methodology for Question 8 will only be summarized briefly here; the earlier discussion provides additional details. Applicable elements of the Phase II plan for Question 8 include:

- the survey of police experts on property recovery, expanding it to include an inquiry regarding O-I's potential property return benefits (including a section on the possibility that O-I marks might be altered or removed by the burglar or by a fence);
- use of police records on property recovered to determine the extent to which markable and unmarkable items are returned to their owners (this is discussed in more detail below);
- reference to the analysis proposed for Question 2 regarding the extent to which O-I participants complete property inventory forms and use them to provide police with good descriptions of stolen property, since such descriptions are sometimes used to trace recovered stolen property to its owner;

- the survey of O-I implementors, adding a section on recent experience with the return of O-I property to owners; and,

- the survey of burglarized O-I participants, modified by the addition of questions regarding whether any of the property stolen was returned to the participant as a result of its having been marked or having been described in a police burglary report.

The use of police property recovery and return records to explore O-I's property return benefits would methodologically parallel the procedure given for their use in resolving Question 8. Data to be collected include, for a specified period of time:

RM = the value of recovered markable property

RU = the value of recovered unmarkable property

TM = the value of recovered markable property traced to and returned to its owner

TU = the value of recovered unmarkable property traced to and returned to its owner

RM and RU will be available from the analysis for Question 8, so only TM and TU will have to be compiled to satisfy the data requirements for this analysis. As for Question 8, tabulations for markable and unmarkable property are used instead of figures for marked and unmarked property, since too few marked items are likely to be available for a reliable assessment. Once estimated, the value of RM, RU, TM and TU are used to compute six useful measures of effectiveness:

(1) $\frac{TM + TU}{RM + RU}$ = the overall property return rate

(2) $\frac{RM}{RM + RU}$ = the fraction of the value of all recovered property which is markable

(3) $\frac{TM}{TM + TU}$ = the fraction of the value of all returned property which is markable

(4) $\frac{TM}{RM + RU}$ = the fraction of the value of all recovered property which is markable and returned

(5) $\frac{TM}{RM}$ = the return rate for recovered markable property

(6) $\frac{TU}{RU}$ = the return rate for recovered unmarkable property

Measure (1) indicates the fraction of recovered property which is returned to owners; it provides a benchmark against which some of the other measures can be compared. Measure (2), computed previously for Question 8, indicates the fraction of all recovered property which is markable -- if each such item carried an O-I marking and could therefore be returned to its owner this figure would represent the maximum return rate achievable through O-I. Measure (3) indicates the extent to which recovered and returned property is markable. It may be compared with measure (2) to determine if markable property is returned in the same proportion as it is recovered. Measure (4) indicates the fraction of recovered property which is markable and returned to its owner; the difference between it and measure (2) is an estimate of the maximum amount of improvement in the property return rate which could be achieved as a result of O-I. Measures (5) and (6) indicate both the fraction of recovered markable property which is returned and the fraction of recovered unmarkable property returned, figures which can be used to determine whether the return of markable property is easier (or harder) to accomplish than that of unmarkable property.

All the potential sources of error identified for the corresponding analysis in Question 8 apply to the present analysis. An additional factor to be considered is that some recovered property may be held as evidence for long periods of time, and therefore not be returned even if the owner has been located.

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* Refer to the Bibliography of item 7 for a more extensive list of literature on Operation Identification

THE INSTITUTE FOR PUBLIC PROGRAM ANALYSIS

PLANS FOR EVALUATING A SINGLE OPERATION IDENTIFICATION PROJECT

PHASE I

EVALUATION OF OPERATION IDENTIFICATION

ABSTRACT

This report presents a model data collection and evaluation plan for use by local Operation Identification (referred to as O-I) projects. Identified are key data elements, information sources, data collection procedures, quantitative measures, specific comparisons, and implementation guidelines for 14 evaluation questions. The elements of this design are based on the frameworks of activities of Operation Identification projects developed for the Phase I study.

The 14 questions, grouped into four evaluation areas (participant recruitment and enrollment, burglary deterrence, property recovery and return, and other O-I benefits), are each discussed in sufficient detail to permit their use without reference to the other questions. As a result, project evaluators can "design" individualized evaluation plans by selecting only those questions which are compatible with the resources and needs of their projects.

This plan is based on the following assumptions: (1) the O-I project is new; (2) the implementation of an experimental design requiring a control group is not feasible; (3) automated procedures for data collection and analysis are not available; and (4) the evaluation effort will be continued for at least one year.

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SUMMARY

A. Purpose and Outline

This report presents a model data collection and evaluation design (or plan) for use by local Operation Identification (often referred to as O-I) projects. Identified for this evaluation design are key data elements, specific measures, quantitative comparisons, and implementation guidelines. The elements of this plan are based on the frameworks of activities of Operation Identification projects developed specifically for this study. (See the report: Assessment of Effectiveness," also produced for the Phase I Evaluation of O-I, for a complete discussion of the frameworks of activities.)

B. Evaluation Questions

The proposed evaluation plan is designed both to measure the success or failure of project implementation and to test the ultimate effects of O-I (i.e., burglary reduction and improved property recovery and return). The questions presented in the plan are grouped into four evaluation areas.

Recruitment, Distribution and Enrollment. The evaluation questions raised in this area are designed to help project implementors assess the direct effects of O-I project activities intended to: (1) persuade persons to join Operation Identification, and (2) assist them in obtaining necessary materials, forms, and instructions. Questions about the quality of O-I project efforts are often the easiest to explore, since much of the evaluation data required is frequently generated by

the project itself in monitoring its own efforts.

The specific evaluation questions for this area are:

1. How successful is the O-I project in informing and recruiting citizens for Operation Identification?
2. How effectively and efficiently does each recruitment method used by the O-I project produce new participants?
3. How successful are the enrollment procedures, forms, and equipment?
4. How well do O-I participants comply with project instructions and guidelines?

Burglary Deterrence. The questions relating to burglary deterrence, the major objective of O-I, are designed to evaluate O-I's deterrent effect for both project participants and all households within the target area. Also included are questions which test the validity of alternative explanations for these effects among O-I participants.

The specific questions examined in this area are:

5. Do O-I participants experience an absolute decline in burglary rates?
6. Do O-I participants experience a decline in burglary rates relative to non-participants?
7. Do O-I participants report a greater proportion of the property crimes committed against them to the police after joining Operation Identification?
8. Do O-I participants experience "false" burglary rate reductions because projects enroll a disproportionate number of recently burglarized citizens?
9. Do households in the target area collectively experience a decline in reported burglaries because of Operation Identification?

Property Recovery and Return. The evaluation questions

in this area relate to the second major claimed benefit of O-I, and are:

10. Is stolen O-I marked property more likely to be returned to its owner than unmarked property?

11. Is stolen O-I marked property more likely to be recovered by the police than unmarked property?

12. Is recovered O-I marked property more likely to be traced to its owner than unmarked property?

Other O-I Benefits. Two secondary benefits are also frequently cited by project implementors. Evaluation questions related to these benefits are:

13. Does an O-I project improve the relationship between the police and O-I participants and non-participants?

14. Do O-I participants use more target-hardening procedures than non-participants?

These 14 evaluation questions are not designed to serve the same purpose. Some address directly the effectiveness of specific project activities and benefits (questions 1, 5, 9, and 10), while others are designed to help project staff members monitor project activities and efforts (questions 2, 3, and 4). The remaining questions are designed to explore or identify the underlying reasons for the failure or success of the project (questions 6, 7, 8, 11, 12, 13, and 14). The particular set of questions included in the evaluation design for an individual O-I project will depend upon the resources, expertise, and needs of the project.

Three sample plans are suggested. The low effort plan consists of only two questions: How many participants has the

project enrolled (Question 1)?, and what burglary deterrence benefits, if any, have project participants experienced (Question 5)? This plan is recommended for projects with only minimal resources with which to collect, maintain, and analyze the required data. If greater resources are available, the low effort plan can be expanded to include four additional questions to expand upon the burglary deterrent effects of O-I (questions 6 and 9), and to monitor the immediate effects of the recruitment and enrollment activities of the project (questions 2 and 3). The third plan includes all 14 evaluation questions and requires considerably more effort.

C. Data Sources

Specific data items required to construct the quantitative measures used to test each evaluation question are obtained from six distinct information sources using various collection procedures, and requiring varying amounts of effort.

1. Registration survey. Basic information about each participant is usually obtained when he borrows an engraving pen from a distribution center or has his property marked for him by project staff members or volunteers. Collection procedures for obtaining other data items depend upon the characteristics of the individual O-I project.

Three alternative collection mechanisms that can be used are:

- Participant survey at the time of registration (either self-administered or interviewed by project representatives).
- Survey information form completed by each participant and returned to the project.

- Survey information obtained by telephoning each participant.

Important factors to be considered in selecting these methods are: (1) the amount of time distribution site workers can spend with each participant; (2) the number and quality of voluntary mailback surveys; and (3) the amount of resources required for a telephone survey.

2. O-I project files. This information source refers to data items that are usually maintained by the project itself, such as the number of participants enrolled and the amount of resources expended.

3. Target area crime statistics. This information source refers to summary crime statistics maintained by the local police department for the project's target area.

4. Individual burglary records. This source refers to detailed information collected about individual burglaries that occur after the O-I project has begun through the examination of every burglary report filed after the beginning of the O-I project. Prior to the implementation of this evaluation plan, an accurate appraisal should be made of what required data items are not currently recorded on each burglary report and how willing the police are to modify their reporting forms to capture the required data.

5. Police property room records. The data items collected from property room records are used exclusively to provide evaluative measures with which to assess the property recovery and return benefits of O-I. If such an evaluation is not

desired, then collection of these data items is unnecessary. When undertaken, it is recommended that the information collected about the recovery and return of property by the police be limited to a subset of property types, defined by each project (e.g., information may be collected only for stolen television sets and radios).

6. Post survey. The final data source is a survey of both O-I participants and non-participants conducted one year after the beginning of the project.

Since burglary information about O-I participants is crucial to the evaluation of the burglary deterrent effects of O-I two mechanisms are described in this plan for acquiring this information. The recommended procedure is a post survey of all O-I participants. The alternate mechanism is the examination of all residential burglary reports filed during the past year. This procedure requires that the officer reporting each burglary must indicate whether the victimized household displays project decals and has marked property.

D. Scope of the Evaluation Plan

This evaluation plan is a compromise: it is as specific as possible without imposing special conditions or requirements upon individual projects. The following paragraphs describe the plan's basic assumptions, structure, and limitations.

1. Assumptions of the evaluation plan. Regardless of the sophistication and quality of any plan, the legitimacy of the final results is largely dependent upon accurate and objec-

tive interpretations by project evaluators. Essential to the formulation of such interpretations is a complete and thorough understanding of the basic assumptions upon which the plan, the data items, the measures, and the questions themselves are based. This section presents the following assumptions about the overall structure of the evaluation plan and about the kinds of environments in which it can be implemented.

- o The O-I project is new. The basic plan assumes that the project will be able to evaluate its efforts and effects from its inception. Thus, the data needs for the evaluation plan can be included in the initial planning of project operations. This plan can also be used to evaluate ongoing projects, but care must be taken to adequately identify changes which will be required in both police and project reporting forms and procedures.

- o The implementation of an experimental design requiring a control group is not feasible. The imposition of a control group for such voluntary self-help projects as O-I is not a feasible evaluation design for most communities.

- o Automated procedures for data collection and analysis are not available. Few O-I projects have either the resources or expertise to design or use computer processing procedures. Although many police departments use interactive computer terminals to retrieve information about wanted individuals and stolen property, few O-I projects use data processing to record or analyze their project data.

- o The evaluation effort will be continued for at least one year. The one year minimum time span recommended for this evaluation plan permits an adequate amount of data to be collected and also minimizes the effects of seasonality in the analysis of the collected data.

2. Structure of the plan. To make this evaluation plan as applicable to as many O-I projects as possible, it has been designed to be as "modular" as possible. This feature enables O-I project evaluators to select only those questions, procedures,

and measures which are applicable to their projects.

Each evaluation question in this plan represents a modular unit which can be referred to without knowledge of the other questions. The discussion for each question includes:

- o the purpose of the question;
- o the specific quantitative measures to monitor a project activity or test for a project effect;
- o the data items required to calculate each measure;
- o the information source for each data item;
- o difficulties with the reliability, consistency, or adequacy of the data;
- o specific comparisons and analyses to make; and
- o interpretation of the evaluation results.

For several questions and data items, alternative measures, information sources, and data collection procedures are identified. These alternatives are included to enable project evaluators to select the methods and data sources that are most feasible for their particular projects. When two or more alternatives are presented, the merits and drawbacks of each are identified; and, in some instances, particular methods and data sources are recommended.

3. Limitations of the plan. This evaluation plan is not a cookbook for evaluating O-I projects. It does not, for example, include all of the specific details about the procedures, measures, and forms that will be required to implement an evaluation. Further, the plan is not designed as a substitute for, but rather as a supplement to the efforts of project evaluators and adminis-

trators who are familiar with the specific project to be evaluated. The plan does provide a systematic guide to the evaluation of the important questions and procedures about O-I projects that have been identified in this study.

For each O-I project, the evaluator may want to add to or modify the questions and measures that are recommended in order to adapt this plan to the local environment and particular objectives of his O-I project. It is important to note that this plan does not address all of the methods and project effects associated with Operation Identification projects. The specific questions presented herein represent only those areas deemed most useful and feasible for evaluation by local and state agencies. Evaluation questions best answered in studies involving the examination of several O-I projects at the same time are identified in "Plans for Phase II Evaluation Activities" (another product of the Phase I Evaluation of Operation Identification). As an example, this plan does not recommend that individual projects evaluate the effect of O-I on the burglar in terms of increased apprehensions, prosecutions, or convictions. This recommendation is based on the Phase I assessment of O-I which found that no O-I project to date has documented any substantive improvement due to O-I in the number of apprehended or prosecuted burglars.

In discussing the measures to be used for each evaluation question in this plan, numerous mathematical formulas are presented. In most instances, these formulas can be easily under-

stood since they are simple equations which merely require the division of one number by another to obtain a percentage or rate. For those persons who may find that reading and interpreting such formulas distracts from their understanding of the measure, adequate explanations are also included in the text accompanying each formula. In addition, the application of each formula using sample data is illustrated in Appendix F.

D. Implementation Guidelines

This section presents a checklist of specific activities for each phase of the evaluation plan. The contribution of these activities to the quality of the final evaluation cannot be overemphasized. The best-conceived plan will produce only minimal results unless there is sufficient planning to ensure both the existence of the required evaluation data and the co-operation of the police officials and project staff.

1. Initial planning. Such activities preferably should take place before the O-I project begins. Depending on staff time available and project size, initial planning efforts can easily require several man-months. Specific activities to be completed in this phase include:

- Determination of the specific evaluation questions to address.
- Determination of the specific measures and data items required for each evaluation question.
- Review of information sources.
- Identification and contact with the principal administrators involved in implementing and evaluating the project.

- o Determination of the capabilities and size of the evaluation staff.
- o Construction of an overall evaluation schedule.
- o Estimation of the total resources required for the evaluation.

2. Monitoring efforts. Once the O-I project begins, the ongoing data collection efforts should be monitored on a regular basis by the project staff to assure:

(1) on-going evaluation data are checked for consistency and errors during the collection period;

(2) early resolution of ambiguities and problems with the collection procedures or forms; and

(3) better recognition and assessment by the evaluator of secondary and unexpected results and non-quantifiable effects which may weaken the validity of the final results.

3. Final analysis. After one year, the evaluation staff must draw together all of the collected data in order to examine each of the evaluation questions.

The major data collection task is the completion of the post-survey of O-I participants and non-participants; survey preparation should have begun approximately three to four months before the survey is actually conducted. Important issues to be resolved in connection with survey preparation include:

(1) the size of each sample;

(2) the selection process for each sample;

(3) construction of each survey questionnaire;

(4) pretesting the surveys;

(5) training the interviewers; and

(6) tabulating the final results.

Other tasks include accumulation of all collected data, use of the information to test each question, and preparation of the evaluation results.

CHAPTER I. INTRODUCTION

A. Purpose and Outline

This report presents a model data collection and evaluation design (or plan) for use by local Operation Identification (often referred to as O-I) projects. Identified for this evaluation design are key data elements, specific measures, quantitative comparisons, and implementation guidelines. The elements of this plan are based on the frameworks of activities of Operation Identification projects developed specifically for this study. (See the report: "Assessment of Effectiveness," also produced for the Phase I Evaluation of O-I, for a complete discussion of the frameworks of activities.)

This report is divided into six chapters. The first one discusses the need for and usefulness of local O-I project evaluations, defines the characteristics of property marking programs examined for this study, outlines a simple O-I project model, discusses the scope and limitations of the evaluation plan presented, and identifies other evaluation research materials that can be used to supplement the plan.

Chapter II presents an overview of the entire evaluation plan. Included are the 14 evaluation questions addressed in this plan, the specific data items to be collected, the source of each item, a checklist of implementation tasks, and a brief discussion of the cost of implementing the plan.

The remaining four chapters present specific measures and comparisons for assessing each evaluation question. Chapter III

raises four questions related to recruitment and enrollment activities; Chapter IV is devoted exclusively to questions about burglary deterrence; and Chapter V has three evaluation questions about the property recovery and return effects of Operation Identification. Chapter VI examines two secondary benefits of O-I: improved police-community relations and the use of O-I projects to promote other crime prevention activities.

Appendix A summarizes the data items required for each evaluation question. Appendixes B through E contain sample evaluation forms; and Appendix F contains numerical examples illustrating the use of the measures and comparisons introduced in chapters III through VI.

B. Why Evaluate?

The systematic evaluation of crime control projects has become an important facet of modern police management. The large infusion of federal monies into local police systems in the last 10 years has accelerated this change. Federal and state grants to local communities for crime control projects routinely require grantees to account for the monies spent and to document project effects. Although grant evaluation requirements are still viewed by some grantees as "strings" which allow federal and state bureaucrats to interfere with local problems, this initial hostility is fading as police planners and local government officials come to realize the advantages of program evaluation.

More important than the mere fulfillment of grant require-

ments are the benefits that the management system of a police department can derive from adequate project evaluations. These benefits include:

- o collection of useful data upon which administrative decisions can be based;
- o operational feedback to project staff members about the effectiveness of specific procedures and forms;
- o more accurate and objective assessments of the actual effects of the projects; and
- o more accurate accounting procedures to record the total resources expended for specific project activities.

With most local police departments today facing severe budget restrictions, more than ever those departments must utilize as much information as possible to determine whether crime control projects should be continued, modified, or abandoned. For a pilot project initially funded through either a federal or state agency (frequently the case with Operation Identification projects), it must be decided whether the effectiveness of the project justifies its continued support with local funds. Finally, results of earlier evaluations can be useful in planning the implementation of new projects; and costly mistakes, recognized from earlier efforts, can be avoided.

The evaluation plan outlined in this report reflects the "feedback" concept of evaluation (i.e., the evaluation results can be used by project implementors to improve specific activities of the project). This contrasts with the "final report" concept (i.e., merely reporting the failure or success of the project to an outside agency). Data items and measures are

described for monitoring the immediate effects of O-I project activities and evaluating their ultimate impact upon burglary deterrence and property recovery.

C. A Simple Operation Identification Project Model

The evaluation plan presented in this report is designed for property marking programs with the following characteristics:

- o citizens are encouraged to mark each movable piece of valuable property they own;
- o a personal identifier, unique to each citizen, is used; and,
- o burglary deterrence is the major goal of the project.

An idealized model of Operation Identification projects is used to categorize the evaluation questions addressed in this plan. The model consists of three components: participant recruitment, material distribution and participant enrollment; burglary deterrence; and property recovery. For a brief description of each component, see pages 2 to 4 of the summary report presented earlier in this volume ("Summary of the Assessment of Operation Identification's Effectiveness").

D. Scope of the Evaluation Plan

The construction of this evaluation plan involved an inevitable conflict of objectives. In order to make the plan as practical as possible for individual projects, it is necessary to identify data items, information sources, and evaluation procedures as precisely as possible. In contrast, to ensure the usability of the plan by as many O-I projects as possible,

data items, measures, and procedures are outlined only in general form, leaving the "fine tuning" of these elements to individual project evaluators.

This evaluation plan is a compromise: it is as specific as possible without imposing special conditions or requirements upon individual projects. The following paragraphs describe the plan's basic assumptions, structure, and limitations.

1. Assumptions of the evaluation plan. Regardless of the sophistication and quality of any plan, the legitimacy of the final results is largely dependent upon accurate and objective interpretations by project evaluators. Essential to the formulation of such interpretations is a complete and thorough understanding of the basic assumptions upon which the plan, the data items, the measures, and the questions themselves are based. This section presents the following assumptions about the overall structure of the evaluation plan and about the kinds of environments in which it can be implemented.

- o The O-I project is new. The basic plan assumes that the project will be able to evaluate its efforts and effects from its inception. Thus, the data needs for the evaluation plan can be included in the initial planning of project operations. This plan can also be used to evaluate ongoing projects, but care must be taken to adequately identify changes which will be required in both police and project reporting forms and procedures.
- o The implementation of an experimental design requiring a control group is not feasible. The imposition of a control group for such voluntary self-help projects as O-I is not a feasible evaluation design for most communities.
- o Automated procedures for data collection and analysis are not available. Few O-I projects have either the

resources or expertise to design or use computer processing procedures. Although many police departments use interactive computer terminals to retrieve information about wanted individuals and stolen property, few O-I projects use data processing to record or analyze their project data.

- o The evaluation effort will be continued for at least one year. The one-year minimum time span recommended for this evaluation plan permits an adequate amount of data to be collected and also minimizes the effects of seasonality in the analysis of the collected data.

2. Structure of the plan. To make this evaluation plan applicable to as many O-I projects as possible, it has been designed to be as "modular" as possible. This feature enables O-I project evaluators to select only those questions, procedures, and measures which are applicable to their projects.

The discussion for each question includes:

- o the purpose of the question;
- o the specific quantitative measures to monitor the activity or test the effect;
- o the data items required to calculate each measure;
- o the information source for each data item;
- o difficulties with the reliability, consistency, or adequacy of the data;
- o specific comparisons and analyses to make; and
- o interpretation of the evaluation results.

For several questions and data items, alternative measures, information sources, and data collection procedures are identified. These alternatives are included to enable project evaluators to select the methods and data sources that are most feasible for their particular projects. When two or more alternatives are presented, the merits and drawbacks of each

are identified; and, in some instances, particular methods and data sources are recommended.

3. Limitations of the plan. This evaluation plan is not a cookbook for evaluating O-I projects. It does not, for example, include all of the specific details about the procedures, measures, and forms that will be required to implement an evaluation. Further, the plan is not designed as a substitute for, but rather as a supplement to the efforts of project evaluators and administrators who are familiar with the specific project to be evaluated. The plan does provide a systematic guide to the evaluation of the important questions and procedures about O-I projects that have been identified in this study.

For each O-I project, the evaluator may want to add to or modify the questions and measures that are recommended in order to adapt this plan to the local environment and particular objectives of the O-I project. It is important to note that this plan does not address all of the methods and project effects associated with Operation Identification projects. The specific questions presented herein represent only those areas deemed most useful and feasible for evaluation by local and state agencies. Evaluation questions best answered in studies involving the examination of several O-I projects at the same time are identified in "Plans for Phase II Evaluation Activities" (another product of the Phase I Evaluation of Operation Identification). As an example, this plan does not recommend that individual projects evaluate the effect of O-I on the burglar in terms of apprehen-

sions, prosecutions, or convictions. This recommendation is based on the Phase I assessment of O-I which found that no O-I project to date has documented any substantive improvement due to O-I in the number of apprehended or prosecuted burglars.

In discussing the measures to be used for each evaluation question in this plan, numerous mathematical formulas are presented. In most instances, these formulas can be easily understood since they are simple equations which merely require the division of one number by another to obtain a percentage or rate. For those persons who may find that reading and interpreting such formulas distracts from their understanding of the measures, adequate explanations are usually also included in the text accompanying each formula. In addition, the application of each formula using sample data is illustrated in Appendix F. Statistical procedures, when required, are also identified in the text and illustrated in Appendix F.

E. Evaluation Literature

In addition to this plan, O-I project implementors and evaluators can draw upon a small but rapidly growing body of publications about the evaluation of criminal justice programs. Selected publications about the theory, methodology, and applications of program evaluation which O-I evaluators may find useful are listed below. (Following the procedure used throughout this plan, several alternative references are listed for each subject area; any one of the documents suggested within each area can be used to introduce the reader to that subject area.)

1. Operation Identification. The few useful evaluations of O-I projects or of burglary prevention programs in general to date include:

- o An Evaluation of Operation Identification as Implemented in Illinois. Hans W. Mattick, C. Kavanagh Olander, David G. Baker, and Harold E. Schlegel. University of Illinois at Chicago Circle (prepared for Illinois Law Enforcement Commission), September, 1974.
- o Burglary Prevention: Police Expectations and Experiences. T. White, K. Regan, J. Waller, and J. Wholey. The Urban Institute (prepared for the National Institute of Law Enforcement and Criminal Justice), October, 1974.

2. Evaluation of criminal justice programs. Although all the following documents do not deal directly with crime prevention programs, each contains valuable information about the implementation and conduct of evaluations of criminal justice projects.

- o Evaluation of Crime Control Programs. Michael D. Maltz, Research Operations Division, National Institute of Law Enforcement and Criminal Justice, April, 1972.
- o Evaluation in Criminal Justice Programs: Guidelines and Examples. E. Albright, M. Baum, B. Forman, S. Gems, D. Jaffe, F. Jordan, Jr., R. Katz, and P. Sinsky. National Institute of Law Enforcement and Criminal Justice, June, 1973.
- o Evaluation of Crime Control Programs in California: A Review. California Council on Criminal Justice, April, 1973.
- o Routinizing Evaluation: Getting Feedback on Effectiveness of Crime and Delinquency Programs. Daniel Glaser, University of Southern California (prepared for the National Institute of Mental Health, Center for Studies of Crime and Delinquency), 1973.

- Evaluation Research in Corrections: A Practical Guide. Stuart Adams, National Institute of Law Enforcement and Criminal Justice, March, 1975.

3. Evaluation methodology. General discussions about methods and pitfalls in the evaluation of social programs can be found in:

- Practical Program Evaluation for State and Local Government Officials. H. Hatry, R. Winnie, and D. Fisk. The Urban Institute, 1973.
- Readings in Evaluation Research. F. Caro (ed.), Russell Sage Foundation, 1971.
- Evaluation Research: Principles and Practice in Public Service and Social Action Programs. E. Suchman, Russell Sage Foundation, 1967.
- Evaluation Research: Methods of Assessing Program Effectiveness. C. Weiss, Engelwood Cliffs, N. J.: Prentice Hall, 1972.

4. Survey methodology. Two excellent discussions of the practical use of public surveys for program assessment are:

- An Introduction to Sample Surveys for Government Managers. C. Weiss and H. Hatry. The Urban Institute, 1971.
- Obtaining Citizen Feedback: The Application of Citizen Surveys to Local Governments. K. Webb and H. Hatry. The Urban Institute, 1973.

CHAPTER II. EVALUATION PLAN

A. Introduction

The purpose of this chapter is to introduce the main components of the evaluation plan for individual O-I projects, with particular attention to the nontechnical and administrative elements of the plan. Included in this chapter are: the specific evaluation questions addressed; the required data elements, collection procedures, and information sources; the principal tasks required for implementation of the plan; and finally, a guide to estimating the costs of the evaluation effort.

The technical aspects of the plan (i.e., experimental designs, operational measures, and statistical analyses) are presented for each evaluation question in chapters III through VI.

B. Evaluation Questions

The proposed evaluation plan is designed both to measure the success or failure of project implementation and to test the ultimate effects of O-I (i.e., burglary reduction and improved property recovery and return). The questions presented in the plan are grouped into four evaluation areas which are closely related to the major components of the O-I project model introduced in Chapter I.

Recruitment, Distribution, and Enrollment. The evaluation questions raised in this area are designed to help project

implementors assess the direct effects of O-I project activities intended to: (1) persuade persons to join Operation Identification, and (2) assist them in obtaining necessary materials, forms, and instructions. Questions about the quality of O-I project efforts are often the easiest to explore, since much of the evaluation data required are frequently generated by the project itself in monitoring its own efforts.

The specific evaluation questions for this area are:

1. How successful is the O-I project in informing and recruiting citizens for Operation Identification?
2. How effectively and efficiently does each recruitment method used by the O-I project produce new participants?
3. How successful are the enrollment procedures, forms, and equipment?
4. How well do O-I participants comply with project instructions and guidelines?

Each of these questions is discussed in Chapter III.

Burglary Deterrence. The questions relating to burglary deterrence, the major objective of O-I, are designed to evaluate O-I's deterrent effect for both project participants and all households within the target area. Also included are questions which test the validity of alternative explanations for these effects among O-I participants.

The specific questions examined in this area are:

5. Do O-I participants experience an absolute decline in burglary rates?
6. Do O-I participants experience a decline in burglary rates relative to non-participants?

7. Do O-I participants report a greater proportion of the property crimes committed against them to the police after joining Operation Identification?
8. Do O-I participants experience "false" burglary rate reductions because projects enroll a disproportionate number of recently burglarized citizens?
9. Do households in the target area collectively experience a decline in reported burglaries because of Operation Identification?

Each of these burglary deterrence questions is discussed in Chapter IV.

Property Recovery and Return. The evaluation questions in this area relate to the second major claimed benefit of O-I, and are:

10. Is stolen O-I marked property more likely to be returned to its owner than unmarked property?
11. Is stolen O-I marked property more likely to be recovered by the police than unmarked property?
12. Is recovered O-I marked property more likely to be traced to its owner than unmarked property?

Each of these questions is discussed in Chapter V.

Other O-I Benefits. Two secondary benefits are frequently cited by project implementors. Two evaluation questions related to these benefits are:

13. Does an O-I project improve the relationship between the police and O-I participants and non-participants?
14. Do O-I participants use more target-hardening procedures than non-participants?

These 14 evaluation questions are not designed to serve the same purpose. Some address directly the effectiveness of specific project activities and benefits (questions 1, 5, 9, and 10), while others are designed to help project staff members

monitor project activities and efforts (questions 2, 3, and 4). A large number are designed to explore or identify the underlying reasons for the failure or success of the project (questions 6, 7, 8, 11, 12, 13, and 14). The particular set of questions included in the evaluation design for an individual O-I project will depend upon the resources, expertise, and needs of the project.

Three sample plans are illustrated in Table 2-1. The low effort plan consists of only two questions: How many participants has the project enrolled?, and what burglary deterrence benefits, if any, have project participants experienced? This plan is recommended for projects with only minimal resources available to collect, maintain, and analyze the required data. If greater resources are available, Plan B, consisting of Plan A plus four additional questions, can be adopted. Questions 6 and 9 expand

Table 2-1

EVALUATION QUESTIONS INCLUDED IN THREE SAMPLE EVALUATION PLANS

Evaluation Plan	Effort Required	Evaluation Questions Included: Evaluative	Monitoring	Exploratory
A	Low	1, 5		
B	Medium	1, 5, 9	2, 3	6
C	High	1, 5, 9, 10	2, 3, 4	6, 7, 8, 11 12, 13, 14

upon the burglary deterrent effects of O-I, while questions 2 and 3 are directed at monitoring the immediate effects of the recruitment and enrollment activities of the project. The third plan includes all 14 evaluation questions and requires considerably more effort than either Plan A or B.

C. Data Sources

Included in the discussion of each evaluation question in the following chapters are quantitative measures for testing the question, and the specific data items required to construct each measure. Some data elements are used in measures for several different questions. In this section, all data items required for this plan are identified and grouped into six sets, each of which represents a different data source.

The relationships between the information sources, the data elements, and the evaluation questions are summarized in Tables A-3 through A-7. Each table cross-tabulates the required data elements from each information source with each of the 14 evaluation questions. As a result, O-I project evaluators can determine what questions can be addressed, given any group of data items; conversely, they can determine what data items need not be collected if some of the questions are not addressed.

The data items and the information source for each are discussed below. Each data item is identified by a label with the format LL.X where LL is a two-letter prefix indicating the information source, and X is a sequence number of the item within the source.

1. Registration survey. The first data source is the participant himself; information collected either at the time he enrolls in the project or shortly thereafter is listed in Table 2.2. The prefix used to designate each data item is RI (Registration Information).

Data items RI.1 through RI.4 must be collected at registration. Selection of the collection procedures to obtain the remaining data items (RI.5 through RI.18) should be based on the characteristics of the individual O-I project. Three alternative collection mechanisms that can be used are:

- o Survey information is obtained at the time of registration. With this procedure, all of the data items are obtained from each participant at the time of registration either by personal interview or a self-administered questionaire. This procedure may be most convenient when property marking services are provided by trained personnel at the participant's home. If done by volunteers, however, the quality of the collected data may be diminished. If registration is done at pen distribution sites, several problems may arise: (1) site workers may not have time to collect the information; (2) voluntary or part-time workers may produce inconsistent data; and (3) participants may be unwilling to spend the time to answer all of the questions.

- o Survey information form is completed by each participant and returned to the project. This procedure avoids lengthy interviews at the registration site and allows the participant to fill out the form when he has time. Shortcomings of this method are the possibility that many participants will not return the form, and that a project staff person may not be available to assist in its completion.

- o Survey information is obtained by telephoning each participant. This method avoids burdening distribution center personnel, yet retains personal contact with each participant. Problems include the difficulty of contacting each participant, their unwillingness to answer questions, and the manpower and resources required to conduct the surveys.

Table 2-2

DATA ITEMS COLLECTED FROM PROJECT PARTICIPANTS AT OR SOON AFTER THE TIME OF REGISTRATION*

Label	Data Item
RI.1	Participant name and address
RI.2	Participant telephone number
RI.3	Participant personal data (age, race, sex, and income level)
RI.4	Date joined project
RI.5	O-I number used
RI.6	Number and type of property items engraved
RI.7	How participant first heard about O-I
RI.8	Most useful information source about O-I
RI.9	Reason for joining project
RI.10	Number of times burglarized in the last two years
RI.11	Date of each burglary and whether reported to the police
RI.12	Amount ($) taken in each burglary
RI.13	Was at least one property item ever returned for each burglary?
RI.14	Time from each burglary to return of first item
RI.15	Problems encountered with materials, forms, or instructions
RI.16	Suggestions for project improvement
RI.17	Other crime prevention techniques in use or currently being added.
RI.18	Attitude toward the police

* - Data items RI.1 through RI.4 must be obtained at the time of registration.

2. O-I project files. Data items usually collected and maintained by the project itself are listed in Table 2-3. Both the definition and calculation of participant-years (or months) are explained in Chapter IV.

3. Target area crime statistics. Summary crime data to be collected for the target area, and maintained by the local police department, are listed in Table 2-4. Data Items CD.1 and CD.2 should be obtained for a two-year period prior to the beginning of the O-I project.

4. Individual burglary records. The specific data items to be collected about individual burglaries that occur after the O-I project has begun are shown in Table 2-5. Collection of this information requires examination of every burglary report filed after the beginning of the O-I project.

Table 2-3

DATA ITEMS COLLECTED FROM THE O-I PROJECT FILES

Label	Data Item
PF.1	Total number of participant-years (participant-months if possible)
PF.2	Total amount of resources (monies and man-hours) spent on O-I recruitment activities
PF.3	Total amount of resources (monies and man-hours) spent on O-I enrollment activities

Table 2-4

REPORTED CRIME STATISTICS REQUIRED FOR THE O-I TARGET AREA

Label	Data Item
CD.1	Annual burglary data
CD.2	Monthly burglary data

Table 2-5

DATA ITEMS OBTAINED FROM REPORTED BURGLARIES THAT OCCUR IN THE TARGET AREA AFTER THE BEGINNING OF THE O-I PROJECT

Label	Data Item
BR.1	Number of reported burglaries in target area (households displaying decals)
BR.2	Number of reported burglaries in target area (households with marked property)
BR.3	Date each burglarized O-I household joined project
BR.4	Amount ($) stolen from each burglarized O-I household
BR.5	Total number of marked items (SPIs)* stolen
BR.6	Total number of unmarked items (SPIs) stolen

* - See Chapter V for the definition of SPI (selected property item).

Prior to the implementation of this evaluation plan, an accurate appraisal should be made of those data items listed in Table 2-5 which are not currently recorded on each burglary report, and how willing the police are to modify their reporting forms to capture the required data.

5. Police property room records. The data items collected from property room records (Table 2-6) are used exclusively to provide evaluative measures with which to assess the property recovery and return benefits of O-I. If such an evaluation is not desired, none of these data items need be collected. In recording information about the recovery and return of property by the police, only a limited subset of property types, defined by each project, is monitored (e.g., information may be collected only for stolen television sets and radios). The advantages of using a restricted data base are discussed in Chapter V. Each project should also define the terms "marked" and "returned to owner." Since projects use a variety of O-I identifiers and marking systems, a clear, operational definition of "marked", easily understood by property room personnel, is essential to insure the consistency of property room data. Similarly, "returned to owner" must also be operationally defined in order to identify clearly when a piece of property is, in fact, returned to its owner (e.g., is an item considered "returned" if its owner is identified, but the property is held as evidence for a trial?).

6. Post survey. The final data source is a survey of both O-I participants and non-participants conducted either in

Table 2-6

DATA ITEMS COLLECTED FROM POLICE PROPERTY ROOM RECORDS

Label	Data Item
PR.1	Number of unmarked property items[a] (SPIs) recovered
PR.2	Number of unmarked property items (SPIs) returned[b] to owners
PR.3	Number of unmarked property items (SPIs) returned to owners in the target area
PR.4	Number of marked[c] property items (SPIs) recovered
PR.5	Number of marked property items (SPIs) returned to owners
PR.6	Number of marked property items (SPIs) returned to owners in the target area

a. "property items" refer to specific property types defined by the individual projects.
b. "returned" definition established by the individual projects.
c. "marked" definition established by the individual projects.

person or by telephone one year after the beginning of the project. (Identity of O-I participants can be obtained from the project registration files.)

Burglary information about O-I participants is crucial to the evaluation of the burglary deterrent effects of O-I, and the post-survey is the recommended mechanism for acquiring this information. An alternate method is the examination of all

residential burglary reports filed during the past year. The officer reporting a burglary must indicate whether the household displays decals (data item BR.1) or has marked property (data item BR.2).

Data items obtained from all participants are shown in Table 2-7. The information collected from burglarized O-I participants includes all data items in Table 2-7 and those listed in Table 2-8. The post-survey information obtained from non-participants is listed in Table 2-9.

Table 2-7

POST-SURVEY DATA OBTAINED FROM O-I PARTICIPANTS

Label	Data Item
PS.1	Problems with the O-I project
PS.2	O-I number used
PS.3	Number of decals used
PS.4	Number and type of property items inventoried
PS.5	Number of crime prevention methods used since joining the O-I project
PS.6	Attitude toward the police

Table 2-8

POST-SURVEY DATA OBTAINED FROM BURGLARIZED O-I PARTICIPANTS

Label	Data Item
PS.7	Number of times burglarized since joining the O-I project
PS.8	Date of each burglary and whether reported to the police
PS.9	Amount stolen in each burglary
PS.10	Number of burglaries, marked property (SPIs) stolen
PS.11	Number of burglaries, marked property (SPIs) returned

Table 2-9

POST-SURVEY DATA OBTAINED FROM NON-PARTICIPANTS

Label	Data Item
PS.12	Percent aware of the O-I project
PS.13	How did each first hear about the O-I project?
PS.14	Most useful source of information about the O-I project
PS.15	Percent who want to join
PS.16	Reasons for not joining previously
PS.17	Number of crime prevention activities used during the past year
PS.18	Quality of police services
PS.19	Number of burglaries in the past year
PS.20	Date of each burglary
PS.21	Number of burglaries, any property stolen
PS.22	Number of burglaries, any stolen property returned

D. Implementation Guidelines

This section presents a checklist of specific activities for each phase of the evaluation plan. The contribution of these activities to the quality of the final evaluation cannot be overemphasized. The best-conceived plan will produce only minimal results unless there is sufficient planning to ensure both the existence of the required evaluation data and the cooperation of the police officials and project staff.

1. Initial planning. Such activities preferably should take place before the O-I project begins. Depending on staff time available and project size, initial planning efforts can easily require several man-months. Specific activities to be completed in this phase include:

- o Determination of the specific evaluation questions to address. What are the objectives of the project? Are there unusual circumstances, peculiar to this project, which should be examined?

- o Determination of the specific measures and data items required for each evaluation question.

- o Review of information sources. What data items can be collected from existing data sources? In what form are the data? Are they reliable and complete? What modifications must be made to existing records or procedures? What new data sources are required?

- o Identification and contact with the principal administrators involved in implementing and evaluating the project. Does each person understand what the evaluation effort is designed to accomplish? Is each aware of his role in the implementation of the evaluation plan? Does each approve interventions or modifications necessary to collect some of the evaluation data?

- o Determination of the capabilities and size of the evaluation staff. What professional, administrative, and technical skills are needed (e.g., knowledge of

the local police system, construction and implementation of surveys, statistical analysis of data)? Who will collect and maintain the data for the evaluation files? Can O-I project staff members and police officers collect data?

- o Construction of an overall evaluation schedule. What lead times are required for the preparation of the data collection forms? How frequently will the data be tabulated? How much time will be required for analysis and preparation of evaluation findings?

- o Estimation of the total resources required for the evaluation. How much will be expended for the evaluation staff, outside consultants, data collection forms, and office space and supplies? From what sources will these resources be obtained?

One of the most important activities identified above is the review of the information sources. Careful attention to this task will assure that accurate information about all key items is obtainable. Guidelines reviewing each of the six data sources identified for this evaluation plan are discussed below:

- o Registration survey. Once the method of data collection from this source has been determined, collection procedures and forms must be prepared, then coordinated with the registration process to ensure that all required data items are obtained as efficiently as possible. Training, or at least a set of instructions, for each site worker, is desirable. (See Appendix B for a sample registration questionnaire.)

- o O-I project files. Although it is not critical that the exact form of the data items maintained in the project files be determined prior to the beginning of the O-I project, the format of the project records and who will be responsible for their maintenance should be considered.

- o Target area statistics. The required crime data items should exist in a form usable for the evaluation plan.

- o Individual burglary records. Information should be secured before the project begins as to exactly what information items can be obtained about each burglary, and procedures necessary to capture that data. Whether acquisition of the required burglary data is easy or

next to impossible, the collection process must be well defined, and clearly understood by both the police and project personnel affected.

- o Police property room records. An accurate assessment of the feasibility of obtaining the required data from the police property room should be made during the initial planning phase. If the decision is made to collect property recovery and return data, collection procedures and forms used should be constructed with the help of a person thoroughly familiar with property room procedures. If the data collection is to be performed by property room personnel, they should receive necessary training about the nature of the information to be collected.

- o Post-survey. The only initial planning activity required for this data source is its inclusion in both the evaluation schedule and the total cost estimate of the evaluation effort.

2. Monitoring efforts. Once the O-I project begins, the ongoing data collection efforts should be monitored on a regular basis by the project staff to assure:

(1) data are checked for consistency and errors during the collection period;

(2) early resolution of ambiguities and problems with the collection procedures or forms; and

(3) better recognition and assessment by the evaluator of secondary and unexpected results and non-quantifiable effects.

3. Final analysis. After one year, the evaluation staff must draw together all of the collected data in order to examine each of the evaluation questions.

The major data collection task is to complete the post-survey of O-I participants and non-participants; survey preparation should have begun approximately three to four months before the survey is actually conducted. Important issues to be resolved in connection with survey preparation include:

(1) the survey method (i.e., on-site interviews or telephone);

(2) the size of each sample;

(3) the selection process for each sample;

(4) construction of each survey questionnaire (see appendixes C, D, and E);

(5) pretesting the surveys;

(6) training the interviewers; and

(7) tabulating the final results.

Other tasks include accumulation of all collected data, use of the information to test each question, and preparation of the evaluation results.

E. Evaluation Costs

The total resources to be expended on this evaluation plan depend on several factors, including the type of evaluation desired, the size and scope of the O-I project, and the existence and usability of records maintained by both the O-I project and the local police department. Each of these issues must be thoroughly examined before realistic cost estimates can be made.

In estimating the cost of using this evaluation plan for their project, O-I evaluators should:

(1) Identify each of the major tasks required within each phase of the plan (Table 2-10 reviews the principal tasks);

(2) Estimate the total amount of time and effort required for each task. These estimates should be substantiated by conferring with project and police officials involved in each task; and

Table 2-10

PRINCIPAL TASKS REQUIRED FOR EACH PHASE OF THE PROPOSED O-I EVALUATION PLAN

Phase	Principal Tasks
o Initial Planning	• Adapt the evaluation plan to local project • Review existing data sources • Design data collection forms • Contact project and police personnel • Design registration survey forms • Coordinate the preparation and distribution of all data collection forms
o Project Monitoring	• Periodically contact project and police personnel • Correct data collection problems • Code and tabulate evaluation data • Maintain project files
o Final Analysis	• Prepare post-survey interview forms • Select post-survey sample • Coordinate implementation of the post-survey • Code and tabulate all collected data in final form • Compare and analyze tabulated data • Prepare evaluation report

(3) Identify the specific skills required for each task (e.g., data coding, survey construction, statistical analysis).

With this information, the specific kinds of expertise needed can be identified and the total amount of effort required from each can be estimated. These estimates, in turn, can be used to obtain a total cost estimate for the proposed evaluation plan. The results of past evaluations indicate that resources expended for evaluation personnel and services usually represent almost all of the total cost of an evaluation.

Few O-I projects actually pay for all of the manpower resources they use for the evaluation of their project. Very often, the effort is incorporated into the administration of the project and evaluation becomes part of the overall cost of the project. In addition, some or all of the data collection efforts requried are frequently obtained without cost by using project and police personnel.

As a result, the visible costs for the evaluation of an O-I project frequently appear deceptively small. Unfortunately, the practice of absorbing part or all of the evaluation costs has helped to foster the misbelief that evaluation efforts are, in fact, low cost ventures that can be easily tacked onto existing projects. Whether evaluation costs are visible or not, project evaluators should make every effort possible during the initial planning stage to accurately identify and cost all of the efforts associated with the proposed evaluation plan. The determination of a realistic plan depends, to a very large degree,

upon a thorough review of the total resources that will be required and an accurate appraisal of the potential resources that will be available.

CHAPTER III. PARTICIPANT RECRUITMENT AND ENROLLMENT

A. Introduction

The four evaluation questions examined in this chapter are designed to assess the effectiveness of those O-I activities directed at participant recruitment and enrollment. For each question, one or more quantifiable measures are introduced, their advantages and shortcomings are identified, and the specific data items needed to compute each are defined. Collection difficulties, data reliability problems, and the amount of information needed are discussed when applicable.

B. Question 1: How Successful is the O-I Project in Informing and Recruiting Citizens for Operation Identification?

The objectives of O-I recruitment efforts are to educate the public about the purpose and need for Operation Identification, and to persuade citizens to voluntarily join the project. Two measures are used to address Question 1. They are:

(1) the number of participants who join the project; and

(2) the proportion of the population that is aware of the project.

1. Number of participants. This measure is a direct count of the number of persons actually enrolling in the project as reflected by the information collected at the time of registration (data items RI.1, RI.2, and RI.4). The full impact of the recruitment effort cannot be adequately assessed unless accurate records about project participants are maintained. Poorly kept participation totals not only fail to reflect the

O-I recruitment efforts, but also hamper the evaluation of the true burglary deterrent effect of the project.

Assuming that the number of project participants is known at the end of one year of project operation, what level of participation represents a "successful" recruitment effort? Most O-I project implementors have found it much harder than they first believed to recruit more than a small proportion of the households in their target areas. The Telephone Survey conducted as part of this study revealed that only 10 of the 49 contacted projects more than a year old (20.4 percent) had recruited more than 10 percent of their target population. These results suggest that a realistic, first-year recruitment goal for most O-I projects would be the enrollment of between 5 and 10 percent of the target households.

The recruitment results attained during the first year can also be used as a guide in estimating future citizen participation, and the experience gained should be helpful in identifying and eliminating unproductive promotional activities. A serious difficulty with the use of the number of participants to measure recruitment effects is the fact that persons initially enrolled in the project are very likely to be the easiest to recruit. As the number of participants increases, however, the remaining group of non-participants includes individuals who are more difficult to recruit; and, as a result, the efficiency of the recruitment process (i.e., the number of new participants recruited for each unit of resources expended) is likely to decline.

Another factor which may hinder recruitment efforts in future years is the loss of manpower and financial support for the project. Local Operation Identification projects initiated with financial support from federal or state agencies cannot, as a rule, rely on that support indefinitely. Projects relying upon free advertising and promotional assistance from local radio and television stations often find it increasingly difficult to retain such support as the "newness" of the O-I project diminishes. Similarly, volunteer help from civic and community organizations may become increasingly scarce as other projects, in need of more immediate help, arise to compete for support.

O-I project implementors should carefully consider each of these issues when establishing realistic participation goals for future years, and in estimating the total resources required to achieve them.

2. Awareness of the O-I project. This secondary measure attempts to distinguish between public awareness of O-I and public willingness to join the program. Two measures are used to make this comparison. They are:

(1) the percent of the target area population aware of the Operation Identification project, A(%), and

(2) the percent of those persons aware of O-I who have joined the project, J(%).

To obtain A(%) and J(%), use

$$A(\%) = \frac{\left(\begin{array}{c}\text{estimated number}\\ \text{of non-participants}\\ \text{aware of the O-I project}\end{array}\right) + \left(\begin{array}{c}\text{total number}\\ \text{of O-I}\\ \text{participants}\end{array}\right)}{(\text{total number of households})}(100)$$

$$A(\%) = \frac{N_{np}\ P_a + N_p}{H}(100) \qquad (3.1)$$

and

$$J(\%) = \frac{\left(\begin{array}{c}\text{total number of}\\ \text{O-I participants}\end{array}\right)}{\left(\begin{array}{c}\text{estimated number of}\\ \text{non-participants aware}\\ \text{of the O-I project}\end{array}\right) + \left(\begin{array}{c}\text{total number}\\ \text{of O-I}\\ \text{participants}\end{array}\right)}(100)$$

$$J(\%) = \frac{N_p}{N_{np}\ P_a + N_p}(100) \qquad (3.2)$$

where

H = the total number of households in the target area;

N_p = the total number of registered project participants (data items RI.1, RI.2, and RI.4);

N_{np} = the total number of non-participants in the target area ($N_{np} = H - N_p$); and

P_a = the proportion of non-participants who are aware of the O-I project (data item PS.12).

The expressions for A(%) and J(%) can be simplified if the proportion of target area households participating in the project is used in place of N_p and H (i.e., let $P_t = N_p/H$); then

$$A(\%) = [(1-P_t)\ P_a + P_t](100) \qquad (3.3)$$

and

$$J(\%) = \frac{P_t}{[(1-P_t)\ P_a + P_t]}(100) \qquad (3.4)$$

Obviously, the reliability of both A(%) and J(%) depend upon the accuracy of the data collected both at the time of registration and during the post-survey. The registration files

must accurately reflect the true number of participants, and the post-survey sample of non-participants must be representative of all non-participants in the target area and large enough to provide an accurate estimate of the awareness level.

The findings of several O-I projects contacted during this study indicate that public awareness levels of 60 to 80 percent can be achieved within a year or two with a well-organized promotional campaign, but that only 10 to 20 percent of the citizens aware of the project actually participate.

To estimate the maximum participation level for an individual project, the percent of non-participants who are aware of the O-I project and want to join, P_j, can be used (data item PS.15). If 100 percent public awareness of the project is assumed, the maximum participation level, P_{tmax}, can be estimated with:

$$P_{tmax} = P_t + P_j\ (1 - P_t). \qquad (3.5)$$

This formulation assumes that all citizens can be made aware of the project, and that P_j will not change in the future.

This estimate of the maximum number of participants becomes more useful when combined with the cost estimates of the project. The total cost, C, required to achieve the maximum participation level can be estimated using the formula:

$$C = (\text{cost per participant})(P_{tmax})(H). \qquad (3.6)$$

The cost of recruiting each participant, C_p, can be estimated by dividing the total recruitment and enrollment costs of the O-I project (data items PF.2 and PF.3) by the total number of partic-

ipants, N_p. Although simple in concept, an accurate determination of all of the resources expended for an O-I project can be a very difficult task, particularly when several funding sources are used, and considerable amounts of "free" manpower are provided by government or private agencies. Nevertheless, individual project evaluators are urged to attempt these cost estimates in order to obtain some indication of what the total cost of the project may become. This study has shown that per-participant costs can be much higher than anticipated, and that few projects to date have realistically assessed total resources needed to achieve effective participation levels.

3. Citizen attitudes. Two additional non-quantitative data items may also provide useful insights into the different perceptions of the O-I project by participants and non-participants. When registering, participants would be asked to indicate why they are joining the project (data item RI.9). In the post-survey, non-participants who indicate that they do not want to join the project would be asked why not (data item PS.16). Their answers may aid project implementors in planning furture promotional strategies.

C. Question 2: How Effectively and Efficiently Does Each Recruitment Method Used by the O-I Project Produce New Participants?

An important element of this evaluation plan is assessment of the relative merits of the various promotional strategies to educate the public and recruit O-I participants. Each recruitment strategy can be examined in two ways: first, how effective

is it (i.e., how many persons are informed and how many participants are recruited?); and second, how efficient is it (i.e., how many dollars or manhours are expended for each new participant?). The advantages to the individual project in exploring these issues can be significant. Resources for the promotion of O-I usually constitute the major cost of a project, and early recognition of ineffective or inefficient techniques can produce substantial savings.

1. Effectiveness of individual recruitment methods. Both participants and non-participants who are aware of the project are asked to identify (1) how they first learned about the O-I program; and (2) what information source was most useful to them in explaining the O-I concept and providing basic information on how to join the local project.

The distribution of answers given by participants and non-participants to the first of these questions (data items RI.7 and PS.13, respectively) can be used to assess which promotional techniques reach the most persons. The answers given by both groups to the second question (data items RI.8 and PS.14) can be used to indicate how participants came to understand the O-I concept.

It must be emphasized that the responses to these questions will be based on the memory and opinions of both participants and non-participants. Hence, firm conclusions should be drawn only in the most obvious cases. Even so, the distribution of answers can be used to recognize and eliminate promotional

methods found to be particularly ineffective.

2. Efficiency of individual recruitment methods. This measure is designed to evaluate individual recruitment methods on the basis of unit cost (i.e., how much does it cost to recruit each participant with this method?). Two kinds of information are required for each method: (1) the number of citizens informed or recruited; and (2) the amount of resources expended.

The number of citizens informed and recruited by each method can be estimated by the effectiveness level measures discussed above. The amount of resources expended for each method is more difficult to obtain; it should include the total amount of monies and manpower used (data items PF.2 and PF.3). Then the awareness efficiency, A_j, of each method j can be computed with

$$A_j = \frac{\left(\begin{array}{l}\text{number of participants}\\ \text{who first heard of O-I}\\ \text{with method j}\end{array}\right) + \left(\begin{array}{l}\text{number of non-participants}\\ \text{who first heard of O-I with}\\ \text{method j}\end{array}\right)}{(\text{total cost of method j})}$$

$$A_j = \frac{[N_{apj} + (H-N_p)(P_a)(P_{anj})]}{C_j} \tag{3.7}$$

where

N_{apj} = number of participants who first heard of O-I through method j (data item RI.7);

H = total number of households in the target area;

N_p = total number of participants (data items RI.1, RI.2, and RI.4),

P_a = proportion of non-participants who are aware of the O-I project (data item PS.12);

P_{anj} = proportion of non-participants, aware of the project, who first heard of it through medhod j (data item PS.13); and

C_j = total resources expended for method j (data items PF.2 and PF.3).

The recruitment efficiency, R_j, of each method j is computed with

$$R_j = \frac{\left(\begin{array}{l}\text{number of participants who cited method}\\ \text{j as the most informative}\end{array}\right)}{(\text{total cost of method j})}$$

$$R_j = \frac{N_{pj}}{C_j} \tag{3.8}$$

where

N_{pj} = number of participants who cited method j as most informative (data item RI.8); and

C_j = total resources expended for method j (data items PF.2 and PF.3).

The past findings of several O-I projects indicate that promotional techniques differ considerably in their effectiveness and efficiency levels. For example, while large numbers of persons can be made aware of the project with mass media advertising, the recruitment benefits of these methods as measured by the number of participants enrolled are often quite poor. On the other hand, door-to-door canvassing appears to be very effective in recruiti[illegible] new participants, but relatively inefficient in terms of the number of persons contacted.

To date, very few O-I projects have successfully assessed the relative merits of their recruitment procedures. Instead, many projects collect considerable amounts of relatively useless data about their recruitment efforts--for example, activity logs

describing recruitment efforts in terms of the numbers of group meetings addressed, persons contacted, and news stories issued. Unfortunately, such records are almost never used to assess the merit of each activity. As a result, their only purpose is to document what the project has already done, whether correct or not. Individual implementors and evaluators should instead strive to use such data to plan future project activities.

D. Question 3: How Successful Are the Enrollment Procedures, Forms, and Equipment?

This question is designed to assess the enrollment activities of O-I projects. The evaluation of the enrollment procedures, forms, and equipment is achieved by collecting information from all participants at registration, and from a sample of participants during the post-survey (data items RI.15, RI.16, and PS.1)

These data items, particularly RI.15 and PS.1, are stated only in general terms in Chapter II since the number and kinds of specific questions used to explore this area should be based on the specific activities of each project. At a minimum, however, projects should inquire about problems associated with:

(1) the use of the engraving pen;

(2) the application and durability of the decals;

(3) the use of the inventory forms;

(4) the usefulness of the written instructions; and

(5) the cooperation and assistance provided by the project workers.

Responses to these and other appropriate questions can be

used to monitor and improve the enrollment procedures, the materials given to participants, and the performance of project workers.

E. Question 4: How Well Do O-I Participants Comply With Project Instructions and Guidelines?

The O-I projects discussed herein are cooperative efforts between an organized project usually administered through an agency of local government, such as the police department, and individual citizens. Questions 2 and 3 above can be used to identify project activities that are successful and should be continued, and those that have failed and should be altered or eliminated. Question 4 is designed to assess the O-I activities of the individual citizen.

The specific measures used to address this question are:

(1) the percent of O-I users who register with the project;

(2) the frequency with which each type of personal identifier is used;

(3) the number of property items marked by participants;

(4) the percent of participants who use decals; and

(5) the percent of participants who inventory their property.

1. Percent of registered participants. Many O-I projects have found that accurate estimates of the actual number of participants can be very difficult to obtain because of the numerous ways in which citizens can "join" the project without registering. For example, a citizen may purchase his own engraving pen or borrow one from a neighbor or friend. Obtaining decals without registering with the project is often quite easy, since few

projects establish firm controls on the distribution of project materials. In some communities, citizens can join any one of several property marking programs which have the same target areas.

To estimate the percent of unregistered participants, P_u, in the target area, let "O-I participant" be defined as a household that either displays decals or has marked one or more pieces of property. With this definition, P_u can be computed with

(3.9) $$P_u = \frac{N_b - N_{br}}{N_b} (100)$$

where

N_b = total number of burglarized O-I households (obtained from data items BR.1 and BR.2); and

N_{br} = total number of burglarized O-I households registered with the O-I project.

Using P_u, an adjusted estimate of the total number of participants, N_p, in the target area becomes

(3.10) $$N_p = \frac{N_p}{1 - \frac{P_u}{100}}$$

2. Types of identifiers used. The frequency with which each type of personal identifier is used can be obtained at the time of registration (data item RI.5) or during the post-survey (data item PS.2). If a significant number of persons are using identifiers other than those recommended by the project or which are not traceable, instructions given to citizens when they borrow engraving pens should be modified.

3. Number of items marked. The number of items marked can be obtained at the time of registration and used to monitor the enrollment process. Statistics kept by O-I projects to date indicate that an average of 5 to 10 property items are marked in each participating household.

4. Extent of decal use. Since Operation Identification is a deterrence concept, its success is partially dependent upon visible decals which identify participating households. Many O-I projects, however, have reported difficulties in persuading new enrollees to use them. Some participants are reluctant to display decals, claiming that they notify burglars that there is valuable property to be stolen. Another problem has been the deterioration of decals exposed to weather.

An estimate of the percent of project participants who use at least one decal, P_d, can be obtained with

(3.11) $$P_d = \frac{N_d}{N_{sp}} (100)$$

where

N_d = total number of participants interviewed in the post-survey who have used at least one decal (data item PS.3), and

N_{sp} = total number of participants interviewed for post-survey.

As with the other measures, the extent of decal use reflects the effectiveness of the project enrollment procedures.

5. Inventory lists. The final measure for examining the degree of citizen compliance with O-I project guidelines is the percent of participants who maintain property inventory lists.

Most O-I projects recommend that each participant record, at the very least, all property items he has engraved. The purpose of such lists, whether restricted to marked property or not, is to provide the police with better descriptions of stolen property items.

The percent of registered participants who compile such lists, P_i, can be estimated with

(3.12)
$$P_i = \frac{N_i}{N_{sp}}(100)$$

N_i = total number of sampled participants who have compiled an inventory list (data item PS.4), and

N_{sp} = total number of participants sampled for the post-survey.

CHAPTER IV. BURGLARY DETERRENCE

A. Introduction

Conceptually, the burglary process consists of the following stages:

- o the decision to commit a burglary;
- o the selection of a target premise;
- o the entry into the selected target;
- o the selection of items to be stolen;
- o the escape from the target; and
- o the disposition of the stolen property (or its retention by the burglar for personal use).

Activities associated with O-I attempt to intervene most directly in the target selection stage (i.e., project decals warn burglars that the resident is an O-I participant) and the item selection stage (i.e., engraved markings warn burglars that the property can be identified). Less directly, O-I may intervene into the burglar's escape from the target by linking him to the crime if he is apprehended with identifiable property in his possession, and into the burglar's disposition of stolen items by making property more difficult to fence. To the extent that O-I recruitment activities can motivate citizens to implement other target-hardening programs, O-I can also intervene into the target entry stage. The extent to which O-I can create fencing difficulties and increase burglary apprehensions supports O-I's intervention into the target selection stage, by affecting the burglar's reaction when confronted with potential

targets displaying O-I decals. These interventions are discussed in greater detail in Volume I of "Phase I Evaluation of Operation Identification" (see Part III, "Assessment of Effectiveness").

Although an increase in the apprehension, prosecution, and conviction of burglars and a decrease in the fencing opportunities for stolen property are stated objectives of many O-I projects, evaluation of these effects by single projects has encountered numerous problems including:

- a lack of historical data with which to compare pre- and post-O-I results;
- the inability of O-I projects to obtain the cooperation of other agencies (e.g., courts) in order to obtain the data needed to evaluate these effects;
- the inclusion of many O-I projects in larger crime prevention programs which makes it difficult to isolate O-I project effects on burglaries and burglars; and
- the number of times marked property is stolen from O-I participants does not produce enough apprehensions to evaluate O-I's effect.

To illustrate the last problem, suppose an O-I project in a community with 30,000 households and a burglary rate of 50 burglaries per 1,000 households per year has enrolled 10 percent of the households during the program's first year. Assuming that O-I enrollment occurred at a uniform rate throughout the year and that participation in O-I had no effect on the risk of being burglarized, the expected number of burglaries for the entire year among O-I participants was only 75. (The actual number of burglaries may be lower due to the deterrence effect of the project decals.) The 1973 FBI Uniform Crime Reports in-

dicated that only 18 percent of all burglaries were cleared by arrests, that of the adults arrested for burglary, 82 percent were prosecuted; and that 49 percent of those prosecuted were convicted of burglary. Using these national averages, the 75 burglaries above would produce only six adult arrests, of which five would be prosecuted and only two would be convicted.

The intervention into the burglary process resulting from increased citizen awareness about the risk of burglary and increased utilization of other target-hardening devices, is explored in Chapter VI. The remainder of this chapter focuses on O-I's intervention into the burglary process at the target selection stage.

Two approaches are frequently used to measure the effectiveness of O-I as a burglary deterrent:

- the comparison of the burglary victimization rate of project participants with the rate for non-participants, and
- the comparison of burglary rates for project participants both before and after enrollment in O-I.

The first method is based on the assumption that, except for participation in Operation Identification, the two groups are sufficiently similar to permit a valid comparison of their respective burglary rates. If this assumption is true, differences detected between the rates can be attributed to the involvement of one group in O-I.

Unfortunately, this may not be a valid assumption. Participation in O-I is voluntary and persons first attracted to the project are likely to be those most aware of and concerned

about the threat burglary presents to them. As a result, they may have taken precautions in addition to O-I to ensure the security of their premises. On the other hand, the group of non-participants includes citizens who are apathetic about protecting themselves. As a result, O-I participants as a group may be less vulnerable to burglary than non-participants.

Some O-I projects have also experienced difficulty in promoting participation in Operation Identification among residents of low-income and high-crime areas because of apathy, a general mistrust of crime control projects, and the feeling that they have no property worth protecting. Such circumstances further accentuate the differences that may exist between the participant and non-participant groups.

Although comparison of participant burglary rates before and after enrollment in O-I avoids the problems identified above, this approach also has several shortcomings. Such comparisons assume that except for joining Operation Identification, the measurable vulnerability of participants to burglary has not changed (i.e., neither their utilization of other target-hardening devices, nor the likelihood that they will report to the police crime committed against their property has increased as a result of their participation in O-I). Furthermore, the results of these comparisons can be affected by changing burglary rates in the target area and by seasonality. (These factors are controllable. See Question 6.)

A self-selection bias can also be introduced. If, for

example, many citizens join O-I in response to a recently experienced burglary, participant burglary rates for the period prior to enrollment will appear artificially inflated; consequently, a decrease in the burglary rate will occur independent of any intervention introduced by Operation Identification.

The approach proposed in this chapter to assess the burglary deterrence effects of O-I is based on a comparison of before and after burglary rates for O-I participants (questions 5 and 9 below); and the measurement and, when possible, the control of the extraneous effects discussed above (questions 6, 7, and 8).

B. Question 5: Do O-I Participants Experience an Absolute Decline in Burglary Rates?

The purpose of this question is to determine whether O-I can deter a significant number of burglaries that otherwise would have been expected among project participants.

Measures of effectiveness. Burglary is usually defined as the unlawful entry of a premise for the purpose of committing a felony, and the reduction of burglary rates by O-I is accomplished by deterring burglars from entry. While property marking may theoretically prevent the theft, the burglary has already occurred by the time the burglar discovers the marked property. Therefore, the direct deterrence of burglary by O-I occurs because of the burglar's reaction to posted O-I decals. Hence, to assess O-I's burglary deterrent effectiveness, "par-

ticipants" are here defined as those households which display at least one warning decal, whether any property has been marked or inventoried. For all of the questions addressed in this chapter, burglary rate is defined as the number of residential burglaries occurring per 1,000 household-years which is simply the number of burglaries reported by 1,000 households during one year.

To measure the absolute change in participant victimization, separate burglary rates are computed for periods before and after O-I enrollment. Burglary data for the period before is collected from participants at the time of registration (data item RI.10); each participant is asked the number of times he has been burglarized during the two years prior to his enrollment in the O-I project. The before burglary rate, BBR, is computed with

$$BBR = \frac{500\ PB_b}{N_p} \quad \text{burglaries per 1,000 participant-years} \tag{4.1}$$

where:

PB_b = number of burglaries committed against O-I participants during the two years prior to joining the O-I project (data item RI.10); and

N_p = total number of registered participants (data item RI.1).

The after period burglary data for O-I households are obtained either from the individual burglary reports (data item BR.1) or from the number of burglaries reported by burglarized participants in the post-survey (data item PS.7). The after

burglary rate, ABR, is computed with

$$ABR = \frac{1000\ PB_a}{PY_d} \quad \text{burglaries per 1000 participant-years} \tag{4.2}$$

where:

PB_a = the total number of burglaries reported for participating O-I households (data item BR.1 or PS.7); and

PY_d = the total number of participant-years at the time of the post-survey for the participants displaying project decals (data items PF.1 and PS.3).

The total number of participant-years for participants displaying project decals, PY_d, is obtained from the formula

$$PY_d = (PY_p)(P_d) \tag{4.3}$$

where:

PY_p = total number of participant-years for all registered participants at the time of the post-survey (data item PF.1); and

P_d = proportion of participants interviewed in the post-survey who are using one or more decals (data item PS.3).

Care must be taken in calculating the total number of participant-years, PY_p, since at the time of the post-survey each participant will have been in the project for a different length of time. Given the date of enrollment for each participant and the date of the post-survey, the length of participation could be computed for each participant and aggregated to obtain PY_p. If the exact enrollment data for each participant is not known, an estimate of PY_p can be obtained if the number of enrollees is known either by year or by month. If the par-

ticipation total, N_p, is known only for the entire year, PY_p can be estimated by assuming that enrollments have been uniform throughout the year and, as a result, the average length of time each participant has been in the project is six months. Hence

(4.4) $$PY_p = \frac{1}{2} N_p \text{ participant-years.}$$

If, however, monthly participation data are available (let N_{pi} denote the number of participants enrolled during month i), then a better estimate of PY_p for 12 months is given by

(4.5) $$PY_p = \frac{1}{12}(11.5\ N_{p1} + 10.5\ N_{p2} + \ldots + 1.5\ N_{p11} + 0.5\ N_{p12}).$$

Comparison of BBR and ABR indicates whether O-I participants have experienced an absolute reduction in their burglary rates since joining the Operation Identification project. The percentage change in the burglary rates can be computed with

(4.6) $$100\left(\frac{ABR}{BBR} - 1\right).$$

Several factors should be noted in using this measure: (1) it is assumed that except for the added "protection" afforded by participation in O-I, the vulnerability to burglary of each participating household has not changed over the time periods measured; (2) it is assumed that participation in Operation Identification does not affect a burglary victim's crime reporting rate; (3) the "regression artifact" phenomenon, discussed below is ignored; and (4) no adjustments have been made for the effects of seasonality and changing crime patterns on the burglary data.

The extent to which the first three factors has occurred can be measured, and these results can be used to qualify the assessment of Question 5. Such measures are presented below in the discussions of questions 7, 8, and 14, respectively. The effect of seasonality on the before and after burglary rates has been minimized by using time periods that include each month of the year an equal number of times. The effects of seasonality on the after burglary data cannot be completely eliminated, since the number of O-I participants (and therefore the number of potential burglary targets) increases with each succeeding month of project operation. As a result, a project may have a higher first-year burglary rate if implemented in November rather than May, since participation levels for the former case would be greater during the summer months when burglary rates are generally higher. When participation levels are low, however, the magnitude of this seasonality effect is small, and in general can safely be ignored. Adjustments for the burglary trend are illustrated in the discussion of Question 6.

Data reliability. Burglary data obtained from O-I participants either at the time of registration or during the post-survey are unreliable to the extent that they depend on the memory of the interviewees and their willingness to accurately detail previous burglary victimization. The influence of this unreliability can be significant if the total numbers of burglaries used in the computation of the before and after

burglary rates are small. In such cases, slight inaccuracies in determining the number of burglaries can affect both the magnitude and the direction of change in the burglary rates.

Reliability of burglary data obtained from participants can be assessed by examining police department burglary files. Such a procedure is difficult to implement, however, since only burglaries of citizens joining the O-I project are of interest. Since burglary reports in many police departments are filed in numerical sequence, rather than by location of the crime or the victims' names, it may be impossible to verify the number of burglaries indicated by O-I participants without examining every burglary report. The possibility of unreported burglaries must also be considered in this assessment.

Significance of the results. Interpretation of observed changes in the participant burglary rates must be carefully made. Threats to the validity of observed changes in the rates include changes in the crime reporting patterns of participants after joining the O-I project (see Question 7), and the possibility that many participants join O-I shortly after they have been burglarized, thus creating an inflated before burglary rate (see Question 8). Even if a substantial decrease in participant burglary rates is observed, the question remains as to how much of this decrease is directly attributable to O-I, and how much to other preventive measures taken by participants after joining the project (see Question 14).

Decreases in participant burglary rates have been measured

by some O-I projects. In St. Louis, for example, a 24.9 percent decline in the after burglary rates for participants was observed (before burglary rates were based on the two-year period for each participant prior to joining the project). The Seattle O-I program reported a 32.8 percent decline for participants during the first six months after enrollment, compared to a six-month period prior to enrollment. Both the St. Louis and Seattle results were obtained with the expenditure of relatively large amounts of monies -- approximately $50,000 in St. Louis, and $127,000 in Seattle for a program consisting of O-I, block watch, and residential security inspections.

In the final analysis, the overall merit of the measured change in participant burglary rates depends on the magnitude of the change, the number of participants involved, and the cost of the project to the community.

C. Question 6: Do O-I Participants Experience a Decline in Burglary Rates Relative to Non-participants?

In communities where annual burglary rates for the entire community have increased substantially over a three-year period which began two years prior to O-I implementation, it is more difficult to demonstrate O-I's effectiveness by measuring only the absolute change in participant burglary rates. Burglary reductions due to O-I may be negated by greater increases in the overall burglary rate for the entire target area. For these communities, it is important to determine the change in participant burglary rate relative to the burglary experience

of non-participants during the same time period, in order to compensate for the prevailing burglary trend.

Measures of effectiveness. If the level of participation in O-I is low, then changes in non-participant residential burglary rates can be approximated by using burglary rates for the entire target area. Specifically, let $TABR_b$ denote the target area burglary rate during the two-year period before the implementation of the O-I project (expressed as residential burglaries per 1,000 households per year), and let $TABR_a$ denote the target area burglary rate during the year following implementation. Both $TABR_b$ and $TABR_a$ can be calculated from reported crime statistics for the O-I target area with

(4.7) $$TABR_b = \frac{1000\ TAB_b}{2H}$$ burglaries per 1,000 households per year

and

(4.8) $$TABR_a = \frac{1000\ TAB_a}{H}$$ burglaries per 1,000 households per year

where:

$TABR_b$ = total number of residential burglaries reported in the target area during the two-year period before the O-I project (data item CD.1 or CD.2);

$TABR_a$ = total number of residential burglaries reported in the target area during the one-year period after project initiation (data item CD.1 or CD.2); and

H = number of households in the target area.

With the target area burglary rates available, adjusted values for the before and after participant rates, ABBR and AABR

respectively, can be computed with

(4.9) $$ABBR = \frac{BBR}{TABR_b}$$ before participant burglaries per target area burglary,

and

(4.10) $$AABR = \frac{ABR}{TABR_a}$$ after participant burglaries per target area burglary.

For higher levels of O-I participation, target area burglary rates may be significantly affected by changes in the burglary rate among participants. As a result, these are less satisfactory estimates of non-participant burglary rates. More accurate burglary rate estimates for non-participants can be calculated by subtracting the number of burglaries reported at O-I households from the total number of burglaries reported in the target area, then dividing the result by the number of non-participants. Although easily described, this process is more complicated and difficult than it first appears. To illustrate, the before burglary rates for non-participants, $NPBR_b$, are computed with

(4.11) $$NPBR_b = \frac{1000\ NPB_b}{2H-N_p-PY_p}$$ number of before burglaries per 1,000 non-participants per year

where:

NPB_b = the total number of non-participant burglaries during the two years prior to the beginning of the O-I project (data items RI.4, RI.10, RI.11, and CD.1);

H = total number of households in the target area;

N_p = total number of registered participants at the end of one year; and

PY_p = total number of participant years for the N_p participants.

To obtain NPB_b, the total number of before participant burglaries that occurred prior to project implementation, PB_b', is subtracted from the total number of burglaries reported in the target area during the two years prior to the O-I project. The denominator in equation 4.11 represents the total exposure time of all non-participants during the two year period.

The after burglary rate for non-participants is calculated using

(4.12) $$NPBR_a = \frac{1000\ NPB_a}{H\text{-}N_p}$$ number of after burglaries per 1,000 non-participants per year

where:

NPB_a = the total number of non-participant burglaries during the first year of project implementation (data items RI.4, RI.10, RI.11, and CD.1); and

H, N_p = see definitions for equation 4.11.

To obtain NPB_a, the sum of all burglaries committed against O-I households, PB_a, plus all before participant burglaries, PB_b'', committed after the implementation of the project (i.e., $PB_b'' = PB_b - PB_b'$) is subtracted from the total number of burglaries reported in the target area during the first year of the project. If equations 4.11 and 4.12 are used to obtain non-participant burglary rates, then $NPBR_b$ and $NPBR_a$ replace $TABR_b$ and $TABR_a$ in equations 4.9 and 4.10.

Significance of the results. The discussion of the significance of observed changes in the burglary rates presented for Question 5 also applies with only one exception, to the comparisons made in Question 6. The one factor which equations 4.9 and 4.10 account for is the influence of burglary trends in the target area. Still to be discussed are the validity threats posed by changes in the vulnerability of O-I participants to burglary, changes in crime reporting rates, and the possibility of artificial reductions in participant burglary rates due to self-selection biases introduced by the enrollment process. An assessment of the importance of these factors must still be made.

D. Question 7: Do O-I Participants Report a Greater Proportion of the Property Crimes Committed Against Them to the Police?

One difficulty which some O-I evaluators claim masks the true effectiveness of O-I is that the burglary rate among O-I participants increases after their enrollment in the O-I project. Reasons cited for this are that:

- improved police-community relations fostered by an O-I project reduces the reluctance of some crime victims to notify the police;
- an O-I project promoted by a police department visibly demonstrates a concern by the police for law abiding citizens;
- O-I participants have more confidence in the police department's ability to successfully solve burglaries and recover stolen property; and
- the publicity promoting O-I encourages citizens to report burglaries to the police.

Measurement of effectiveness. Two alternate methods are presented here to measure the change in the burglary reporting rate of participants after their enrollment in the O-I project.

The method recommended in this plan to detect changes relies only on interview responses by O-I participants. Assuming that changes in the reporting rate will be most apparent for the most under-reported burglaries (i.e., those in which the victim suffers little or no monetary loss), this method examines the change in the proportion of all reported participant burglaries in which less than $50 was stolen. This is assumed to be indicative of the proportion of reported burglaries among participants involving the theft of less than $50.

The proportion or fraction of before burglaries for which less than $50 was stolen, FBL_b, and the proportion of after burglaries for which less than $50 was stolen, FBL_a, are calculated with

(4.15)
$$FBL_b = \frac{PBL_b}{PB_b}$$

and

(4.16)
$$FBL_a = \frac{PBL_a}{PB_a}$$

where:

PBL_b = total number of participant before burglaries in which less than $50 was stolen (data item RI.12);

PBL_a = same as PBL_b for participant after burglaries (data item PS.9);

PB_b = total number of before participant burglaries (data item RI.10); and

PB_a = total number of after participant burglaries (data item PS.7).

The conclusion that participant reporting rates have changed, based on a comparison of FBL_a and FBL_b, cannot be made

if participant compliance with recommended O-I procedures is found to be low (see Question 4). For example, if large numbers of participants mark their valuable property but fail to display the warning decals, they may experience burglaries in which little marked property is stolen. This could lead to an increase in the proportion of reported burglaries for which less than $50 was stolen even if no change at all had occurred in reporting rate. Consequently, comparison of FBL_b and FBL_a must be considered in light of the results produced by Question 4, or else the data used for FBL_b and FBL_a should be limited to participants who use the project decals.

The second method to measure reporting changes requires the examination of individual police department burglary reports. Preferably these reports would be filed in such a way that burglaries reported by particular victims or at particular locations can be easily found. Burglary file organization is not crucial if the total number of burglaries occurring during the test period (i.e., two years before and one year after the project implementation) is small enough to permit examination of each burglary report.

Both at the time of registration and during the post-survey, participants are asked for the number of times they have been burglarized during the two years prior to enrollment (data item RI.10, denoted by PB_b previously), and since (data item PS.7, denoted by PB_a). Burglaries actually reported to police can be determined by examining the burglary offense reports (let

the number of reported before and after burglaries be represented by RPB_b and RPB_a, respectively). The fraction of burglaries claimed at the time of registration which were reported to police, FR_b, can be computed and compared to the fraction of reported burglaries claimed after joining O-I, FR_a, with

(4.13) $$FR_b = \frac{RPB_b}{PB_b}$$

and

(4.14) $$FR_a = \frac{RPB_a}{PB_a}.$$

Amount of data required for assessing Question 7. Unless a substantial number (at least 30 or more) of burglaries both before and after O-I enrollment are used, the estimates of the proportion of burglaries reported to the police and the fraction of burglaries in which less than $50 was stolen, will probably not be suitable for assessing Question 7. If a very large number of burglaries are indicated for both time periods, however, the proportion of burglaries reported to the police can be estimated on the basis of a random sample (e.g., 50 burglaries) to avoid the effort required to locate all of the indicated burglaries.

Significance of the results. To determine whether the observed difference between the proportions, FBL_a and FBL_b, is significant, standard statistical procedures based on the comparison of binomial proportions can be used. The significance level will depend upon the total number of burglaries upon which each proportion is based (i.e., PB_b and PB_a). As these numbers increase, the significance of the computed difference will increase. (See Appendix F for a numerical example.)

E. Question 8: Do O-I Participants Experience "False" Burglary Rate Reductions Because Projects Enroll a Disproportionate Number of Recently Burglarized Citizens?

Participation in Operation Identification is generally self-initiated by citizens who have been motivated by project publicity, fear being burglarized, and want greater security for their residences. For some citizens, a recent burglary is the most important factor in motivating them to join O-I and take other burglary precautions. If the number of such participants is significant, the participants become particularly unrepresentative as a group in terms of their burglary history. As a result, the comparison of residential burglary rates before and after enrollment in O-I as a measure of O-I effectiveness as a burglary deterrent becomes biased in favor of O-I.

For example, suppose that a target area has a burglary rate of 50 burglaries per 1,000 households per year and that, because of the homogeneity of the area, this burglary rate also applies to any randomly-selected subset of households drawn from the area. Suppose also that the O-I project has enrolled 1,000 participants, 980 of whom have a representative burglary rate (i.e., as a group they have experienced 49 burglaries during the past year, a burglary rate exactly equal to 50 burglaries per 1,000 households per year); but that each of the other 20 households which join the project do so because of a burglary within the last year. Hence, the before burglary rate, BBR, for all 1,000 participants becomes

$$BBR = \frac{49 + 20}{1000} = .069 \text{ burglaries per participant per year}$$

$$= 69.0 \text{ burglaries per 1000 participants per year}$$

If no deterrence benefits at all are derived from O-I, the after burglary rate, ABR, for the participants, remains equal to 50 burglaries per 1,000 households per year (the overall burglary rate for the target area is assumed constant). Hence, comparison of the before and after burglary rates for participants would show a 27.5 percent reduction -- from 69 to 50 burglaries per 1,000 households per year.

It is important to note that if the 1,000 O-I participants had been randomly selected, their before burglary rate would have been very close to 50 burglaries per 1,000 households per year, and no significant difference would have appeared when the before and after burglary rates were computed. The voluntary nature of O-I, however, permitted a non-random sample of households to be selected, and the disproportionate number of before burglaries produced the inflated before burglary rate.

This phenomenon, called "regression artifact" or"regression to the mean", results from the treatment of a sample for a temporary extreme condition (e.g., a higher-than-normal burglary rate) which can be expected to return to normal without treatment. The example above illustrates the need to determine the extent to which the self-selection process of O-I enrollees has produced a regression artifact, before attributing large decreases in participant burglary rates to the presence of O-I.

Measuring the effect. As part of the registration process, new participants are asked their reason for joining the O-I project (RI.9). The frequency with which recent burglary victimization is cited as the reason will suggest the extent to which a regression to the mean has occurred, although the example above indicates that a surprisingly small percentage of participants so motivated can have a dramatic effect on the measured change in burglary rates.

An alternate method for detecting this effect is to compute several before burglary rates for O-I participants based on different periods of time. For example, two before rates could be computed, one based on the one-year period immediately prior to enrollment, and another on the second year before enrollment. These multiple before rates could then be used to calculate a before burglary trend which would not be as influenced by a temporary increase in burglaries during the time period immediately preceding enrollment.

To calculate before burglary rates for different periods of time, participant registration information is used; the date of each before burglary is examined in order to determine in which time period it occurred. Let PB_b^{-1} and PB_b^{-2} denote the number of burglaries reported by O-I participants during the first and second years prior to enrollment. (Note that $PB_b^{-1} + PB_b^{-2} = PB_b$ as defined above.) If N_p denotes the number of registered participants, then the before burglary rates BBR^{-1} and BBR^{-2}, for the two periods can be computed:

(4.17) $BBR^{-1} = \frac{1000\ PB_b^{-1}}{N_p}$ residential burglaries per 1,000 participants during the first year prior to enrollment,

and

(4.18) $BBR^{-2} = \frac{1000\ PB_b^{-2}}{N_p}$ residential burglaries per 1,000 participants during the second year before enrollment.

The burglary rate for the one-year period after enrollment, ABR, is computed as shown in equation 4.2.

To account for the overall burglary trend in the community, ABR, BBR^{-1}, and BBR^{-2} can each be adjusted using burglary rates for the target area for the first ($TABR_b^{-1}$) and second ($TABR_b^{-2}$) years prior to O-I implementation, and for the first year after implementation ($TABR_a$). The adjusted burglary rates are computed with

(4.19) $AABR = \frac{ABR}{TABR_a}$ after participant burglaries per target area burglary;

(4.20) $ABBR^{-1} = \frac{BBR^{-1}}{TABR_b^{-1}}$ before participant burglaries per target area burglary;

and

(4.21) $ABBR^{-2} = \frac{BBR^{-2}}{TABR_b^{-2}}$ before participant burglaries per target area burglary.

Comparing these adjusted rates, a regression to the mean is indicated if $ABBR^{-1}$ is significantly greater than both $ABBR^{-2}$ and AABR.

F. Question 9: Do Households in the Target Area Collectively Experience a Decline in Reported Burglaries Because of Operation Identification?

One of the major findings of this study is that the participation levels among existing O-I projects average only 5 to 10 percent of the households in the target area, even for O-I projects in existence for several years. Many O-I projects studied are financed with federal, state, or local government funds -- money which is then not available for programs with greater impact or public support. The results of the Telephone Survey of 99 projects also indicated that low income households (most often the victims of burglary) are under-represented among O-I participants. Critics of O-I use these facts to argue that, since O-I projects are largely supported by public funds, they should be evaluated in terms of the benefits they provide for the entire community; and that, to date, O-I projects have not demonstrated these benefits. Several previous evaluations of individual O-I projects have indicated that, although O-I participants appear to experience a reduction in burglaries, these crimes are in fact displaced to non-participants rather than prevented. If such displacement is occurring, police departments are likely to find Operation Identification of little value. Even if burglaries deterred from project participants are actually prevented, the benefit for the entire community may be minuscule if participation in the project is low.

Measurement of the effects of O-I on the entire target area. Accurate measurement of O-I's burglary deterrent effects for all households in the target area is difficult for several reasons:

- o burglary rates are influenced by a multitude of factors, many of which are virtually uncontrollable (e.g., economic conditions);
- o the existence of other burglary prevention programs in the target area makes it difficult to verify a direct cause and effect relationship between O-I and changes in the target area's burglary rate; and
- o control areas from which expected burglary patterns can be predicted (in the absence of O-I) are difficult to define.

One approach to measuring the target area benefits of O-I is to examine changes in the annual burglary rates for the target area for the periods before O-I was implemented in the community with the first (and subsequent) years of project operation. To illustrate, let $TABR_a$, $TABR_b^{-1}$, and $TABR_b^{-2}$ be the target area burglary rates during the year following, and the first and second years prior to O-I implementation respectively. The change in the burglary rate over the project's first year of operation, $\Delta TABR^1$, is calculated with

$$\Delta TABR^1 = TABR_a - TABR_b^{-1} \tag{4.22}$$

and the change in the burglary rate during the year prior to project implementation, $\Delta TABR^{-1}$, is given by

$$\Delta TABR^{-1} = TABR_b^{-1} - TABR_b^{-2}. \tag{4.23}$$

If $\Delta TABR^1$, is less than $\Delta TABR^{-1}$ (i.e., if $\Delta TABR^1$, is more negative than $\Delta TABR^{-1}$), then a reduction in the residential burglary rate following O-I's implementation can be reported, although not directly attributed to Operation Identification.

This approach is based on the assumption that, in the absence of O-I, the expected rate of change in the burglary rate

following project implementation can be estimated by the change during the previous year.

Reliable estimates for the expected burglary rates, in the absence of O-I, can be obtained with time series analyses based on historical burglary data. Such analyses, however, are frequently quite complicated and may be beyond the evaluation needs and abilities of individual O-I projects.

A more feasible approach for identifying changes in target area burglary patterns is to estimate the burglary trend, using monthly burglary data. To accurately estimate the burglary trend while eliminating the effects of seasonality and month-to-month variations, a 12-month moving average can be used. For cyclical or seasonal data with a period of 12 months, the moving average, A_i, for month i is calculated by summing the numbers of burglaries, B_j, reported for month i and the previous 11 months, and dividing the total by 12; i.e.,

$$A_i = \frac{1}{12}(B_i + B_{i-1} + B_{i-2} + \ldots + B_{i-11}) = \frac{1}{12}\sum_{j=i-11}^{i} B_j \tag{4.24}$$

Given month i's moving average, A_i, and the number of burglaries, B_{i+1}, reported in month i+1, the moving average for month i+1 can be calculated using

$$A_{i+1} = A_i + \frac{1}{12}(B_{i+1} - B_{i-11}) \tag{4.25}$$

Equation 4.25 indicates that the moving average for month i+1 is obtained from the moving average for month i by adding one-twelfth of the difference between the number of burglaries reported in month i+1 and month i-11. (Note that months i+1 and i-11 are exactly 12 months apart.)

Monthly moving averages plotted over several months can quite readily identify changes in the burglary trend. (See Appendix F for a detailed numerical example.)

While this method will highlight significant trend changes, the identification of their causes is a more formidable problem, and changes due exclusively to O-I are difficult to isolate. Previous evaluations of individual Operation Identification projects provide little insight about when (i.e., at what level of participation) or if target area burglary reductions due to O-I can be expected. At best, monitoring the burglary trend can enable project personnel to identify changes which occur as the result of the entire spectrum of burglary prevention activities, including O-I.

Data collection. Since monthly burglary data are available from police statistics, no special data collection procedures are needed to implement the measures discussed above. The only requirements are that the burglary data be available on a monthly basis (CD.2), and that comparable historical data also be available.

CHAPTER V. PROPERTY RECOVERY AND RETURN

A. Introduction

The second major benefit generally claimed for Operation Identification is the improved recovery and return of stolen marked property. Ideally, complete implementation of O-I produces several interventions into the property recovery and return process. Briefly, these O-I interventions occur because:

(1) burglarized participants who have inventoried their property provide better descriptions of stolen property to the police;

(2) marked property is more likely to be confiscated because it can be more easily linked to a specific crime; and

(3) recovered property is more likely to be returned to its owner if a personal identifier is engraved on the property.

Although these interventions are widely publicized by O-I projects, only a few projects have attempted to record the kinds and amounts of marked property that are stolen and recovered. As a result, the actual effects of O-I upon property recovery and return have not been verified.

Several reasons exist for the paucity of previous evaluations. In many police departments, the property system is hampered by poor facilities, limited resources, and untrained personnel. As a result, records are poorly maintained and often kept in a form that limits their use for evaluation purposes. Thus, for many projects even the acquisition of baseline data about the flow of recovered property is a task that would require

the expenditure of resources beyond the capabilities of the evaluation unit.

Also dissuading many projects from evaluating the property recovery benefits of O-I is the small amount of data available. Most projects to date report the recovery of only a handful of marked property items. To illustrate why this occurs, consider a target area with 100,000 population, and 33,333 households (assuming three persons per household). If only 10 percent of the households are O-I participants and the annual risk of being burglarized for participating households is 5 percent, then only 167 O-I households will be burglarized during an entire year (33,333 x .10 x .05 = 166.7). Further, if marked property is stolen in 75 percent of these cases and recovered about 25 percent of the time (about twice the national recovery rate of about 13 percent for property, excluding stolen automobiles, according to 1973 FBI statistics), then marked property will be recovered for only 31 households during the year. Measures and comparisons based on such a small number of incidents would not be particularly significant. For many projects, the participation, burglary, and recovery rates used above are too high; use of more conservative figures produces even fewer recoveries (e.g., if the participation level is 5 percent, the annual burglary risk 2.5 percent, and the recovery rate only 13 percent, the number of households for which any marked property is recovered is reduced to only 4).

In light of the above facts, project evaluators should, if

possible, perform each of the following steps in order to assess the feasibility of using questions 10, 11, and 12:

(1) Review existing property room procedures. Do all recovered property items eventually pass through a central office for documentation? How reliable are the recording procedures?

(2) Assess the data collection procedures. Can all or part of the required data be collected from existing forms? What modifications or additions to the documentation process will be required? Who will collect the data?

(3) Estimate the amount of data that will be collected. Using conservative estimates for participation levels, burglary rates, and recovery probabilities, determine the minimum number of stolen marked property items that will be recovered during the year. Is this amount sufficient to support the evaluation effort?

B. Selected Property Items

For each evaluation question presented in this chapter, quantitative measures used are based on the numbers of property items, marked and unmarked, that are stolen, recovered, traced and returned to their respective owners. Not all property items that are recovered and returned will be included in the computation of these measures. Rather, for reasons described below, each project will identify an appropriate subset of selected property items (SPIs) that will be used (e.g., the subset of SPIs may be defined as only stolen and recovered television sets and radios).

The advantages in restricting the evaluation data base to only the subset of SPIs include:

(1) Common data base. Examination of the same kinds of property items for both participants and non-participants permits legitimate comparison of recovery rates for both groups and avoids the argument that differ-

ent kinds of property are stolen from each.

(2) Size of the data base. A very large number of individual items can be processed through the property room of even a medium-sized police department. Limiting the evaluation to only a subset of these items limits the total volume of data that will have to be collected.

(3) Manageability of the data collection effort. Restricting the evaluation data to a selected subset of property items limits the data collection effort to only those property items that are easily definable and counted. Consider, for example, the increased definitional and collection problems that exist with obtaining an accurate count of the number of hand tools stolen during one year compared to obtaining the same information about stolen television sets.

Important factors to be considered in determining the property items to be included as SPIs are the ultimate size of the data base to be collected: will the property room or project personnel collect all of the data?; the ease of defining each item collected; the probability that such items are frequently marked by O-I participants: is the item easily markable?; and the frequency with which the selected items are stolen. In constructing such a list of items, each SPI should be described as precisely as possible. Table 5-1 illustrates both ambiguous and specific descriptors.

The designation of only a subset of property items for examination probably will not eliminate many burglaries from the data base. Scarr's 1972 study of burglary patterns in the Washington, D. C. metropolitan area revealed that cameras and accessories, home entertainment items, household goods, tools, and office supplies and equipment accounted for 25 to 50 percent

Table 5-1

RECOMMENDED PROPERTY ITEMS
FOR THE SPI SUBSET

Ambiguous Descriptors*	Specific Descriptors
Appliances	Televisions
Athletic equipment	Radios
Audio visual equipment	Stereo receivers or amplifiers
Boating equipment	Record players
Fishing equipment	Slide projectors
Office equipment	Motion picture projectors
Photographic equipment	Cameras
Sporting equipment	Guns
Tools	Typewriters
Household goods	Sewing machines
Home entertainment items	Stereo speakers
	Tape decks
	Tape recorders
	Power drills
	Power saws

* - These descriptors are shown here for illustrative purposes and their use is not recommended.

of all of the property items reported stolen.

In the remainder of this chapter, the collected data about stolen, recovered, and returned property will refer only to property items contained in the SPI subset.

C. Question 10: Is Stolen O-I Marked Property More Likely To Be Returned To Its Owner than Unmarked Property?

Question 10 is designed to test the ultimate effectiveness of O-I's property recovery and return benefit (i.e., do burglarized O-I participants have more stolen property returned to them than burglarized non-participants?). Two measures are introduced in this section to address this question.

The first is based on the number of both marked and unmarked SPIs that are reported stolen and the number eventually returned to their owners. The rather complicated data collection

procedures, even with the use of the SPI subset, are discussed in greater detail below.

The second measure is based entirely upon information obtained from project participants during both the registration and post-surveys. Although less accurate than the first measure, the data collection effort is significantly reduced; neither burglary reports nor property room records are needed. This measure may be the only feasible approach for some O-I projects.

1. Theft and return of SPIs. The specific data items that must be collected are:

N_{se} = the total number of O-I marked SPIs stolen during the year (data item BR.5);

N_{sne} = the total number of unmarked SPIs stolen during the year (data item BR.6);

N_{re} = total number of O-I marked SPIs returned to owners in the target area (data item PR.6); and

N_{rne} = total number of unmarked SPIs returned to owners in the target area (data item PR.3).

The data items, N_{se} and N_{sne}, are based on all of the reported burglaries in the target area during the year following project implementation. Care must be taken in examining burglary reports for project participants; it cannot be assumed that they have necessarily marked all of the SPIs they own. A participant may have both marked and unmarked SPIs stolen in the same burglary. As indicated in Chapter II, the project evaluator will have to establish clear, operational definitions for the terms "O-I marked" and "returned to owner" in order to ensure the consistency of the collected data.

The specific measures to be compared are (1) the probability of return for marked SPIs,

(5.1) $$P_{re} = N_{re}/N_{se};$$

and (2) the probability of return for ummarked SPIs,

(5.2) $$P_{rne} = N_{rne}/N_{sne}.$$

Comparison of P_{re} and P_{rne} is a direct test of Question 10. If either N_{se} or N_{sne} is less than 20, then the significance of the difference between P_{re} and P_{rne} should be tested as the difference between two binomial proportions. If both N_{se} and N_{sne}, however, are greater than 20, a chi-square test can be used to determine whether their difference is significant. (Both of these tests are described and illustrated in Chapter 8 of Experimental Statistics. A numerical example is included in Appendix F.)

Although the comparison of the P_{re} and P_{rne} probabilities is a valid test of the return benefits of Operation Identification, it should be noted that both measures represent the probability that the stolen property is returned by the local police and ignore property returned by police agencies in other jurisdictions. Hence, both P_{re} and P_{rne} represent lower limits on the return probabilities for all marked and unmarked SPIs.

2. Return probabilities per burglary. An alternative measure of the increased likelihood that O-I marked property will be returned to its owner can be constructed, using information obtained from participants at the time of registration and from both participants and non-participants in the post-survey.

The data items collected at the time of registration are

N_{bpb} = the number of burglaries reported by participants in which at least one piece of property was stolen during the year prior to joining the O-I project (data items RI.11 and RI.12);

N_{rbpb} = the number of burglaries in N_{bpb} for which at least one property item was eventually returned to the owner (data item RI.13); and

T_{90r} = the 90th percentile of all times in days from burglary to return of the first property item (i.e., 90 percent of the time, the first item is returned in T_{90r} or fewer days (obtained from data item RI.14).

Information collected from participants during the post-survey includes:

N_{ppb} = the number of burglaries in which one or more O-I marked items are stolen (data item PS.10);

A_{ppb} = the age of each burglary in N_{ppb} (data item PS.8); and

N_{rppb} = the number of burglaries in which one or more O-I marked items were returned (data item PS.11).

From non-participants, the post-survey obtains:

N_{pnb} = the number of burglaries during the last year in which at least one piece of property was taken (obtained from PS.21);

A_{pnb} = age of each burglary in N_{pnb} (data item PS.20); and

N_{rpnb} = number of burglaries in N_{pnb} for which one or more property items were returned to the owner (data item PS.22).

The age of each burglary is obtained to minimize the number of burglaries in N_{ppb} and N_{pnb} for which even a small chance still exists that some stolen property may still be returned. The criterion for including a burglary in either N_{ppb} or N_{pnb} is whether

is "older" than T_{90r}, the 90th percentile return time empirically derived from the registration survey. If a burglary occurred less than or equal to T_{90r} days before the post-survey, it is not included even if some property has already been returned. Modified values for N_{bpb}, N_{rbpb}, N_{ppb}, N_{rppb}, N_{pnb}, and N_{rpnb}, obtained by excluding burglaries later than T_{90r} will be designated as N'_{bpb}, N'_{rbpb}, N'_{ppb}, N'_{rppb}, N'_{pnb}, and N'_{rpnb} respectively.

With these adjusted figures, the return probability per burglary (RPB) can be computed for:

(1) participants before joining the project,

$$P_{rbpb} = N'_{rbpb}/N'_{bpb}; \tag{5.3}$$

(2) participants after joining the project,

$$P_{rppb} = N'_{rppb}/N'_{ppb}; \text{ and} \tag{5.4}$$

(3) non-participants during the first year of the project,

$$P_{rpnb} = N'_{rpnb}/N'_{pnb}. \tag{5.5}$$

These probabilities allow both a before-after comparison for project participants (P_{rbpb} to P_{rppb}) and a comparison of project participants to non-participants (P_{rppb} to P_{rpnp}). The significance of these probabilities (more precisely, proportions of binomial distributions) can be tested with the same statistical procedures identified above.

The advantages and disadvantages of the RPB measure of property return should be carefully weighed in determining whether or not to use it. It is less discriminating than return probabilities based on the number of stolen and returned SPIs. For example, although the RPB measure is sensitive to the return

of the first property item, it is insensitive to the final disposition of other property items that may or may not be returned. Another difficulty with the RPB measure is the fact that it requires participants and non-participants to recall the circumstances about burglaries that may have occurred several months earlier; it may be particularly difficult for some interviewees to estimate the time between each burglary and the return of the first property item. Finally, if the T_{90r} value derived from the participants at the time of registration is particularly large (e.g., several months), a significant number of burglaries identified in the post-survey may not be "old" enough to be included. This may be a problem if the total number of burglaries reported by participants and non-participants is not large. To interview a sufficient number of burglarized non-participants may force project evaluators either to increase the size of the non-participant sample or to conduct a separate survey of non-participants who have been burglarized during the last year.

D. Question 11: Is Stolen O-I Marked Property More Likely To Be Recovered by the Police than Unmarked Property?

Question 10 examines the ultimate benefit of the property recovery and return component of Operation Identification (i.e., the return of stolen property to victimized participants). Questions 11 and 12 are designed to examine the two principal elements of the return process: the recovery of the property by the police and the tracing of the owner.

The recovery probability for O-I marked property is not the same as the return probability: it is not always possible to

trace the owner, even when a personal identifier is found on a recovered property item. In fact, if the complications introduced by the transporting of stolen property across jurisdictional lines are ignored, the mathematical relationship between the probabilities of property recovery and owner tracing, and the probability of property return is quite simple:

$$\begin{pmatrix}\text{probability of}\\ \text{return}\end{pmatrix} = \begin{pmatrix}\text{probability of}\\ \text{recovery}\end{pmatrix} \times \begin{pmatrix}\text{probability of}\\ \text{tracing}\end{pmatrix}$$

Question 10 examines the left-hand side of this equation by comparing the probability of return for both marked and unmarked SPIs. Questions 11 and 12 use the two probabilities on the right-hand side respectively to examine the effect of O-I on the recovery of property and tracing of owners.

Paralleling the development of the return probabilities described in Question 10, the recovery probabilities for marked and unmarked property, respectively, P_{ce} and P_{cne}, are given by

(5.6) $$P_{ce} = N_{ce}/N_{se}$$

and

(5.7) $$P_{cne} = N_{cne}/N_{sne}$$

where

N_{ce} = the number of O-I marked SPIs recovered by the police (data item PR.4);

N_{cne} = number of unmarked SPIs recovered by the police (data item PR.1); and

N_{se}, N_{sne} = see definitions given for equations 5.1 and 5.2.

The statistical comparison of P_{ce} and P_{cne} can be performed using the same tests described for the return probabilities

P_{re} and P_{rne}.

Unfortunately, these probability measures are biased: both N_{ce} and N_{cne} may include marked property stolen in other jurisdictions, while the values, N_{se} and N_{sne}, are based exclusively on burglaries reported within the jurisdiction. The distortion introduced by the inclusion of recovered property from other jurisdictions can be ignored if either of the following assumptions is true:

(1) the volume of inter-jurisdictional property flow is small, compared to the volume of property stolen within the jurisdiction (not usually true in large metropolitan areas); or

(2) the volumes of marked and unmarked stolen property entering and leaving the jurisdiction are approximately equal.

Without the assurance of either assumption, however, the comparison of the recovery probabilities must be done with great caution. Firm conclusions should only be drawn if the probabilities are substantially different.

E. Question 12: Is Recovered O-I Marked Property More Likely To Be Traced to Its Owner than Unmarked Property?

The data items needed to calculate the probabilities for this question can be collected from the property room of the local police department. The two probabilities are:

(1) the probability of tracing the owner of a recovered, O-I marked SPI:

(5.8) $$P_{te} = N_{te}/N_{ce}$$

where

N_{te} = the number of O-I marked SPIs returned to owners (data item PR.5);

N_{ce} = the number of O-I marked SPIs recovered by the police (data item PR.4); and

(2) the probability of tracing the owner of an unmarked SPI:

(5.9) $$P_{tne} = N_{tne}/N_{cne}$$

where

N_{tne} = the number of unmarked SPIs returned to owners (data item PR.2);

N_{cne} = the number of unmarked SPIs recovered by the police (data item PR.1).

The numbers of SPIs returned, N_{te} and N_{tne}, include all property items returned to owners, whether they live in the target area or not. Similarly, the total number of SPIs recovered, N_{ce} and N_{cne}, is also based on property items stolen in and out of the target area. As a result, the measures P_{te} and P_{tne}, are unbiased estimates of the tracing probabilities for both marked and unmarked property items.

CHAPTER VI. OTHER O-I BENEFITS

A. Introduction

Two additional benefits often claimed for Operation Identification are its value in police-community relations (PCR) and as a vehicle for communicating crime prevention information to the public. Both of these effects, it is argued, contribute to lower burglary rates in the target area. Improved PCR contributes by motivating citizens to promote the O-I project among their neighbors and friends, and by encouraging closer citizen cooperation with the police by reporting suspicious persons to them. Increased knowledge about specific crime prevention techniques motivates citizens to survey their own households and incorporate additional target-hardening devices.

This chapter presents simple evaluation procedures for examining both hypotheses. The measures described are based upon the attitudes and behavior of participants and non-participants only after the beginning of the O-I project. Hence, without the presence of a control group, neither the assessment of significance or identification of underlying causes for observed changes in attitudes or behavior can be firmly established. As a result, while the measures used to test each of these hypotheses are useful, caution must be exercised in using these results to support specific cause and effect relationships.

B. Question 13; Does an O-I Project Improve the Relationship Between the Police and O-I participants and Non-Participants?

Question 13 is designed to detect changes in public attitudes about the police following the initiatiation of the O-I project. In the post-survey, both participants and non-participants are asked for their attitudes about the quality of the local police and, in particular, whether these attitudes have changed in the last year (data items PS.6 and PS.18). Examples of attitudinal survey questions about police service are shown in appendixes C and E.

Individual project evaluators should select with great care the specific questions to be asked. If possible, they should pretest the survey questions to identify potential problem areas. Survey questions which validly discriminate the attitudes sought are not easily constructed; survey ambiguities and bias are difficult to isolate and remove. Further, survey responses must be carefully examined to avoid over-interpreting the survey results.

Survey responses should be interpreted separately for participants and non-participants. The voluntary enrollment process very likely introduces a self-selection bias that makes comparison of survey results between the two groups very questionable. For example, past surveys of O-I participants at the time of enrollment indicate that they usually have a better opinion of police services than do non-participants.

The attribute which the post-survey of both groups seeks

to high-light is the change, if any, in their respective attitudes during the first year of the project. The lack of any significant change in both groups would be strong evidence that the presence of the O-I project had not appreciably affected public attitudes. A significant change in the attitudes of both groups, however, cannot be as quickly attributed solely to the existence of the O-I project. Without a control group for either participants or non-participants, the legitimacy of the claim that the observed changes are caused by the presence of the O-I project is weakened.

Despite the foregoing methodological weaknesses, these survey results can be useful indicators of O-I's overall merit to the community, when used in conjunction with other evaluation findings about the project.

C. Question 14: Do O-I Participants Use More Target-Hardening Procedures than Non-Participants?

This question is based on the hypothesis that O-I increases public awareness about the usefulness of crime prevention (CP) methods, and that this awareness in turn motivates citizens to use CP techniques for their own households. The measure used to test this hypothesis is the number of target-hardening activities used by both participants and non-participants during the first year of the project. This information is obtained in the post-survey questionnaires illustrated in appendixes C and E.

Comparison of the survey responses from participants and non-participants can be used to test the hypothesis that

because of their association with the O-I project, participants have in fact used more target-hardening devices in their homes than non-participants. If the survey results show considerably more crime prevention activity by participants, two explanations seem most probable.

First, the basic hypothesis may be valid -- association with O-I motivates citizens to use other CP methods. This explanation essentially supports the claim that O-I is a useful mechanism for communicating information about CP and motivating citizens to protect themselves. The second explanation is based on the argument that the kinds of people who join an O-I project are the same kinds who are motivated to take other precautions to secure their households. The implication here is that O-I participants will use other CP methods whether the O-I program exists or not. Although this explanation does not credit O-I with motivating citizens to use other CP activities, it is not entirely negative. It suggests that those citizens who are interested in crime prevention view O-I as another way to safeguard their homes; as public awareness of the need for crime prevention increases, participation in the O-I project should also increase.

On the other hand, if the survey results indicate no significant difference in the amount of CP activity between participants and non-participants, then the crime prevention benefits of O-I become suspect. Unless it can be argued that the CP benefits induced by O-I are equal for both groups, the

absence of any significant difference suggests that the O-I program has had little impact in motivating citizens to use other CP methods.

APPENDIX A

SUMMARY OF DATA SOURCES AND ITEMS USED FOR EACH EVALUATION QUESTION

Table A-1

DATA SOURCES USED FOR EACH
EVALUATION QUESTION AREA

Data Source	Evaluation Question Areas: Recruitment & Enrollment	Burglary Deterrence	Property Recovery & Return	Other Benefits
1. Registration Survey	X	X	X	
2. O-I Project Files	X	X		
3. Target Area Crime Statistics		X		
4. Individual Burglary Reports	X	X	X	
5. Police Property Room Records			X	
6. Post-Survey				
a. O-I Participants	X	X	X	X
b. Burglarized O-I Participants		X	X	X
c. Non-Participants	X			

Table A-2

THE FOURTEEN EVALUATION QUESTIONS
BY EVALUATION AREA

Recruitment and Enrollment

Question 1 — How successful is the O-I project in informing and recruiting citizens for Operation Identification?

Question 2 — How effectively and efficiently does each recruitment method used by the O-I project produce new participants?

Question 3. — How successful are the enrollment procedures, forms, and equipment?

Question 4. — How well do O-I participants comply with project instructions and guidelines?

Burglary Deterrence

Question 5. — Do O-I participants experience an absolute decline in burglary rates?

Question 6. — Do O-I participants experience a decline in burglary rates relative to non-participants?

Question 7. — Do O-I participants report a greater proportion of the property crimes committed against them to the police after joining Operation Identification?

Question 8. — Do O-I participants experience "false" burglary rate reductions because projects enroll a disproportionate number of recently burglarized citizens?

Question 9. — Do households in the target area collectively experience a decline in reported burglaries because of Operation Identification?

Table A-2 (continued)

Property Recovery and Return

Question 10. Is stolen O-I marked property more likely to be returned to its owner than unmarked property?

Question 11. Is stolen O-I marked property more likely to be recovered by the police than unmarked property?

Question 12. Is recovered O-I marked property more likely to be traced to its owner than unmarked property?

Other O-I Benefits

Question 13. Does an O-I project improve the relationship between the police and O-I participants and non-participants?

Question 14. Do O-I participants use more target-hardening procedures than non-participants?

Table A-3

REGISTRATION INFORMATION REQUIRED FOR EACH EVALUATION QUESTION

Data Label	Data Item	Evaluation Questions[a]													
		Recruitment & Enrollment				Burglary Deterrence					Property Recovery & Return			Other Benefits	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Registration Information														
RI.1	Participant name and address	X	X												
RI.2	Participant telephone number	X	X												
RI.3	Participant personal data														
RI.4	Date joined project	X	X												
RI.5	O-I number used				X										
RI.6	Number and type of property items engraved				X										
RI.7	How participant first heard about O-I		X												
RI.8	Most useful information source about O-I		X												
RI.9	Reason for joining project		X						X						
RI.10	Number of times burglaries in the last two years					X	X	X	X						
RI.11	Date of each burglary and whether reported to the police								X		X				
RI.12	Amount ($) taken in each burglary							X			X				
RI.13	Was at least one property item ever returned for each burglary										X				
RI.14	Time from each burglary to first returned item										X				
RI.15	Any problems with the project procedures, forms, or materials			X											
RI.16	Suggestions for improvement in the project			X											
RI.17	Other crime prevention techniques in use or currently being added														
RI.18	Attitude toward the police														

a. See Table A-2 for the specific evaluation questions.
b. Participant telephone numbers are used for the post survey.

Table A-4

O-I PROJECT FILE INFORMATION AND TARGET AREA CRIME DATA REQUIRED FOR EACH EVALUATION QUESTION

Data Label	Data Item	Evaluation Questions* Recruitment & Enrollment 1	2	3	4	Burglary Deterrence 5	6	7	8	9	Property Recovery & Return 10	11	12	Other Benefits 13	14
	O-I Project Files														
PF.1	Total number of participant years (-months)					X	X								
PF.2	Total amount of resources spent on recruitment activities		X												
PF.3	Total amount of resources spent on enrollment activities			X											
	Target Area Crime Statistics														
CD.1	Annual burglary data for the target area					X		X	X						
CD.2	Monthly burglary data for the target area					X		X	X						

* See Table A-2 for the specific evaluation questions.

Table A-5

INDIVIDUAL BURGLARY REPORT INFORMATION REQUIRED FOR EACH EVALUATION QUESTION

Data Label	Data Item	Evaluation Questions* Recruitment & Enrollment 1	2	3	4	Burglary Deterrence 5	6	7	8	9	Property Recovery & Return 10	11	12	Other Benefits 13	14
	Burglary Reports														
BR.1	Number of reported burglaries in target area (households displaying decal)				X	X	X	X	X						
BR.2	Number of reported burglaries in target area (households with marked property)				X										
BR.3	Date each burglarized O-I household joined project								X						
BR.4	Amount ($) stolen in each reported O-I burglary							X							
BR.5	Total number of marked items (SPIs) stolen										X	X			
BR.6	Total number of unmarked Items (SPIs) stolen										X	X			

* See Table A-2 for the specific evaluation questions.

Table A-6

POLICE PROPERTY ROOM DATA REQUIRED FOR EACH EVALUATION QUESTION

Data Label	Data Item	Evaluation Questions[a] 1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Property Room[b]	Recruitment & Enrollment				Burglary Deterrence					Property Recovery & Return			Other Benefits	
PR.1	Number of unmarked property items recovered											X	X		
PR.2	Number of unmarked property items returned to owners												X		
PR.3	Number of unmarked property items returned to owners in the target area										X				
PR.4	Number of marked property items recovered											X	X		
PR.5	Number of marked property items returned to owners												X		
PR.6	Number of marked property items returned to owners in the target area										X				

a. See Table A-2 for the specific evaluation questions.
b. "Property items" for all six data items refers to "selected property items" (SPIs) only. See Chapter V.

Table A-7

POST-SURVEY DATA REQUIRED FOR EACH EVALUATION QUESTION

Data Label	Data Item	Evaluation Questions* 1	2	3	4	5	6	7	8	9	10	11	12	13	14
	O-I Participants	Recruitment & Enrollment				Burglary Deterrence					Property Recovery & Return			Other Benefits	
PS.1	Problems with the O-I project			X											
PS.2	O-I number used				X										
PS.3	The number of decals used				X	X	X								
PS.4	The number and type of property items inventoried			X											X
PS.5	Number of crime prevention activities involved in since joining project													X	
PS.6	Attitude toward the police														
	Burglarized O-I Participants														
PS.7	Number of times burglarized since joining project					X	X	X	X						
PS.8	Date of each burglary and whether reported to the police										X				
PS.9	Amount ($) stolen in each burglary							X							
PS.10	Number of burglaries, marked property stolen										X				
PS.11	Number of burglaries, any marked property returned										X				

Table A-7 (continued)

Data Label	Data Item	Evaluation Questions*												
		Recruitment & Enrollment				Burglary Deterrence					Property Recovery & Return			Other Benefits	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Non-Participants														
PS.12	Aware of O-I project		X												
PS.13	How did each first hear about the project		X												
PS.14	What was the most useful source of information about the project		X												
PS.15	Number who want to join		X												
PS.16	Reasons for not joining		X												
PS.17	Number of crime prevention activities involved in during the past year														X
PS.18	Attitude towards the quality of police services													X	
PS.19	Number of burglaries in the past year										X				
PS.20	Date of each burglary										X				
PS.21	Number of burglaries, any property stolen										X				
PS.22	Number of burglaries, any stolen property returned										X				

* See Table A-2 for the specific evaluation questions.

APPENDIX B

SAMPLE PARTICIPANT REGISTRATION QUESTIONNAIRE

OPERATION IDENTIFICATION

PARTICIPANT REGISTRATION QUESTIONNAIRE

Name (RI.1): _____

Address (RI.1): _____

_____

Telephone number (RI.2): _____

Age (RI.3): _____ , Sex (RI.3): _____ , Race (RI.3): _____

Income level (RI.3): _____

Date (RI.4): _____

How did you first hear about Operation Identification (RI.7)?

Newspaper: _____

Radio: _____

Television: _____

Billboard: _____

Mail: _____

Relative/Friend/Neighbor: _____

Meeting of community or civic group: _____

Display in library, police station, business, etc.: _____

Other: _____

What source provided you with the most useful information about Operation Identification -- for example, how to join (RI.8)?

Newspaper: _____

Radio: _____

Television: _____

Billboard: _____

Mail: _____

Relative/Friend/Neighbor: _____

Meeting of community or civic group: _____

Display in library, police station, business, etc.: _____

Other: _____

Why did you join Operation Identification (RI.9)? (check as many as apply)

Recently burglarized: _____

Recent burglary in neighborhood: _____

Burglary prevention: _____

Return of property in case of burglary: _____

Recommended by others: _____

Other (specify): _____

Did you engrave your property with the identifying number recommended by the project (RI.5)?

Yes: _____

No: _____

If not, what number did you use? _____

How many personal property items did you engrave with this number (RI.6)? _____

Which of the following problems did you experience with enrollment procedures or instructions, forms, or materials you were given (RI.15)?

Delays in obtaining engraving tools: _____

Instructions were unclear: _____

Engraving tool did not operate properly: _____

Engraving tool was difficult to use: _____

Engraving damaged or detracted from the appearance of property? _____

Some property items could not be engraved: _____

Other (specify): _____

What suggestions would you make for improving Operation Identification (RI.16)?

How many times has your residence been burglarized during the last two years (RI.10)?

First burglary -

Date of occurrence (RI.11): _____

Estimated value of property stolen (RI.12): _____

Has any of the property stolen in this burglary been recovered by the police (RI.13): _____

How long after the burglary occurred were you first notified that some of your stolen property had been recovered (RI.14): _____

Second burglary -

Date of occurrence (RI.11): _____

Estimated value of property stolen (RI.12): _____

Has any of the property stolen in this burglary been recovered by the police (RI.13): _____

How long after the burglary occurred were you first notified that some of your stolen property had been recovered (RI.14): _____

Third burglary -

Date of occurrence (RI.11): _____

Estimated value of property stolen (RI.12): _____

Has any of the property stolen in this burglary been recovered by the police (RI.13): _____

How long after the burglary occurred were you first notified that some of your stolen property had been recovered (RI.14): _____

APPENDIX C

SAMPLE PARTICIPANT POST-SURVEY QUESTIONNAIRE

OPERATION IDENTIFICATION

PARTICIPANT POST-SURVEY QUESTIONNAIRE

Did you engrave your property with the identifying number recommended by the project (PS.2)?

Yes: _____

No: _____

If not, what number did you use?

How many O-I warning decals have you displayed on your residence (PS.3)? _____

How many personal property items have you listed on the inventory forms you received when you enrolled in Operation Identification (PS.4)? _____

Which of the following crime prevention measures have you implemented since joining Operation Identification (PS.5)?

Installation of improved or additional locks: _____

Installation of an alarm system: _____

Installation of exterior lighting: _____

Participation in a block watch program: _____

Watch dog: _____

Other: _____

Which of the following problems did you experience with the enrollment procedures, or with the instructions, forms, or materials you were given (PS.1)?

Delays in obtaining engraving tools: _____

Instructions were unclear: _____

Engraving tool did not operate properly: _____

Engraving tool was difficult to use: _____

Engraving damaged or detracted from the appearance of property? _____

Some property items could not be engraved: _____

Engraved items were difficult to resell: _____

Deterioration of decals due to weather: _____

Other (specify): _____

How has your opinion about the quality of police services changed since you joined Operation Identification (PS.6)? (check one)

Much better than before: _____

Somewhat better than before: _____

No change: _____

Somewhat worse than before: _____

Much worse than before: _____

How many times has your residence been burglarized since you joined Operation Identification (PS.7)? _____

(Note: The post-survey questionnaire for burglarized O-I participants, Appendix D, can be administered to those persons indicating one or more burglaries since joining Operation Identification.)

APPENDIX D

SAMPLE POST-SURVEY QUESTIONNAIRE FOR BURGLARIZED O-I PARTICIPANTS

OPERATION IDENTIFICATION

BURGLARIZED PARTICIPANT POST-SURVEY QUESTIONNAIRE

How many times has your residence been burglarized since you joined Operation Identification (PS.7)?

First burglary -

Date of occurrence (PS.8): _____

Estimated value of property stolen (PS.9): _____

Were any of the property items stolen engraved with an identifying number (PS.10)?

Yes: _____

No: _____

Were any of these marked property items recovered by the police (PS.11)?

Yes: _____

No: _____

Second burglary -

Date of occurrence (PS.8): _____

Estimated value of property stolen (PS.9): _____

Were any of the property items stolen engraved with an identifying number (PS.10)?

Yes: _____

No: _____

Were any of these marked property items recovered by the police (PS.11)?

Yes: _____

No: _____

Third burglary -

Date of occurrence (PS.8): _____

Estimated value of property stolen (PS.9): _____

Were any of the property items stolen engraved with an identifying number (PS.10):

Yes: _____

No: _____

Were any of these marked property items recovered by the police (PS.11):

Yes: _____

No: _____

APPENDIX E

SAMPLE NON-PARTICIPANT POST-SURVEY QUESTIONNAIRE

OPERATION IDENTIFICATION

NON-PARTICIPANT POST-SURVEY QUESTIONNAIRE

The following information should be collected from a random sample of citizens not participating in Operation Identification, one year after project implementation.

Which of the following crime prevention measures have you implemented during the past year (PS.17)?

Operation Identification[a]: _____

Installation of improved or additional locks: _____

Installation of an alarm system: _____

Installation of exterior lighting: _____

Participation in a block watch program: _____

Watch dog: _____

Other: _____

Have you heard of the Operation Identification program (PS.12)?

Yes: _____

No: _____

How did you first hear about Operation Identification (PS.13)?

Newspaper: _____

Radio: _____

Television: _____

Billboard: _____

Mail: _____

Relative/Friend/Neighbor: _____

Meeting of community or civic group: _____

Display in library, police station, business, etc.: _____

Other: _____

a. Terminate the Non-Participant Questionnaire if participation in Operation Identification is indicated.

What source provided you with the most useful information about Operation Identification -- for example, how to join (PS.14)?

Newspaper: _____

Radio: _____

Television: _____

Billboard: _____

Mail: _____

Relative/Friend/Neighbor: _____

Meeting of community or civic group _____

Display in library, police station, business, etc.: _____

Other: _____

Are you interested in joining Operation Identification (PS.15)?

Yes: _____

No: _____

If no, why not (PS.16)? (check as many as apply)

Takes too much time: _____

Not an effective burglary deterrent: _____

Other crime prevention programs are better: _____

Unncessary: _____

Inconvenient: _____

Other: _____

How many times has your residence been burglarized during the last year (PS.19)?

First burglary -

Date of occurrence (PS.20):

Was any property stolen in this burglary (PS.21)? _____

Has any of the property stolen in this burglary been recovered by the police (PS.22)? _____

Second burglary -

Date of occurrence (PS.20):

Was any property stolen in this burglary (PS.21)? _____

Has any of the property stolen in this burglary been recovered by the police (PS.22)? _____

Third burglary -

Date of occurrence (PS.20):

Was any property stolen in this burglary (PS.21)? _____

Has any of the property stolen in this burglary been recovered by the police (PS.22)? _____

How has your opinion about the quality of police services changed during the past year (PS.18)? (check one)

Much better than before _____

Somewhat better than before _____

No change _____

Somewhat worse than before _____

Much worse than before _____

APPENDIX F

NUMERICAL EXAMPLES UTILIZING THE EVALUATION MEASURES DISCUSSED IN CHAPTERS III THROUGH VI

This appendix contains several numerical examples demonstrating the application of the evaluative measures and statistical tests discussed in chapters III through VI. Neither the limitations of the individual measures nor the relative merits of alternative measures for assessing the same evaluation question are discussed in this appendix. It is assumed that the reader is familiar with chapters III through VI.

A. Numerical Measures of O-I's Effectiveness in Recruiting and Enrolling Project Participants

Many of the measures proposed in Chapter III for assessing the recruitment and enrollment activities of an O-I project require only simple tabulations or the calculation of percentages; no complicated analytic techniques are involved and examples of these calculations are omitted in this appendix. The computation of the maximum participation level, the estimated cost to achieve the maximum level and the recruitment and awareness efficiencies are illustrated below. The sample data used for these computations are summarized in Table F-1. The numerical values for these measures are:

(1) The percent of the target area population who are aware of the O-I project (equation 3.1):

$$A(\%) = \frac{(H-N_p)P_a + N_p}{H}(100) = \frac{(N_{np})P_a + N_p}{N_p + N_{np}}(100) = 73.63 \text{ percent}$$

where

$$P_a = \frac{N_{npa}}{N_{npi}} = 0.710;$$

Table F-1

SAMPLE DATA RELATED TO O-I RECRUITMENT AND ENROLLMENT

Data Item	Participants	Non-Participants
Total number[a]	1388 (N_p)	13,932 (N_{np})
Number interviewed[b]	200 (N_{pi})	200 (N_{npi})
Number of those interviewed aware of O-I	-	142 (N_{npa})
Number of those aware of O-I who want to join	-	58 (N_{npj})
Number of those interviewed who first heard about O-I through method j	46 (N_{ipj})	35 (N_{anj})
Number of those interviewed who indicate that method j is most informative	24 (N_{ipji})	-

a. Data item 1 is obtained from participant registration information.

b. Data items 2 through 6 obtained from post-survey interviews of O-I participants and non-participants.

c. Data items 5 and 6 are collected for each recruitment method used. Data are shown for method j only.

(2) The percent of those aware of O-I who have joined the project (equation 3.2):

$$J(\%) = \frac{N_p}{(H-N_p)P_a + N_p}(100) = \frac{N_p}{(N_{np})P_a + N_p}(100) = 12.31 \text{ percent;}$$

(3) An estimate of the maximum participation level that can be achieved (equation 3.5):

$$P_{tmax} = P_t + P_j(1 - P_t) = 0.462(46.2 \text{ percent})$$

where

$$P_t = \frac{N_p}{N_p + N_{np}} = 0.091,$$

$$P_j = \frac{N_{npj}}{N_{npa}} = 0.408;$$

(4) The total expected cost of achieving the maximum participation level (equation 3.6):

$$C = (C_p)(P_{tmax})(H) = (C_p)(P_{tmax})(N_p + N_{np}) = \$21,658.19$$

where

$C_p = \frac{E}{N_p}$ = \$3.06 per participant,

E = \$4,250 (total dollars expended to date on the project);

(5) The awareness efficiency of recruitment method j (equation 3.7):

$$A_j = \frac{N_{apj} + (H-N_p)P_aP_{anj}}{C_j} = \frac{N_{apj} + (N_{np})P_aP_{anj}}{C_j}$$

= 7.68 households aware of O-I per dollar spent on method j

where

$$N_{apj} = \frac{N_{ipj}}{N_{pi}}(N_p) = 319.24,$$

$$P_a = \frac{N_{npa}}{N_{npi}} = 0.710,$$

$$P_{anj} = \frac{N_{anj}}{N_{npa}} = 0.246,$$

C_j = \$400 (total dollars expended to date on method j);

(6) The recruitment efficiency of method j (equation 3.8):

$$R_j = \frac{N_{pj}}{C_j} = 0.42 \text{ participants recruited per dollar spent on method j}$$

where

$$N_{pj} = \frac{N_{ipji}}{N_{pi}}(N_p) = 166.56.$$

B. Sample Evaluation of O-I's Burglary Deterrence

This section describes a sample assessment of the bur-

glary deterrence effects of an O-I project using the evaluation equations discussed in Chapter IV. The O-I project and the community in which it is implemented are assumed to have the following characteristics:

(1) the O-I project was implemented on January 1, 1974, and the evaluation was based on the period from that date through December 31, 1974;

(2) the project's target area contains an estimated 15,320 households;

(3) monthly enrollments in the project for the first year of operation are shown in Table F-2; and,

(4) the number of residential burglaries reported in the target area each month during 1972, 1973, and 1974 are shown in Table F-3.

In addition, registration and post-survey information obtained from project participants reveal the following:

(1) of the participants interviewed in the post-survey, 86.6 percent indicated that they had displayed at least one of the warning decals on their residence (i.e., $P_d = 0.866$); and,

(2) the participant group indicated before and after histories as shown in Table F-4.

An evaluation of the O-I project which seeks to assess each of the questions identified in Chapter IV concerning project effectiveness as a burglary deterrent would proceed as follows:

Question 5: Do O-I participants experience an absolute decline in burglary rates?

The burglary data for the two-year period prior to enrollment was collected from each of the 1388 participants. Using equation 4.1 the residential burglary rate for participants

Table F-2
SAMPLE MONTHLY O-I PARTICIPATION DATA

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Number of new O-I Enrollees	111 (N_{p1})	116 (N_{p2})	139 (N_{p3})	106 (N_{p4})	95 (N_{p5})	109 (N_{p6})	147 (N_{p7})	145 (N_{p8})	122 (N_{p9})	110 (N_{p10})	102 (N_{p11})	86 (N_{p12})	1388 (N_p)

Table F-3
SAMPLE MONTHLY RESIDENTIAL BURGLARY TOTALS[3]

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1972	86 (B_{-11})	83 (B_{-10})	87 (B_{-9})	90 (B_{-8})	95 (B_{-7})	89 (B_{-6})	99 (B_{-5})	101 (B_{-4})	101 (B_{-3})	108 (B_{-2})	100 (B_{-1})	90 (B_0)	1129 (TAB_b^{-2})
1973	109 (B_1)	89 (B_2)	99 (B_3)	92 (B_4)	95 (B_5)	92 (B_6)	106 (B_7)	104 (B_8)	110 (B_9)	110 (B_{10})	98 (B_{11})	108 (B_{12})	1212 (TAB_b^{-1})
1974	97 (B_{13})	92 (B_{14})	103 (B_{15})	102 (B_{16})	100 (B_{17})	96 (B_{18})	109 (B_{19})	107 (B_{20})	110 (B_{21})	109 (B_{22})	106 (B_{23})	92 (B_{24})	1223 (TAB_a)

Table F-4

SAMPLE O-I PARTICIPANT BURGLARY DATA

	During Year Preceding O-I Enrollment[a]	During Second Year Prior to O-I Enrollment	During Two Years Prior to O-I Enrollment	Subsequent to O-I Enrollment
Total number of burglaries	118 (PB_b^{-1})	93 (PB_b^{-2})	211 (PB_b)	44 (PB_a)
Total number of burglaries involving theft of less than $50	-	-	36 (PBL_b)	10 (PBL_a)
Total number of burglaries reported to the police	-	-	164 (RPB_b)	38 (RPB_a)

a. Based on information obtained from all registered O-I participants during the enrollment process.

b. Estimated, using post-survey results, for participants displaying decals only.

before joining O-I is

$$BBR = \frac{500\ PB_b}{N_p}$$

= 76.01 burglaries per 1,000 participant-years.

To compute the participant burglary rate after joining Operation Identification, the number of participant-years (from enrollment to post-survey) represented by participants displaying decals must be estimated. Combining equations 4.3 and 4.4, one estimate of this number is

$$PY_d = (PY_p)(P_d) = \frac{(N_p)(P_d)}{2}$$

= 601 participant-years

Since monthly enrollment data is available, however, a more accurate estimate can be obtained using equation 4.5:

$$PY_p = \frac{1}{12}(11.5\ N_{p1} + 10.5\ N_{p2} + \ldots + 1.5\ N_{p11} + 0.5\ N_{p12})$$

= 708 participant-years;

and equation 4.3 can be used to estimate the number of participant-years for participants displaying project decals:

$$PY_d = (PY_p)(P_d) = 613.13 \text{ participant-years.}$$

Using PY_d, the burglary rate for participants after joining O-I is computed with equation 4.2:

$$ABR = \frac{1000\ PB_a}{PY_d}$$

= 71.76 burglaries per 1,000 participant-years.

A comparison of BBR and ABR shows that O-I participants have

experienced an absolute decline in their burglary rate (i.e., 76.01 burglaries per 1000 participants per year before joining the project, to 71.76 after enrollment -- a 5.59 percent decrease).

Question 6: Do O-I participants experience a decline in burglary rates relative to non-participants?

As discussed in Chapter IV, to assess this question, the absolute change in burglary rate found in assessing Question 5 is adjusted to account for the existing burglary trend in the entire target area. Since registered participants in Operation Identification represent only 9.1 percent of the 15,320 households in the target area, residential burglary rates for the entire area are used to approximate those of non-participants.

Using 1972 and 1973 burglary totals (see Table F-3), the target area burglary rate during the two-year period prior to O-I implementation can be computed using equation 4.7:

$$TABR_b = \frac{1000\ TAB_b}{2H}$$

= 76.40 burglaries per 1,000 households per year.

where TAB_b = 2,341 (the total number of burglaries reported in 1972 and 1973). Similarly, the target area burglary rate during the project's first year of operation (i.e., 1974) is computed using equation 4.8:

$$TABR_a = \frac{1000\ TAB_a}{H}$$

= 79.83 burglaries per 1,000 households per year.

The adjusted burglary rates during the periods before and after O-I enrollment, computed using equations 4.9 and 4.10, are:

$$ABBR = \frac{BBR}{TABR_b}$$

= 0.995 before participant burglaries per target area burglary; and

$$AABR = \frac{ABR}{TABR_a}$$

= 0.899 after participant burglaries per target area burglary.

With these adjusted figures, the burglary rate reduction for O-I participants becomes 9.65 percent relative to the burglary trend in the target area.

Question 7: Do O-I participants report a greater proportion of the property crimes committed against them to the police?

As discussed in Chapter IV, an assessment of this question can be made either by comparing the fractions of burglaries among O-I participants which were reported to police before and after O-I enrollment; or by comparing the fractions of reported burglaries among O-I participants before and after O-I enrollment which involved the theft of less than $50.00.

Table F-4 indicates that, at registration, O-I enrollees claimed 211 burglaries during the previous two years. A search of police burglary reports reveals that 164 of these were reported to police, and that 38 of the 44 burglaries claimed by victims in the post-survey were reported (see Table F-4).

The fractions reported before and after project enrollment are calculated using equations 4.13 and 4.14:

$$FR_b = \frac{RPB_b}{PB_b} = 0.777; \text{ and}$$

$$FR_a = \frac{RPB_a}{PB_a} = 0.864.$$

To determine whether the difference between these fractions is significant, a statistical test to examine the difference between two proportions can be used. (See pages 8-12 and 8-13 in Experimental Statistics.)

When PB_b and PB_a are large (i.e., both greater than 20), the fractions are still calculated with equations 4.13 and 4.14, but a simpler statistical test can be used. This test requires the calculation of the quantity

(F.1) $$\chi^2 = \frac{[(PB)|FR_b - FR_a| - 0.5]^2}{(PB)(F)(Q)}$$

(F.2) $$PB = \frac{(PB_a)(PB_b)}{PB_a + PB_b},$$

(F.3) $$F = PB\left(\frac{FR_a}{PB_b} + \frac{FR_b}{PB_a}\right), \text{ and}$$

(F.4) $$Q = 1-F$$

In this example,

$$PB = 36.41;$$

$$F = 0.791;$$

$$Q = 0.209; \text{ and}$$

$$\chi^2 = 1.18$$

The computed χ^2 value must be compared to the critical value, χ_c^2, at the chosen level of significance. Table F-5 gives the χ_c^2 values to be used when the hypothesis being tested is that two proportions do not differ. At the .05 level of significance, for example, the hypothesis that the proportions of burglaries reported by O-I participants before and after enrollment do not differ would be accepted since the computed χ^2 value, 1.18, does not exceed the critical value, $\chi_c^2 = 3.84$; i.e., the conclusion drawn would be that the reporting among O-I participants has not changed.

A similar analysis can be used to compare the fraction of reported burglaries among O-I participants which involved the theft of less than $50. Suppose, for example, that the participants registering in the project indicate that during the previous two years, 36 burglaries involved the theft of less than $50; and suppose that in the post-survey, they report that in 10 burglaries that occured since they joined O-I, less than

Table F-5

CRITICAL χ^2 VALUES

Significance level (α)	Critical value (χ_c^2)
.100	2.71
.050	3.84
.025	5.02

$50 was stolen. Using equations 4.15 and 4.16, the fractions of interest are:

$$FBL_b = \frac{PBL_b}{PB_b} = 0.171; \text{ and}$$

$$FBL_a = \frac{PBL_a}{PB_a} = 0.227.$$

The chi-square test discussed above can be applied again:

$$PB = \frac{PB_b\ PB_a}{PB_b + PB_a} = 36.41;$$

$$F = PB\left(\frac{FBL_a}{PB_b} + \frac{FBL_b}{PB_a}\right) = 0.181;$$

$$Q = 1-F = 0.819; \text{ and}$$

$$\chi^2 = \frac{[(PB)\,|FBL_b - FBL_a| - 0.5]^2}{(PB)\,(F)\,(Q)} = 0.439.$$

The hypothesis that the fraction of burglaries reported which involved the theft of less than $50 did not change after enrollment in O-I, would be accepted at the 5 percent level of significance since the computed χ^2 value is less than $\chi^2_c = 3.84$.

Using either of these methods to assess Question 7, the conclusion suggested by the results is that participation in Operation Identification did not affect the participant's burglary reporting rate.

Question 8: Do O-I participants experience "false" burglary rate reductions because projects enroll a disproportinate number of recently burglarized citizens?

By comparing each participant's enrollment date with the dates of the before burglaries indicated at the time of

registration, the 211 burglaries occurring among participants during the two years prior to O-I enrollment can be classified according to whether they occurred within the first or second year prior to enrollment. If 118 of the 211 burglaries occurred during the first year preceding the participants' enrollment, then the remaining 93 must have occurred during the second year prior to O-I enrollment (see Table F-4). With this data, participant burglary rates can be computed for each of the periods using equations 4.17 and 4.18:

$$BBR^{-1} = \frac{1000\ PB_b^{-1}}{N_p}$$

= 85.01 burglaries per 1,000 participants during the first year prior to enrollment; and

$$BBR^{-2} = \frac{1000\ PB_b^{-2}}{N_p}$$

= 67.00 burglaries per 1,000 participants during the second year before enrollment.

Target area burglary rates during the first and second years (1973 and 1972 respectively in this example) prior to O-I's introduction can also be computed from available crime statistics (Table F-3):

$$TABR_b^{-1} = \frac{1000\ TAB^{-1}}{H}$$

= 79.11 burglaries per 1,000 house-

introduction of the O-I project, the increase in the residential burglary rate for the target area was less than the increase observed during the previous year. The question remaining, however, is whether this change occurred because of the O-I project.

To explore this question, a 12-month moving average based on the monthly number of burglaries in the target area is computed (see Chapter IV). The moving average for January 1973 (designated month 1 in Table F-3) is computed using equation 4.24:

$$A_1 = \frac{1}{12}(B_1 + B_0 + B_{-1} + \ldots + B_{-10})$$
$$= 96.0 \text{ burglaries.}$$

To calculate the average for succeeding months, equation 4.25 is used. For example, the moving average for month 2 (February 1973) is

$$A_2 = A_1 + \frac{1}{12}(B_2 - B_{-10}) = 96.5 \text{ burglaries;}$$

and for month 3 is

$$A_3 = A_2 + \frac{1}{12}(B_3 - B_{-9}) = 97.5 \text{ burglaries.}$$

Monthly moving averages through December 1974, are shown in Table F-6, and plotted by month in Figure F-1. Note that monthly residential burglary totals have been superimposed on Figure F-1 to demonstrate the smoothing effect of the moving average. The burglary trend, graphically estimated by the moving average in Figure F-1, shows a temporary decline in January 1974, the first month of project operation, which

holds per year.

$$TABR_b^{-2} = \frac{1000\ TAB^{-2}}{H}$$
$$= 73.69 \text{ burglaries per 1,000 households per year.}$$

Adjusted burglary rates can be computed using equations 4.20 and 4.21:

$$ABBR^{-1} = \frac{BBR^{-1}}{TABR_b^{-1}}$$
$$= 1.075 \text{ before participant burglaries per target area burglary; and}$$

$$ABBR^{-2} = \frac{BBR^{-2}}{TABR_b^{-2}}$$
$$= 0.909 \text{ before participant burglaries per target area burglary.}$$

The adjusted burglary rate for participants during the first year of project operation, AABR, was computed above in assessing Question 6 (0.899 after participant burglaries per target area burglary).

Comparison of $ABBR^{-2}$ (0.909), $ABBR^{-1}$ (1.075), and AABR (0.899) indicates the possible existence of a small "regression artifact;" i.e., the differences between $ABBR^{-1}$ and both $ABBR^{-2}$ and AABR and the similarity of $ABBR^{-2}$ and AABR suggest that the before burglary rate for participants may be artificially high because of a self-selection bias introduced by the enrollment of a disproportionate number of citizens who were burglarized during the first year prior to enrollment. And, as a result,

the subsequent "reduction" in the burglary rate during the first year of participation may, in fact, merely be a return to the normal rate of participants and completely independent of O-I participation.

Question 9: Do households in the target area collectively experience a decline in reported burglaries because of Operation Identification?

The target area burglary rate for the O-I project's first year of operation was computed above for the assessment of Question 6 (79.83 burglaries per 1,000 households per year). Burglary rates were also computed for the first and second years prior to O-I implementation (i.e., for 1973 and 1972 respectively) in the assessment of Question 8. The burglary rate for the year prior to enrollment, $TABR^{-1}$, was 79.11 burglaries per 1,000 households per year; and the rate for the second year prior to enrollment, $TABR_b^{-2}$ was 73.69 burglaries per 1,000 households per year. With these rates, the change in burglary rate for the target area the project's first year of operation can be computed using equation 4.22:

$$\Delta TABR^{1} = TABR_a - TABR_b^{-1}$$

$$= 0.72 \text{ burglaries per 1,000 households per year;}$$

and the corresponding change for the previous year can be computed using equation 4.23:

$$\Delta TABR^{-1} = TABR_b^{-1} - TABR_b^{-2}$$

$$= 5.42 \text{ burglaries per 1,000 households per year;}$$

A comparison of $\Delta TABR^{1}$ and $\Delta TABR^{-1}$ indicates that following the

Table F-6

TWELVE - MONTH MOVING AVERAGES COMPUTED FOR SAMPLE RESIDENTIAL BURGLARY DATA

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1973	96.0 (A_1)	96.5 (A_2)	97.5 (A_3)	97.7 (A_4)	97.7 (A_5)	97.9 (A_6)	98.5 (A_7)	98.8 (A_8)	99.5 (A_9)	99.7 (A_{10})	99.5 (A_{11})	101.0 (A_{12})
1974	100.0 (A_{13})	100.3 (A_{14})	100.6 (A_{15})	101.4 (A_{16})	101.8 (A_{17})	102.2 (A_{18})	102.4 (A_{19})	102.7 (A_{20})	102.7 (A_{21})	102.6 (A_{22})	103.3 (A_{23})	101.9 (A_{24})

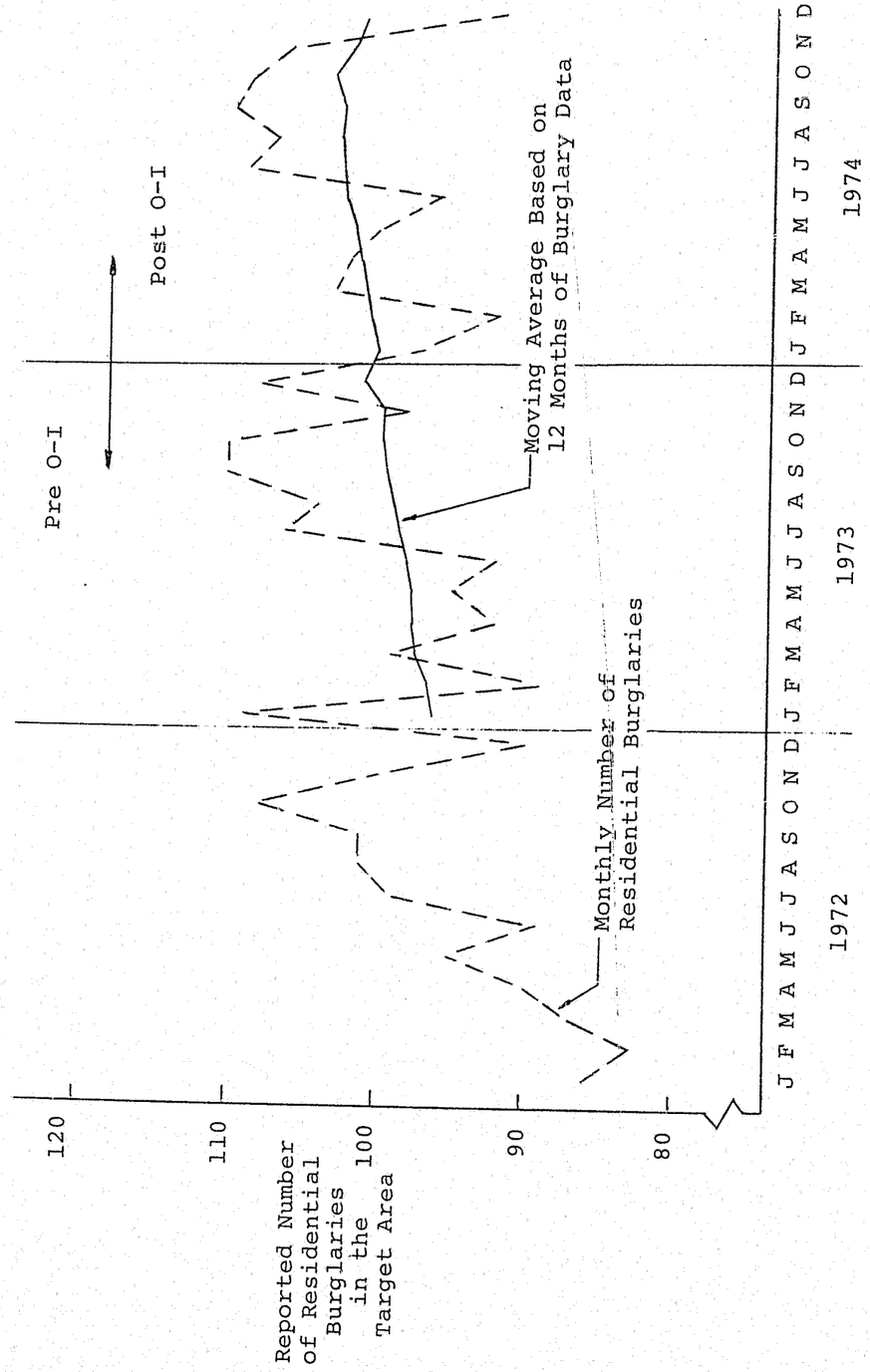

Figure F-1

SAMPLE BURGLARY TOTALS AND
MOVING AVERAGES BY MONTH

obviously cannot be attributed to O-I since only 111 households joined the project during month 1 (only 0.7 percent of all households in the target area). A decline in December 1974, however, is far more likely to have been the result of the O-I project, although other explanations must still be considered (e.g., other crime prevention programs or an abnormally high burglary total in December 1973, due to economic conditions). Data for succeeding months in 1975 will have to be analyzed to determine if the decline is temporary, or not.

C. Sample Evaluation of O-I's Effectiveness in Improving Property Recovery and Return

The sample evaluation discussed in this section makes the following assumptions:

(1) At the time the O-I project was implemented, burglary offense reporting forms were modified to provide the following information:

- o an indication of victim participation in Operation Identification; and
- o a description of each item stolen, including an indication of whether it was O-I marked.

(2) All property items recovered by the police are processed through the property room; each item is described on a property recovery form; its description includes an indication of whether its owner had been traced either locally or to another jurisdiction.

(3) Items most frequently stolen in residential burglaries in the target community include televisions, citizen band radios, guns, jewelry, and pocket-size electronic calculators. Of these, televisions, radios, and electronic calculators are chosen as the Selected Property Items.

After the first year of project operation, the data collected from burglary and property recovery records, participant registration information, and post-surveys were used to perform the following evaluation.

Question 10: Is stolen O-I marked property more likely to be returned to its owner than unmarked property?

Table F-7 summarizes the data obtained from burglary reports and property recovery records during the project's first year of operation. The probability of return for marked and unmarked SPIs can be computed using equations 5.1 and 5.2:

$$P_{re} = \frac{N_{re}}{N_{se}} = 0.143; \text{ and}$$

$$P_{rne} = \frac{N_{rne}}{N_{sne}} = 0.056.$$

Since N_{se} and N_{sne} are both greater than 20, a χ^2 test can be used to test the hypothesis that the probability of return for marked SPIs is greater than the probability of return for unmarked SPIs. (This test was introduced in Section B of this appendix.) In this case, the necessary equations and corresponding sample values are:

$$N = \frac{(N_{se})(N_{sne})}{N_{se} + N_{sne}} = 35.16;$$

$$P = N\left(\frac{P_{rne}}{N_{se}} + \frac{P_{re}}{N_{sne}}\right) = 0.070; \text{ and}$$

Table F-7

PROPERTY THEFT, RECOVERY, AND RETURN STATISTICS OBTAINED FROM PROPERTY ROOM AND BURGLARY RECORDS

Data Items	O-I Marked	Unmarked
Number of SPIs stolen	42 (N_{se})	216 (N_{sne})
Number of SPIs recovered	8 (N_{ce})	20 (N_{cne})
Number of SPIs traced to owners	7 (N_{te})	12 (N_{tne})
Number of SPIs traced to owners within the target jurisdiction	6 (N_{re})	12 (N_{rne})
Number of SPIs traced to owners outside the target jurisdiction	1	0

$$Q = 1 - P = 0.930$$

which yield

$$\chi^2 = \frac{(N|P_{re} - P_{rne}| - 0.5)^2}{NPQ} = 2.86.$$

This χ^2 value must be compared to the critical value, χ^2_c at the chosen level of significance. (Table F-8 shows the χ^2_c values for various levels of significance α) At the .05 level of significance, for example, the hypothesis that the return probability for marked SPIs is greater than that for unmarked SPIs would be accepted, since the computed χ^2 value, 2.86, exceeds the critical value $\chi^2_c = 2.71$.

As part of the registration process, each participant is asked for the number of times he has been burglarized in the previous two years, and for each burglary: the date, value of property stolen, whether any property was returned, and the length of time between the burglary and the date the first property item returned.

Table F-8

CRITICAL χ^2 VALUES FOR A ONE-SIDED TEST

Level of Significance (α)	Critical Values (χ^2_c)
.100	1.64
.050	2.71
.025	3.84

Suppose participants report 211 before burglaries -- 170 of which involve the theft of at least one property item -- and the return of some property in 45 instances. Using the time interval between the burglary and return of the first property item for these cases, an empirical distribution of the first return times can be constructed (see Table F-9). With this distribution, T_{90r}, a time from burglary to return of the first property item which is greater than 90 percent of all burglaries in which at least one property item is returned, is found to be between four and five weeks (i.e., approximately one month). Consequently, the calculation of the RPB (return probability per burglary) values will be based only on burglaries that are at least one month old at the time the information about each is collected. Adjusted data based exclusively on these "old" burglaries are shown in Table F-10. Using this data, the return probabilities for participants, before and after joining O-I, and for non-participants during the project's first year of operation can be computed using equations 5.3 through 5.5:

$$P_{rbpb} = \frac{N'_{rbpb}}{N_{bpb}} = 0.253;$$

$$P_{rppb} = \frac{N'_{rppb}}{N_{ppb}} = 0.211; \text{ and}$$

$$P_{rpnb} = \frac{N'_{rpnb}}{N_{pnb}} = 0.176.$$

Table F-9

SAMPLE DISTRIBUTION OF TIME TO FIRST RETURN OF STOLEN PROPERTY

	Time to Return of First Property Item							
	0-1 week	1-2 weeks	2-3 weeks	3-4 weeks	4-5 weeks	5-6 weeks	6-7 weeks	7 or more weeks
Number of burglaries with given time to first return	18	10	4	5	4	0	1	3
Cummulative number of burglaries	18	28	32	37	41	41	42	45
Cummulative percentage of all burglaries for which property was returned (45 burglaries)	.400	.622	.711	.822	.911	.911	.933	1.000

Table F-10

SAMPLE BURGLARY AND PROPERTY RECOVERY DATA OBTAINED FROM REGISTRATION INFORMATION AND POST-SURVEYS

	O-I Participants Before Enrollment	O-I Participants After Enrollment	Non-Participants
Number of burglaries for which at least one property item was stolen.	158 (N'_{bpb})	-	176 (N_{pnb})
Number of burglaries for which at least one property item was returned.	40 (N'_{rbpb})	-	31 (N'_{rpnb})
Number of burglaries for which at least one O-I marked item was stolen.	-	38 (N'_{ppb})	-
Number of burglaries for which at least one O-I marked item was returned.	-	8 (N'_{rppb})	-

A comparison of P_{rppb} and P_{rpnb} using the chi-square test described above yields a χ^2 value of 0.076; i.e., the return probability per burglary for O-I participants is not significantly greater than that for non-participants. Since P_{rbpb} is greater than P_{rppb}, however, the hypothesis that the return probability per burglary for O-I participants is greater after enrollment cannot be supported.

Question 11: Is stolen O-I marked property more likely to be recovered by the police than unmarked property?

Using the data contained in Table F-7, the recovery probabilities for marked and unmarked property can be calculated with equations 5.6 and 5.7:

$$P_{ce} = \frac{N_{ce}}{N_{se}} = 0.190; \text{ and}$$

$$P_{cne} = \frac{N_{cne}}{N_{sne}} = 0.093.$$

Applying the chi-square test again, a χ^2 value of 2.48 is calculated -- a result significant at the .10 level of significance (see Table F-8). Therefore, the hypothesis that the recovery probability for marked property is greater than that for unmarked property would be accepted if the evaluator is willing to accept a 10 percent chance of accepting a false hypothesis.

Question 12: Is recovered O-I marked property more likely to be traced to its owner than unmarked property?

The probabilities of tracing the owner of recovered SPIs, both marked and unmarked, can be calculated from the data in Table F-7 using equations 5.8 and 5.9:

$$P_{te} = \frac{N_{te}}{N_{ce}} = 0.875; \text{ and}$$

$$P_{tne} = \frac{N_{tne}}{N_{cne}} = 0.600.$$

In this case, both N_{ce} and N_{cne} are small (i.e., less than 20) and, the χ^2 test previously used does not apply. Instead, a test comparing two proportions based on small and unequal sample sizes must be used. Such a test can be found in any elementary statistics text (see Experimental Statistics). Using the procedure described (basically involving only reference to an appropriate table), the difference in the above probabilities would be judged not significant, and the hypothesis that the probability of tracing the owner is greater for recovered marked SPIs than for unmarked SPIs would be rejected at the .05 level of significance.

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