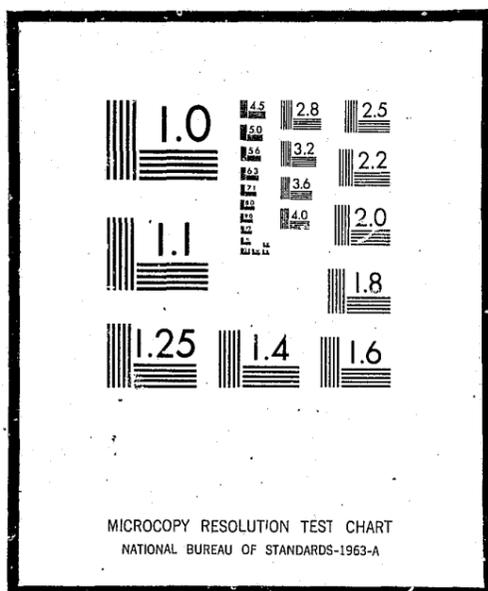


NCJRS

This microfiche was produced from documents received for inclusion in the NCJRS data base. Since NCJRS cannot exercise control over the physical condition of the documents submitted, the individual frame quality will vary. The resolution chart on this frame may be used to evaluate the document quality.



Microfilming procedures used to create this fiche comply with the standards set forth in 41CFR 101-11.504

Points of view or opinions stated in this document are those of the author(s) and do not represent the official position or policies of the U.S. Department of Justice.

U.S. DEPARTMENT OF JUSTICE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
NATIONAL CRIMINAL JUSTICE REFERENCE SERVICE
WASHINGTON, D.C. 20531

Date filmed 12/23/75

CRIME AND VICTIMIZATION IN PORTLAND:
ANALYSIS OF TRENDS, 1971-1974

by
Anne L. Schneider, Ph.D.
Oregon Research Institute

February 10, 1975

Funding for this Report and Research was provided by Grant No. 74-NI-99-0016-G from the Oregon Law Enforcement Council, and the National Institute of Law Enforcement in Criminal Justice, Law Enforcement Assistance Administration, Department of Justice, Washington, D.C. Points of view or opinions stated in this document are those of the author, and do not necessarily represent the official position or policies of the Department of Justice.

TABLE OF CONTENTS

List of Tables ii

List of Figures iii

Summary of Findings iv

Preface v

Victimization Surveys: A Supplement to Official
Police Statistics

 Introduction 1

 Need for the Survey. 2

Change in Victimization

 Introduction 6

Comparison of Victimization Rates: 1971-72, 1973-74 9

Change in Percent of Crimes Reported to the Police:
1971-72, 1973-74 12

Change in Crime Rates: Analysis of Official Statistics
and Reporting Trends Since 1972

 Introduction 16

 Change in Crime: Burglary 16

 Estimated Trend in Total Burglary. 17

Percent of Incidents Reported and Short-Term Trends
in Crime 21

Comparability of the Two Surveys: A Methodological
Report 27

Data Appendices: Raw Data. 47

LIST OF TABLES

1. Comparison of Victimization Rates: 1971-72, 1973-74 11

2. Change in Percentage of Incidents Reported to the
Police: 1971-72 to 1973-74. 13

3. Percentage of Incidents Reported to the Police:
By Area. 15

A.1 Frequency of Series. 29

A.2 Alternative Procedures for Calculating Victimization
Rates. 32

A.3 Frequency of Less Significant Burglary Incidents:
1971-72 and 1973-74 36

A.4 Frequency of Less Significant Larceny Incidents:
1973-74. 38

A.5 Frequency of Less Significant Assaults and Auto
Thefts: 1971-72, 1973-74. 40

A.6 Characteristics of Respondents: 1971-72, 1973-74. 42

A.7 Characteristics of Original Sample and Substitution. 45

LIST OF FIGURES

1. (a) Official Burglary Rate: 1971 to 1974 18
 (b) Percent of Burglaries Reported to Police. 18
 2. Estimated Trend in Total Burglaries: 1971 to 1974 19
 3. Burglary Rate and Percentage Reported: 1973-74. 22
 4. Personal Crimes and Percentage Reported: 1973-74. 24
 5. Total Crimes and Percentage Reported. 25

CHANGE IN VICTIMIZATION: 1971-72 TO 1973-74

SUMMARY OF FINDINGS

1. A comparison of the victimization rate for burglaries in 1973-74 with the burglary victimization rate in 1971-72 indicates that the rate has declined from approximately 151 per 1000 households to less than 130 per 1000 households.

2. The proportion of residential burglaries reported to the police by citizens of Portland during the latter time period had increased significantly over the 1971-72 period with 71% of the burglaries reported in 1973-74 compared to 50% in 1971-72.*

3. When changes in the proportion of total residential burglaries reported to the police are taken into account, the official Portland Police statistics indicate that the burglary rate has declined since 1971-72, rather than increased.

4. The incident rate for rapes, robberies, and assaults (combined) is not significantly lower in 1973-74 than it was in 1971-72, although the results of the analysis on these crimes is less conclusive than for burglaries. The data indicate a slight, but not statistically significant, decrease in these crimes. For robbery alone, the rate is significantly lower in 1973-74.

5. Short term fluctuations in the official crime rate show a remarkable correspondence to fluctuations in the proportion of all crimes which victims said they reported to the police. This suggests that analysis of short term trends (two months in length to approximately two years) without knowledge of the proportion of crimes reported will be misleading, distorted, and could result in quite erroneous conclusions.

6. Crime Prevention programs which are evaluated on the basis of short-term changes in crime known to the police may receive inadequate evaluations unless reporting habits of the citizens are taken into account. This is particularly true of any program which could result in an increase in citizen reporting of incidents to the police.

* This information is obtained from the victim himself, not from police records.

PREFACE

The research reported in this document is the first of several reports on Crime and Victimization in the Portland metropolitan area for the period of May 1973 through April 1974. The victimization information was collected from a randomly selected sample of 3950 households in the Portland Metropolitan area. The research was conducted by the Oregon Research Institute, Eugene, Oregon, under a contract from the Oregon Law Enforcement Council and the Law Enforcement Assistance Administration.

Full details about the sample design questionnaire construction, interviewing procedures, coding reliability, and other pertinent aspects of the survey research effort are contained in "The 1974 Portland Victimization Survey: A Report on Procedures."

Other reports scheduled for immediate release are:

"Methodological Approaches to Measuring Short-Term Victimization Trends."

"Description and Preliminary Analysis of Victimization Rates and Probabilities in the Portland Metropolitan Area."

Additional reports and documents are in preparation, and scheduled for publication by March or April, 1975.

VICTIMIZATION SURVEYS: A SUPPLEMENT TO OFFICIAL POLICE STATISTICS

Introduction

The need for accurate information concerning the amount and location of crime has long been recognized by federal, state, and local governments. Official police statistics and the Uniform Crime Reports published by the FBI provide valuable information to local, state, and national officials in their efforts to develop programs and allocate funds to areas with the greatest need for assistance in controlling the crime rates. These statistics, however, are based primarily on reports by victims of crimes. If a citizen does not report a crime to the authorities, then the incident will not be recorded as a part of the official crime rate unless a policeman happens to discover the crime while it is in progress. The underreporting of crime has serious implications for the accuracy of official information about crime rates and about the effectiveness of crime reduction programs.

Of particular concern is the possibility that changes in the official crime rate could be an artifact of changes in the willingness of citizens to report crimes to the police. Substantial evidence is contained in this report that increases in the official crime rates in Portland during 1973-74 correspond very closely to increases in the proportion of crimes which victims said they reported to the police.¹ Likewise, the evidence indicates that decreases in the official crime rates correspond to a decline in the proportion of victims who reported the incident to the police. Thus, official crime statistics may not be an adequate description of actual changes in crime rates. Reliance upon possibly inaccurate descriptions of change in total crime could have serious consequences for planning, resource allocation, and other efforts to reduce crimes.

Some types of crime prevention programs specifically include efforts to increase the willingness of victims to report crimes to the police. Programs which involve the community in the criminal justice system or in self-protection efforts may increase the reporting rate to such an extent that crime in the area will appear to have increased when it actually may have decreased. Such programs may be judged ineffective and

¹ This information is obtained from the survey, not from police records. The term "reported crime" will always refer to the incidents which respondents to the survey said were told to the police.

funding for them discontinued. Only if the total number of crimes and/or the proportion of crimes reported to the police is known will it be possible to provide accurate and reliable information about the effectiveness of such programs.

Other programs may inadvertently increase the reporting percentage. Halfway houses and other communit-based treatment centers may increase the reporting of real or imagined incidents to the police, because residents of the area believe that they "know" where the offender resides. The study of police patrolling patterns in Kansas City which produced the conclusion that additional patrolling did not reduce crime could have suffered from this type of program. If increased patrolling resulted in more incidents being uncovered in progress, or if the presence of additional patrols increased the incentive of citizens to report incidents, then the conclusion that extra patrols were ineffective could be erroneous.

Each police department has its own policies and procedures for processing reports of incidents as they are received, and for classifying and counting the incidents. Although the UCR rules are quite specific, there is little doubt that most police departments code incidents to be compatible with state definitions of crime. Thus, the official statistics may not be as comparable from one police jurisdiction to another as are victimization survey results.

Need for the Survey

Recognition of the potential problems involved in sole reliance upon official police statistics for measuring change in crime rates and for evaluating the Impact programs prompted the Oregon Law Enforcement Council to obtain funds to conduct a victimization survey in the Portland metropolitan area. Funding was obtained from the Federal Law Enforcement Assistance Administration, the city of Portland, and Multnomah County.

Interviews in approximately 4000 households were conducted during the spring and summer of 1974, throughout the Portland metropolitan area (excluding Vancouver, Washington). The major purposes of the research efforts are:

1. To measure the rate of criminal victimization in Portland city, outlying metropolitan areas, and selected areas within the city of Portland for the crimes of rape, assault, robbery, and burglary.
2. To update the 1970 census information for these same areas so that changes in the social and economic characteristics of 1974 can be taken into account when assessing the effectiveness of the Impact programs.

3. To provide follow-up data for the 1972 LEAA-sponsored victimization survey within the city and to permit a limited, short-term assessment of change in victimization since 1971-72.

4. To provide baseline data for future surveys, so that the extent of crime reduction and/or displacement for specified sections of the metropolitan area can be ascertained, and the effectiveness of Impact programs measured with more reliability.

The federal LEAA commissioned a victimization survey for Portland in 1971-72 and may conduct additional ones in the future. The excellent report on the 1972 survey, prepared by the Portland Impact Crime Reduction Program, provides considerable information on the characteristics of victims, the victimization rate for the city of Portland, and the proportion of crimes reported.

The LEAA surveys, however, are designed primarily to provide information to federal officials, and are not sufficient to meet the needs of local and state criminal justice officials. Some of the shortcomings of the surveys, for use by local and state agencies, are:

1. The location of the criminal incident was not coded, and (apparently) the location of the victim's residence within the city was not coded. Thus, the information about victimization is available only for the entire city, and cannot be used to describe victimization patterns or changes for smaller areas within the city. This is a particularly acute problem for Portland, since several area-based experimental programs have been, or will be, implemented. Their evaluation requires victimization and reporting information within specified areas of the city. In addition, it is not possible to use the information for studying whether crime is being displaced from some areas within the city to other areas. The latter problem has considerable significance for local planning efforts in that the areal coverage of a program should be large enough to include areas of probable crime displacement.

2. The LEAA survey was confined to residents of the city, and did not include households in the surrounding metropolitan area. Very little information is available to support or refute the contention that massive infusion of funds to reduce crime within the city will simply result in the offenders turning their attention to the suburban areas. If this is true, however, then crime rates within the city could be reduced at the expense of increased crime rates elsewhere in the metropolitan area.

3. Since the LEAA questionnaire was used in several other cities, no questions tailored specifically to the information needs of local or state administrators were included.

4. Change in crime rates within specified areas of the city could be produced by changes in the social and/or economic characteristics of persons living in the area. This information is important in developing models for small-area predictions of crime rates--a study currently under way at the Oregon Research Institute in conjunction with the analysis of the 1974 survey. The LEAA survey of 1971-72 does not provide this information.

These comments should not be interpreted as criticisms of the LEAA survey, per se, but simply as a recognition that the informational needs of federal officials are not necessarily the same as the needs of local and state officials.

The 1974 survey will be used to assist in the evaluation of all Impact programs by providing more accurate information on trends in the crime rate. Also, the 1974 survey included areas outside of the city of Portland in order to determine whether the infusion of federal funds into the city inadvertently displaced crime outward into the adjacent area around the city, resulting in increased crime rates for the areas not included in the special programs. The 1974 survey and analysis differs from most research in crime trends in that one of the major purposes is to analyze the crime rates in small areas within the city so that the effectiveness of certain Impact programs concentrated within small geographic sections can be determined. Two such programs are of special concern. One of these is a street lighting program in a high-crime section of northeast Portland. This program had not been fully implemented prior to the time covered by the survey, but about 30% of the proposed lights had been installed. The other program of particular interest is a Crime Prevention Bureau anti-burglary program, which attempts to involve the citizenry in self-protection measures and cooperative neighborhood efforts to reduce residential burglary. This effort is city-wide, but meetings within neighborhoods sponsored by the CPB had been concentrated mainly in two areas within the city (census tracts 36.02 and 19).

Although some preliminary evaluation of these two programs is underway and scheduled for publication by March 1975, the 1974 survey data will be used mainly as baseline data for analysis of victimization trends within small areas of the city. Comprehensive reports on the effectiveness of specific Impact programs cannot be conducted until followup data become available in 1975 and 1976.

The purpose of this report is to examine victimization trends since 1971-72 for the city of Portland, and to assess the degree of change in citizen reporting of crimes to the police since 1971-72. The LEAA sponsored victimization survey, conducted by the Census Bureau, covered the time period of July, 1971 through June, 1972. The ORI survey covered the one-year period of May, 1973 through April, 1974.

CHANGE IN VICTIMIZATION

INTRODUCTION

One of the major purposes of the 1974 Victimization survey was to examine whether the federally-funded Impact programs implemented in 1973 and 1974 resulted in fewer incidents of stranger to stranger street crime and burglaries than would have occurred without the Impact programs. In addition, since many of the new programs were not implemented until late 1974, the 1973-74 survey information is to serve as baseline data for future surveys to determine the effectiveness of the programs in reducing target offenses.

It is premature to determine at this time whether the Impact programs have been successful, since many of them have only recently been implemented and most have not been in operation long enough to fully assess the difference in victimizations which has resulted since the institution of the programs. Nevertheless, some preliminary analysis can be conducted by comparing the 1974 survey results with the results from a very similar victimization survey conducted by the Census Bureau under authorization from the Law Enforcement Assistance Administration in 1971-72. A comparison of the victimization rates in 1971-72 with those in 1973-73, along with the differences in reporting of crime to the police, can provide some tentative insight into the trend in victimization.

Scope of the Study in Victimization Trends

The Oregon Research Institute victimization survey was designed to permit small-area analysis within the City of Portland and within selected cities and unincorporated urban sections of the metropolitan area. The Census Bureau survey of 1972, which will be used as the comparison for examining change in victimization, was conducted only within the city, and the incidents of victimization were not coded either with the location of the victim or the location of the incident. Thus, there is no way to compare victimization in 1972 and 1974 within any specific areas of the city. The analysis of change in victimization rates has to be confined to the entire city of Portland.

Comparability of the 1972 and 1974 Surveys

Although comparisons of two surveys must always be done with caution, the Oregon Research Institute questionnaire and procedures were patterned

after the ones used by the Census Bureau in 1972 in order to achieve as much comparability as possible.

The Census Bureau survey included all incidents committed against residents of the city regardless of where the incident was committed. To increase comparability, this same procedure was used for "counting" incidents in this report, even though we believe another method of counting incidents--by location of the crime--provides a more accurate description of the victimization patterns. (The latter procedure is used in the final part of this report when changes in the official crime rate during 1973-74 are compared to changes in the proportion of crime reported to the police.)

Incidents of victimization in 1972 were classified by the Census Bureau into a modified Uniform Crime Report system. The incidents from 1972 were grouped into categories consistent with the categories developed for the 1974 data and consistent with the Uniform Crime Report categories.

The sample drawn by the Census Bureau was a scientifically selected random sample of households. For purposes of small area analysis, the sample design for the 1974 survey over-sampled in certain areas of the city by drawing more households from the area than a random draw would have produced. When the entire city is being analyzed, the interviews within each area are weighted (using ratio weights) so that the sample is representative of the city as a whole. In some areas, the oversampling factor was five to one, in that five times as many households were selected as would have been if a strictly random sample were drawn. To correct for this, a household from such an area would be weighted .20 and an interview from the area would count as one-fifth of a full interview whenever the analysis is conducted at the city-wide level.

Both the 1972 and 1974 sample were selected in accordance with proper scientific standards so that the sampling error can be measured and taken into account when comparing the two surveys. Questions asked of respondents in the Incident Report section of the questionnaire are virtually identical for the 1972 and 1974 surveys, with only a few differences in question wording--none of which exists on questions designed to determine the number or type of incident. (For full details on the comparability of the surveys, see the last section of this report).

Although the procedures used in the two surveys are not perfectly identical, the samples were drawn in the same manner, the relevant questions are

identical, and the classification and counting procedures used in 1972 were replicated as precisely as the available information about the first survey would permit. Thus, although the information on change in victimization must be interpreted with some caution because there is always some error in survey data, we believe that sufficient comparability has been achieved to conduct the comparison.

There were a few counting rules used in the earlier survey which cannot be replicated precisely. When such differences exist, the most cautious approach has been followed in that we have used a counting procedure in the 1973-74 data which will yield the highest possible number of crimes. The basic null hypothesis is that crime has not been reduced in Portland, and if any errors are made we prefer to err on the cautious side. The most important difference in the counting rules is that the earlier survey did not count any crimes which had been designated by the interviewer as a series of incidents. These were not counted as even one incident. In the 1973-74 study we have counted a series of incidents at its maximum level. Thus, if the detailed incident report indicated that the information within it pertained to a series of three burglaries, this was counted as three burglaries. In the 1972 study, none of these burglaries would have been included in the final tally. The reason for counting each incident in the series in the 1974 study is that the interviewers in 1974 probably were not employing quite the same rules as those in 1971-72 concerning what could be designated as a series of crimes. The difference in rules may have resulted in interviewers for the later study designating more crimes as series. The net effect of counting each event within the series as an incident is that the 1973-74 data will include some incidents which would have been excluded in the earlier study. This results in an over-counting within the 1973-74 study. For a detailed analysis of the comparability, see the last section of this report, "Comparability of the Surveys."

COMPARISON OF VICTIMIZATION RATES: 1971-72, 1973-74

The information in Table 1 reveals that the victimization rate for robberies probably declined between 1971-72 and 1973-74; the rate of assaults remained unchanged, and the rate of household burglaries decreased. Although the victimization rate for rape in the later time period is 1.58 and the rate in 1972 was about 3 per 1000, this decrease is probably a result of sampling error rather than a real change.

If robberies and assaults are combined, as in row 5 of Table 1, or if all three of the serious personal crimes (rape, robbery, and assault) are combined, the rate for 1974 is lower than the 1971-72 rate, but the difference is not statistically significant. That is, the difference could be the result of sampling error rather than a real change in the victimization rate.

The number of burglaries per 1000 households is lower in 1974 than in 1972, and the difference is statistically significant. In 1971-72, about 15% of the households were burglarized for an estimated total of 21,900 burglaries. In 1973-74, approximately 13% of the households were burglarized for an estimated total of 18,400 burglaries during the year--a reduction of more than 3000 residential burglaries.

An extensive Crime Prevention Bureau anti-burglary project was initiated in Portland in late 1973. Whether the reduction in burglaries is actually due to the efforts of the CPB, the Portland Police and other local agencies involved in burglary reduction efforts cannot be ascertained with finality, because many factors can result in fluctuations in the burglary rate. On the other hand, the information here is consistent with the possibility that CPB efforts, police efforts, or efforts by other agencies and groups, if any, reduced the number of residential burglaries between 1971-72 and 1973-74.

Discussion

The evidence from the 1972 and 1974 victimization surveys indicates that the rate of household burglaries has declined and that the rate of rape, robberies, and assaults is slightly lower in 1974, but the latter difference is not great enough to be beyond the limits of normal sampling error. The following points should be emphasized in relation to the interpretation of these findings and their significance for the Impact program:

1. Crime rates for all types of crimes in virtually all areas of the United States are increasing and have been increasing for many years. Unless the amount of increase in crime which would have occurred without the Impact program is known, there is no way to precisely determine the full effectiveness of any Impact program or other non-Impact crime prevention effort. Even if the rate for rapes, robberies, and assaults is the same in 1974 as it was in 1971-72, this would not necessarily mean that the programs designed to reduce these types of crime are ineffective, because the rate for 1974 might have been even greater without the programs.

2. Since the crime rates rarely decrease to any significant extent, a reduction, or the absence of increase, in crime is a major step forward.

3. Conclusions drawn from data produced by even the best designed samples and best designed questionnaires will always be suspected by some persons, and there is a .05 probability that even the statistically significant differences observed in Table 1 are due to sampling variation.

4. When attempting to answer complex and important questions, such as the effectiveness of crime prevention programs, more than one method and one approach should be used in the hope that consistent results will be found regardless of the approach. An alternative procedure for determining whether the victimization rates have changed since 1971-72 is presented in a later section of this report.

Table 1
Comparison of Victimization Rates, 1971-72, 1973-74¹

Crime Type	1972 Victimization rate per 1000	1974 Victimization rate per 1000	Z value ²	Associated Probability
Rape	3.00	1.58	.54	n.s.
Robbery	16.0	10	2.159	.05
Assaults	40	40.7	.294	n.s.
Burglary	151	127	2.69	.01
Robbery and Assaults	56	50.7	.91	n.s.
Rape, Robbery and Assault	59	52.3	1.17	n.s.

¹ The first survey includes information on victimization from July 1971 through June 1972. The second survey covered the period of May 1973 through April 1974. For ease of presentation, the earlier time period is referred to as 1972 and the later one as 1974.

² The difference in proportion test from Dixon and Massey, p. 249, was used to calculate the Z value and the significance level of the difference. The figures are converted to proportions to conduct the test. 1887 households is the weighted number used to calculate the burglary rate for the 239 burglaries with 1973-74 data. The respondent from each household, and children aged 12 through 15, are the base population used to calculate the victimization rates for the personal crimes (2176 persons). Figures from the census bureau survey are from "Crime in Eight American Cities," U.S. Department of Justice Law Enforcement Assistance Administration National Criminal Justice Information and Statistics Service, Washington, D.C., July 1974. The LEAA rounded the figures for personal crimes to the nearest whole number.

CHANGE IN PERCENT OF CRIMES REPORTED TO THE POLICE: 1971-72, 1973-74

The revelation by the National Crime surveys that a substantial amount of the crime in American cities is not reported to the police has generated concern about the non-reporting of incidents, and has resulted in efforts to increase the reporting rate.

The proportion of incidents for each crime type reported to the police in 1974 is compared with the reporting percentage in 1972 (see Table 2).

The most marked difference between 1972 and 1974 is in the proportion of burglaries reported to the police. Half of the burglary incidents in 1972 were reported, whereas 71% were reported in 1974. Both of the survey estimates are subject to sampling error and to respondent error. That is, some respondents may say that they reported the incident when in fact they did not. The latter problem, however, existed in both surveys, and should not have biased the results. The difference in reporting rates is statistically significant as is the difference in reporting for larcenies. The reporting rates for robberies and assaults are slightly higher in 1974 than in 1972, but the differences are not great enough to rule out sampling error as the source of the difference.

The reporting rate for crimes could change if any of the variables which encourage or discourage people from reporting crimes has changed. One of the possible explanations for the marked increase in burglary reporting is that law enforcement agencies and officials have increasingly involved the citizens in anti-crime programs. The neighborhood meetings and self-protection programs may have resulted in a greater willingness to report crimes to the authorities. Attitudes toward law enforcement officials may also be related to reporting, but since the 1972 survey did not include attitudinal questions, there is no way to know whether attitudes of the citizens have become more positive since 1972. Regardless of the explanation, a 21% increase in reporting for burglaries and the 13% increase in reporting for larcenies are indices of greater citizen willingness to report these crimes.

Implications of a Change in Reporting

The implications of an increase in reporting should not be overlooked or minimized. First, the potential burglar who believes that a victim definitely will report the incident to the police should perceive that there

Table 2
Change in Percentage of Incidents Reported
to the Police: 1971-72 to 1973-74

Crimes Against Residents of Portland City		
	1972 Percent Reported	1974 Percent Reported
Rape	42%	44%
Robbery	45	52
Assault	37	41
Burglary	50	71*
Larceny	30	43*

* Difference is statistically significant. For burglaries in 1972, the upper confidence interval is about 53%. The lower confidence interval for 1974 is 65%.

is a greater risk involved in a burglary. Higher rates of reporting could act as deterrents to potential offenders and thereby reduce the crime rate. If a burglar or other offender believes that the victim will not bother to report the incident, there is almost no possibility of being apprehended or punished for the crime. When victims do not report crimes to the police, the old adage "crime does not pay" is wrong in a literal sense, because some criminals profited from the crime, and is assured of not being apprehended for it.

A second important factor in the increased reporting is that official crime statistics reflect only reported crimes. If the reporting rate increases, it will appear as if the number of incidents has increased when in fact the number may not have increased. This point is dealt with in detail in a subsequent part of the report.

A third point is that differences across areas in the city in reporting rates could distort the accuracy of information about which areas have the higher and lower crime rates. Official police data on the crime rates for various areas would be incorrect if extensive differences in reporting exist within those areas.

Percent of Crimes Reported to the Police: by Area

The reporting rates for the city, the six suburban cities included in the 1974 survey, and the unincorporated portions of Multnomah, Clackamas, and Washington counties are shown in Table 3. The highest reporting rates for robbery and assault are in the six suburban cities (Gresham, Oregon City, Milwaukie, Lake Oswego, and Hillsboro). The lowest rates are in the county areas, although the percentage for robberies is not much less than Portland (52% vs. 50%). The percentage of assaults reported from the county areas is considerably below the suburban cities and Portland.

For burglaries, Portland has the highest percentage reported, although the six suburban cities also report about 70% of the burglaries, whereas in the county areas only 58% are reported. Larcenies have about the same reporting rate for all areas.

Table 3
Percentage of Incidents Reported to the Police: By Area¹

	Portland 1974	Suburban Counties	Six Suburban Cities	Total Suburban Area
	%	%	%	%
Rape	44	(95)	(33)	(90)
Robbery	52	50	64	54
Assault	41	26	68	34
Burglary	71	58	70	60
Larceny	43	42	43	42

¹Crimes placed in an area by location of incident, not by residence of victim.

CHANGE IN CRIME RATES: ANALYSIS OF OFFICIAL
STATISTICS AND REPORTING TRENDS SINCE 1972

INTRODUCTION

Much concern and some disbelief was expressed after the release of the FBI Uniform Crime Reports in late summer 1974, which showed an alarming increase in index offenses. The increases during the first six months of 1974 over the first six months of 1973 were:

Murder	+	81.8
Rape	+	57.9
Robbery	+	51.3
Aggravated Assault	+	59.4
Burglary	+	26.5

Information prepared by Jim Richardson of the Portland Police Department shows that the increase for at least some of the crimes is an artifact of the comparison period in 1973. That is, the crime rate in the first six months of 1973 was exceptionally low. Richardson describes the figures for this period as "abnormally, inexplicably, and illogically distorted in view of past and subsequent statistics." The rate of increase for the first six months of 1974 is not nearly as marked if a longer time period prior to 1974 is used for the comparison. Nevertheless, there has been a general increase in most of the target offenses in Portland since 1967.

Official crime statistics represent only the incidents reported to the police, and assessments of trends in the crime rate suffer from the fact that official data represents only a portion of all the crime which occurs. With the advent of victimization surveys comes the possibility of using the proportion of crimes reported as a method of supplementing official statistics to obtain a more accurate estimate of trends in the crime rate.

CHANGE IN CRIME: BURGLARY

One of the most intriguing findings from this preliminary analysis and comparison of the 1972 and 1974 survey data is that at least some of the apparent increase in crime is not due to an actual increase in the total number of incidents, but to an increased proportion of crimes being reported to the police.

The rate of burglaries, per 1000 households, in Portland since 1971 based on official police department data is shown in Figure 1a. In Figure 1b are the percentages of burglary incidents reported to the police during the time periods covered by the two surveys.

Since the 1972 survey data has been made available only for the entire year, it is not possible to determine the proportion of burglaries reported during each of the four month segments as has been done with the 1974 survey data. Somewhere between the first four months of 1972 and May 1973, the proportion of burglaries reported to the police increased from about 50% to approximately 66% of the total burglary incidents. The sharp increase in burglaries known to the police during September, October, November, and December 1973, is due at least partly to the increase in reporting, which peaked at 79% of the total. Likewise, the decline in percent reported between the end of 1973 and April 1974 is accompanied by a similar decline in the number of burglaries known to the police.

ESTIMATED TREND IN TOTAL BURGLARY

If all the burglaries had been reported to the police during the time span of the two surveys, the burglary trend since 1971 would resemble the line in the upper portion of Figure 2. The official burglary rates are shown in the lower section of the Figure.

The estimate of total burglaries at each time point is calculated by correcting the official data in accordance with the percentage reported to the police. If 50% of all the burglaries are reported and known to the police, then the total number of burglaries is twice the official number-- a situation which existed in 1971-72. As of mid-1973, however, the percent known to the police had increased to 66%, and the total number would be less than in 1971-72.

Clearly, the two estimates result in quite different conclusions about changes in burglary rates. The official statistics indicate an increase in burglaries since 1971. When the official estimates are corrected for differences in the proportion of burglaries reported to the police, the conclusion would be that the burglary rate was lower in 1973 than in 1971 or 1972. Even with the increase during the first four months of 1974, the burglary rate, per 1000 households, is not as high as it was during 1971 and 1972. This conclusion supports the finding reported earlier that the burglary victimization rate was lower in 1973-74 than it was in 1971-72.

Figure 1a. Official Burglary Rate: 1971 to 1974

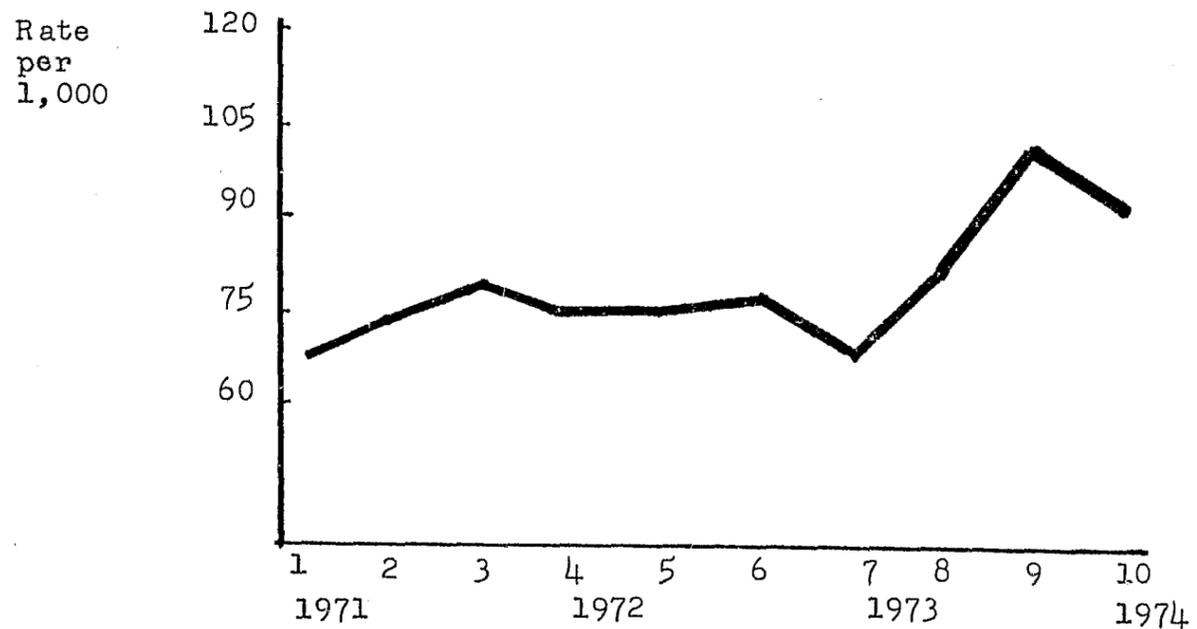


Figure 1b. Percent of Burglaries Reported to Police

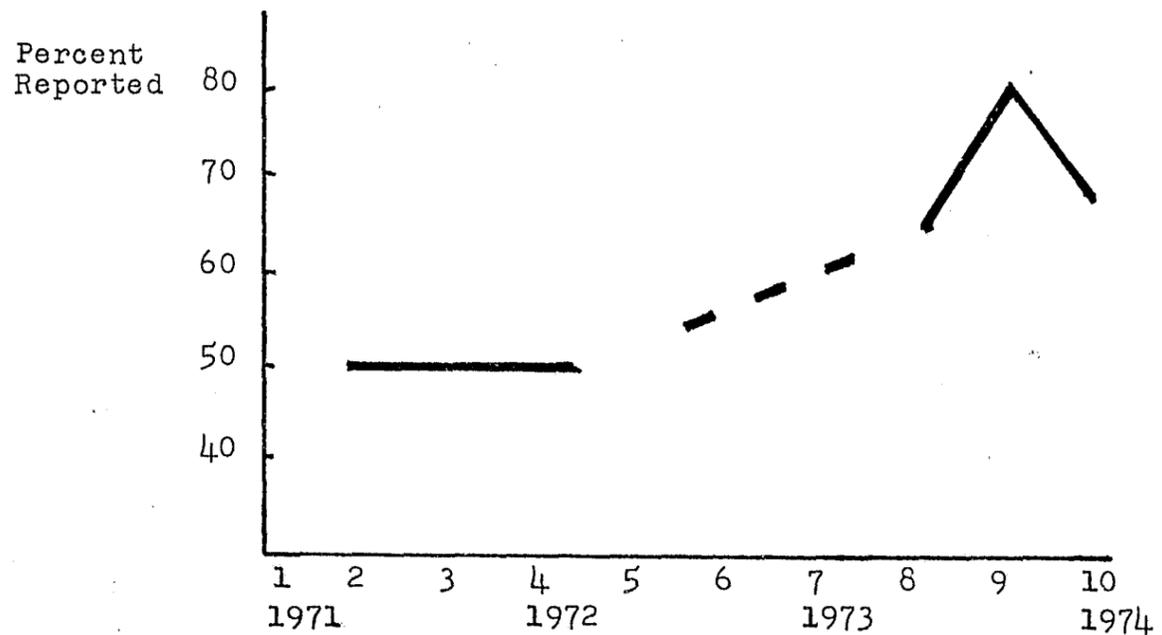
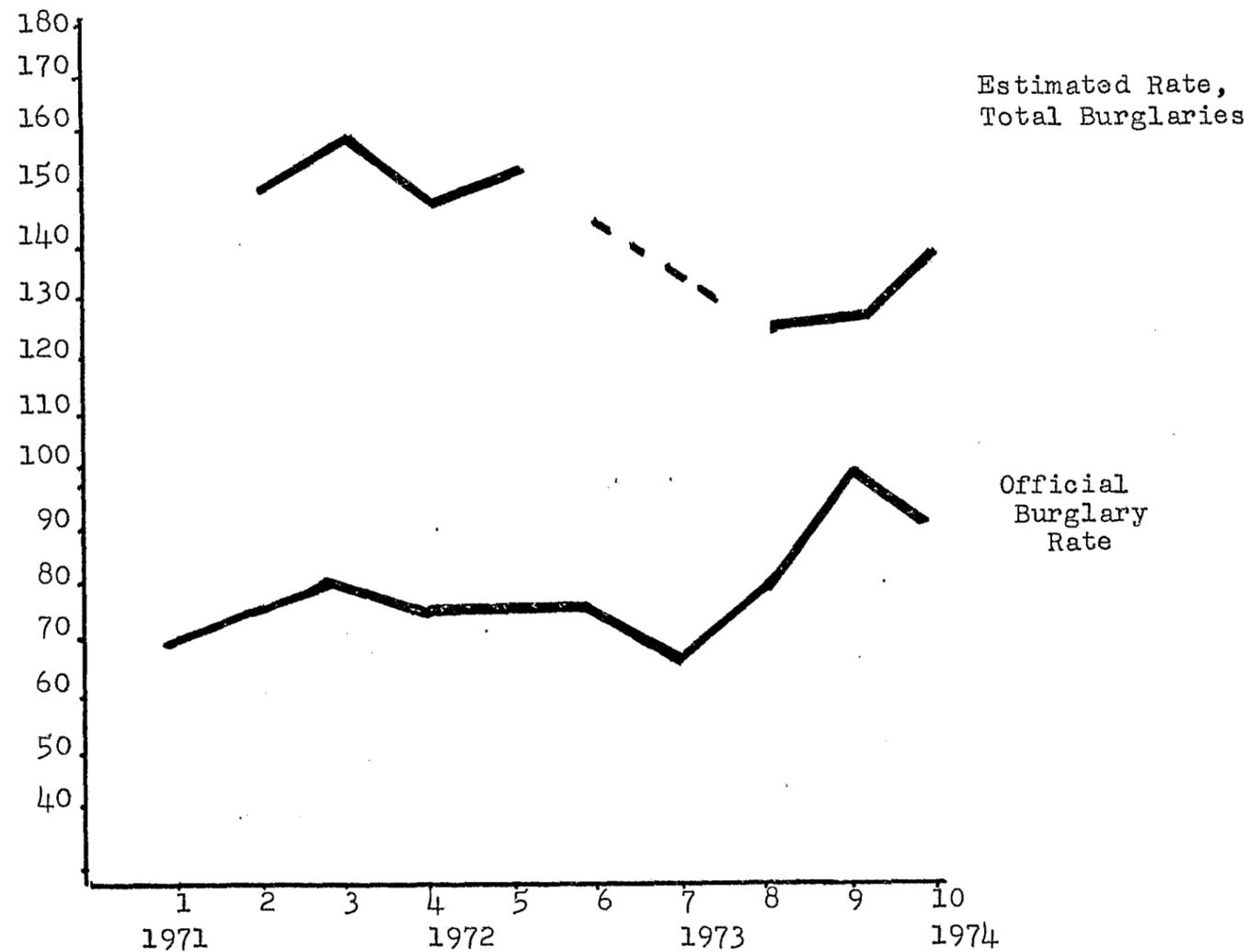


Figure 2. Estimated Trend in Total Burglaries: 1971 to 1974



The official burglary rate is based on Portland Police Department data.

The estimated total burglary rate is computed by correcting the official statistics for the proportion which were not reported to the police.

The dotted line indicates that no information is available on the proportion of burglaries reported to the police.

It is not known exactly when the burglary rate began to decline, since no data on proportion of burglaries reported to the police are available for the time period between mid-1972 and mid-1973.

PERCENT OF INCIDENTS REPORTED AND SHORT-TERM TRENDS IN CRIME

The evidence presented in the previous section indicates that the apparent increase in burglaries since 1971 was due entirely to an increase in percentage of total burglaries reported to the police. If an increase in the proportion of incidents reported could produce the illusion of an increased burglary rate over a period extending from mid-1971 through early 1974, it is quite likely that short-term changes in crime rates may also be produced by changes in citizen reporting of incidents, or by changes in the ability of the police to discover crimes in progress.

Burglary

The change in the official burglary rate for the 12-month period beginning May 1, 1973 and ending April 30, 1974 is shown in Figure 3. In the lower portion of Figure 3, the proportion of burglaries committed within the city limits which were reported to the police is shown for the same time points.

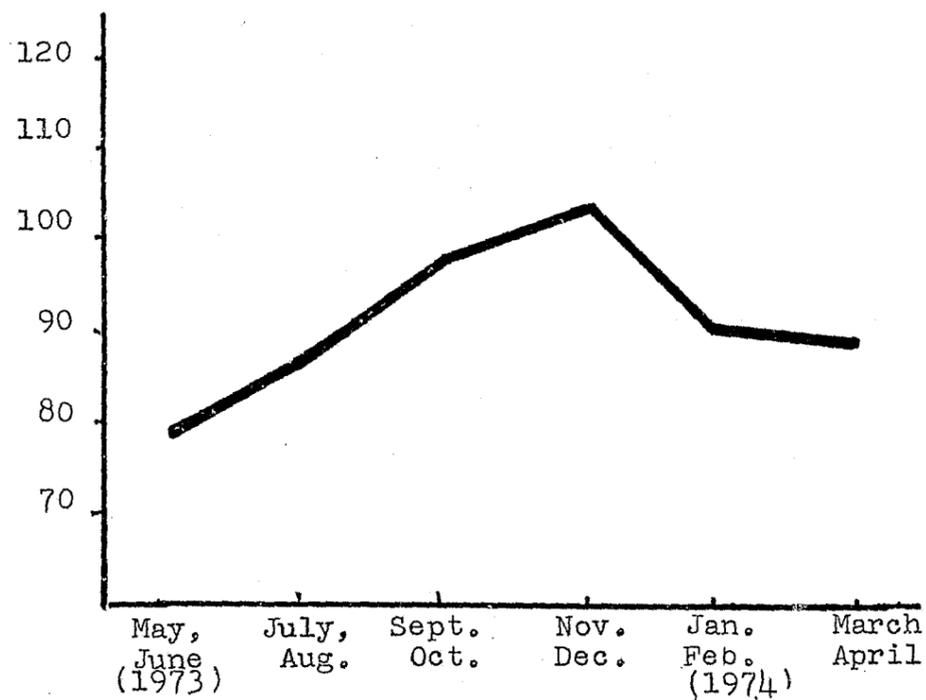
The official burglary rate increased gradually from May, reaching a peak in November and December, 1973. Corresponding to this is an increase in the proportion of all burglaries which were reported to the police. The percentage reported increased gradually, peaked in November and December of 1973, and then declined during the months of January and February.

The correspondence between fluctuations in the official burglary rate and change in the percentage of burglaries reported to the police is obviously very great. This indicates that much of the short-term change in burglary rates (based on official statistics) is attributable to changes in citizen reporting of incidents to the police, or to increased ability by the police to discover burglaries in other ways.

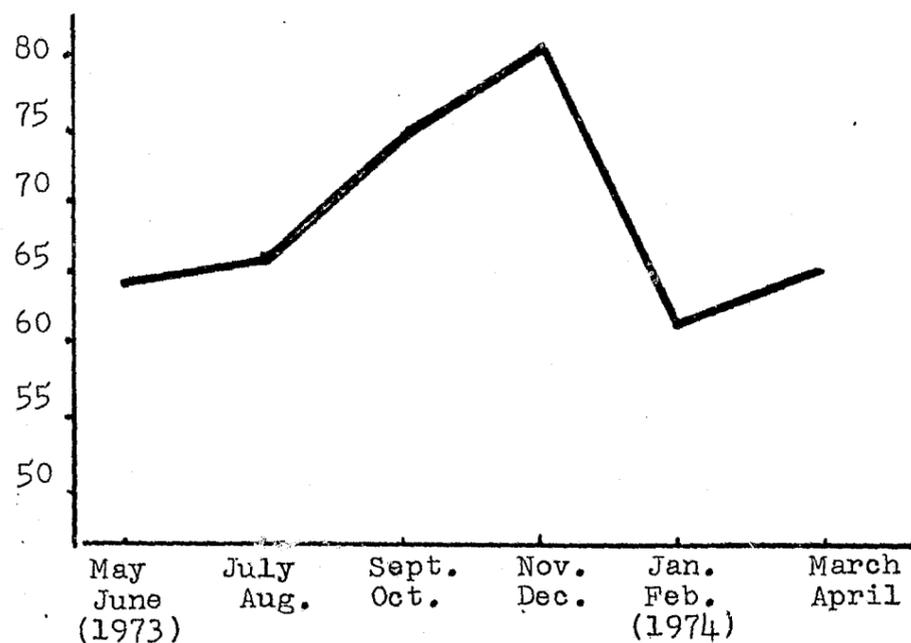
Rape, Robbery, and Assault

The analysis of rape, robbery, and assault in this preliminary report is more limited because of the lack of month-by-month or quarterly data on assaults for 1972. (Information is available only for aggravated assaults. Classification problems are severe when trying to distinguish between aggravated and simple assaults, and the analysis should be conducted on these two types of crime combined.)

Figure 3. Burglary Rate and Percentage Reported: 1973-74



Official Burglary Rate: May, 1973 to April, 1974



Percentage of Burglaries Reported: May, 1973 to April, 1974

The official crime rate for each two-month segment of 1973-74 is shown for rapes, robberies, and assaults (combined) in Figure 4. A gradual increase can be observed between May 1973 and October, followed by a slight decrease, and then another gradual increase during March and April of 1974.

In the lower portion of Figure 4 are the proportions of these crimes reported to the police during each of the two-month segments. The similarity between the two diagrams is quite clear for the time period beginning in May and ending in February of 1974. During March and April, however, the reporting rate declined sharply, whereas the proportion known to the police increased. If the data from the survey concerning proportion reported to the police are accurate for the last two-month period, the indication is that the total number of rapes, robberies, and assaults increased even more than the official statistics indicate.

The small number of incidents in the survey for any two-month period, however, should caution against firm conclusions about the possible increase in the last two-month segment. The upper confidence interval for percent reported in the last two-month period is 50%. Even then, the observed increase in official data probably cannot be attributed to an increased reporting rate.

Total Crime

The survey data on reporting is more reliable when the actual number of incidents during a time period is greater. To increase the reliability of the survey data, all four major crimes (rapes, robberies, assaults, and burglaries) have been combined, and the rate, per 1000 population, for each two-month period is plotted in Figure 5 (top). The percent reported to the police is shown in the lower portion of Figure 5.

The similarities are again apparent in that the crime rate seems to rise and fall in conjunction with changes in the proportion of crimes reported for the first 10 months. The last two-month segment, however, differs from the general pattern since a decline in reporting corresponds to a slight increase in the official crime rate, indicating that the actual increase during the final two months may have been more substantial than official statistics indicate.

Discussion

The evidence strongly suggests that changes in the official crime rates are produced, at least in part, by changes in the percentage of incidents

Figure 4. Personal Crimes and Percentage Reported: 1973-74

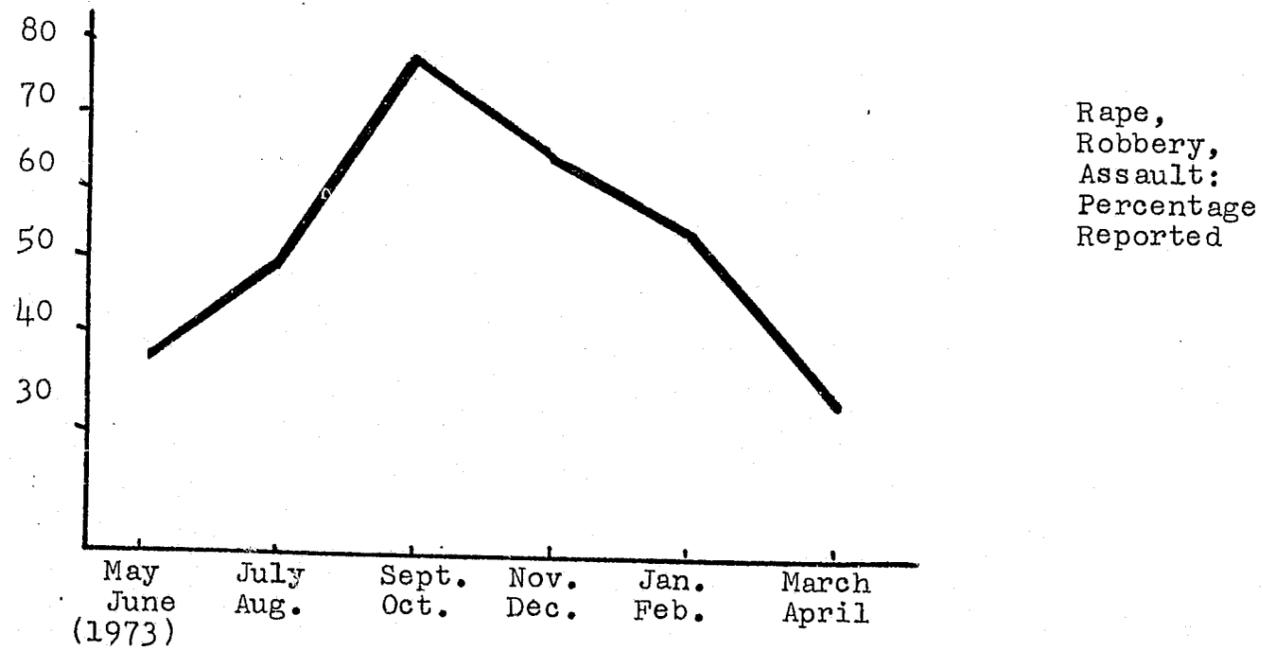
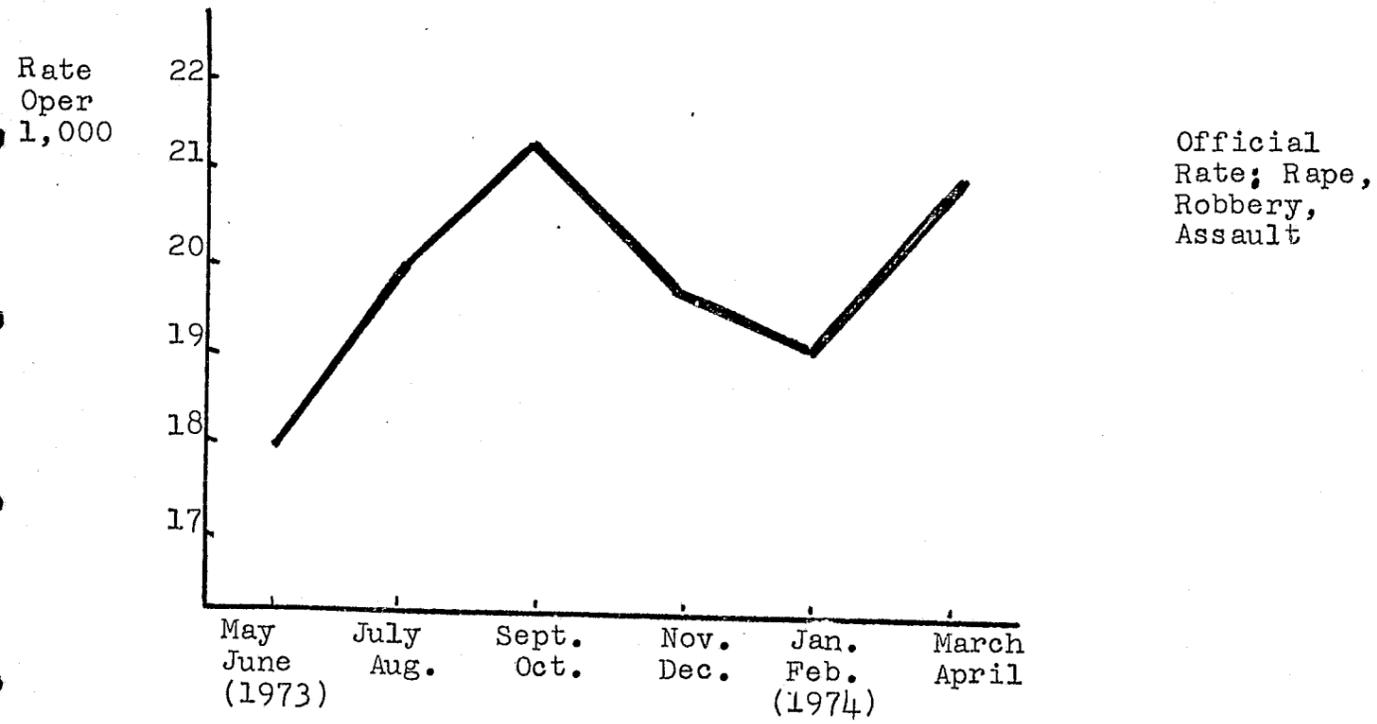
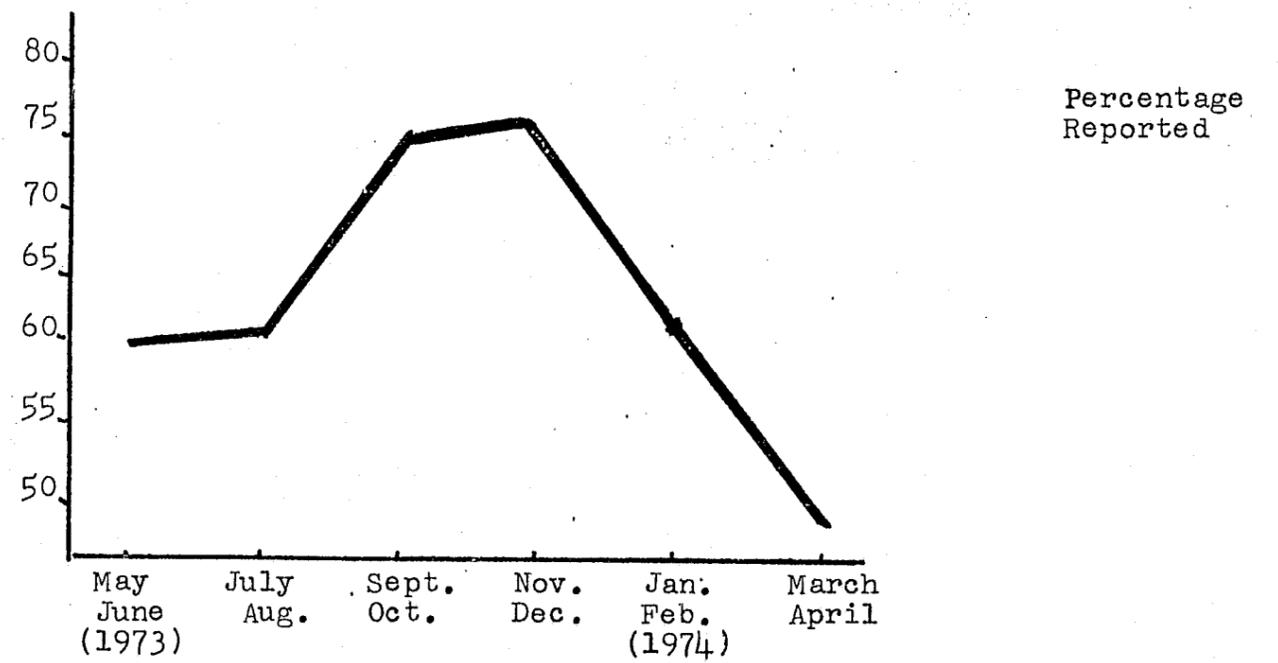
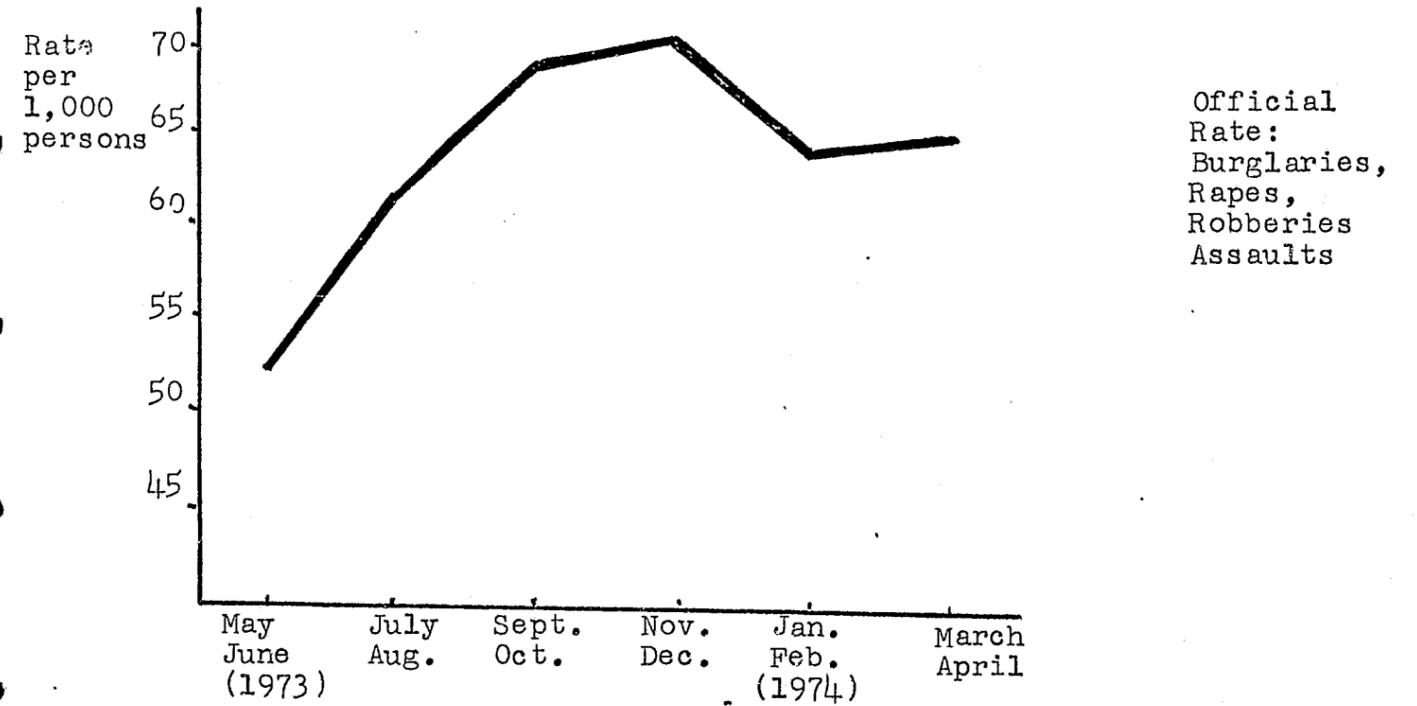


Figure 5. Total Crimes and Percentage Reported



which are reported to the police. If this finding is correct and can be replicated in other studies, the implications are quite serious. It means that official statistics concerning changes in the crime rate cannot be used as a guide for determining whether the total volume of crime has increased or decreased from one time period to another.

Newspaper reports stating that crime in Portland has increased by 10% or 20% or even 60% may mean nothing, except that the citizens are reporting a greater proportion of the incidents to the police than they were in the past.

The use of official crime statistics to pass judgement on the effectiveness of law enforcement officials, the criminal justice system, or the Impact programs is very risky because changes in the official crime rate are not indicative of changes in the total volume of crime. This is not a result of poor police record-keeping or performance concerning statistical analysis, but simply a recognition of what most law enforcement officials have always known: official crime rates represent only the crimes known to the police.

The evidence presented here, however, documents the fact that the percentage of crimes reported to the police is not a constant factor, but subject to considerable variation within two-month to two-year time segments. And, the evidence leads to the conclusion that alternative procedures must be developed in order to obtain accurate indications of the change in both reported and unreported crime.

(The second report in this series, entitled "Methodological Approaches to the Study of Short-Term Victimization Trends," contains a discussion of the methodological problems and the results of preliminary tests for two models designed to permit short-term victimization trend analysis.)

COMPARABILITY OF THE TWO SURVEYS:

A METHODOLOGICAL REPORT

Several procedural differences exist between the 1972 and the 1974 surveys. Each of these will be discussed, along with their implications for the results of the comparison.

Counting Rules

The methods of counting the number of rapes, robberies, assaults, and burglaries for the comparison with the 1971-72 survey very likely resulted in the inclusion of certain types of offenses in the 1974 data which were excluded from the earlier survey. In both surveys, the respondent was asked whether or not a particular type of crime had occurred, such as a burglary, and if the respondent replied affirmatively, the interviewer asked how many times the crime had been committed. Later in the interview, the respondent was asked to supply considerable detail about each of the incidents. In both surveys, it was possible for the interviewer to decide that if several crimes of a similar type had been committed (such as four assaults), the respondent would be asked detailed questions only about the last incident. The questionnaire would indicate that a series of four assaults had been committed, but specific details would be obtained only for the last incident. The problem of comparability lies in the fact that the Census Bureau did not count in the final totals any incidents which were coded as a series of incidents, and in the fact that the rules and conditions which permitted an interviewer to code an incident as a series, rather than filling out a detailed report on each, may have differed between the two surveys. In the 1974 data, each event in the series was counted as an occurrence of a crime.

The rules for interviewers in 1972 were that all of the following conditions had to exist before it was permissible to fill out one incident report form for more than one crime:

1. The incidents must have been of the same type
2. There must have been at least three incidents in the series.
3. The respondent must not have been able to recall dates and other details of the individual incidents well enough to have reported them separately.

The interviewers in 1974 were told that all of the following conditions had to be met in order to fill out one form for more than one crime:

1. The incidents must be of the same type, committed in the same way and, if known, by the same persons.
2. There must be at least three incidents in the series.
3. The answers given on the incident report for the last incident must be almost identical to the answers which would be given for the earlier incidents in the series.

The problem, of course, lies in the last requirements. The rule used in the 1974 survey may have made it easier for the interviewer to decide that one form would provide adequate information for three or more incidents. In the 1974 survey, the exact number of times the incident occurred was recorded and in the comparison with the 1972 data each occurrence in the series was counted as one crime. However, it undoubtedly is the case that some of the series which were counted in the 1974 data fit the requirements used in 1972 and, therefore, should not have been counted in making the comparison. And, it is also possible that some of the interviewers in the 1972 survey inadvertently may have used the requirements employed in 1974.

In Table A.1 the frequencies with which series of incidents occurred in the 1974 data are shown. Sixty-nine of the burglaries were reported as series of events. In four instances, the interviewer recorded that a series of five burglaries had occurred. If these are removed from the data, the number of burglaries would be reduced by 20, to a total of 219, and a rate of 116 per 1000, rather than the rate of 127 per 1000 reported earlier. If all of the series are removed from the data, the rate drops below 100 per 1000. There is no way to know how many of these series would have been recorded in the same way by the 1972 interviewers and not counted in the 1972 data.

The most marked effect on victimization rates if series are removed is for assaults. Five respondents said that they had been the victim of seven or more assaults. This adds a total of 35 assaults to the data.

It surely would take a rather remarkable individual to recall the specific details of every one of these assaults to an interviewer, and it is quite likely that interviewers in 1972 would have coded these as series,

Table A.1
Frequency of Series

	Burglary	Assault	Robbery	Rape
Single Occurrences	170	38	16	3.4
Series of 3	13	4	1	-
Series of 4	1	-	-	-
Series of 5	4	.85	.5	-
Series of 6	-	-	-	-
Series of 7 or more	-	5	-	-
Series, number unknown (counted as 3 in data)	2			
Total, with series counted once for each event in the series	239	89	21.5	3.4
Contribution of series	69	52	5.5	0

rather than filling out seven incident report forms for each person. If so, these 35 assaults should not be counted in the 1974 data. Removing them leaves a total of 55 other assaults. This is a victimization rate of 25 per 1000, rather than the 41 per 1000 reported earlier. An assault rate of 25 per 1000 is considerably below the 40 per 1000 reported in comparing with 1972. In 1971-72 the assault rate for St. Louis was 25; for Newark it was 12; Cleveland and Baltimore had assault rates of 28; Atlanta had 30 per 1000, and Dallas had a rate of 31 per 1000. By contrast, Portland's rate in 1972 was 40 per 1000.

The point here is not to quibble over whether series should be counted as one occurrence, one incident for each occurrence in the series, or excluded entirely. But it clearly makes comparisons with the earlier data difficult. Even if all interviewers had been given the same instructions, there is a considerable amount of judgment involved on the part of the interviewer concerning whether to consider several events as a series or as single occurrences. If series are excluded entirely from the final count, the interviewers are in a position to drastically alter the presumed victimization rates either through extreme diligence in filling out one form for each incident (resulting in a higher rate) or through a loose interpretation of the respondent's ability to recall details about each incident.

Length of the Recall Period

Another difference in the procedures involves the actual length of the recall period. In the 1972 survey, respondents were asked to recall events for a 12-month period up to the first of the month in which the interview was being conducted. The interviewers did not fill out reports on incidents that occurred during the month of the interview. Thus, the average recall period was about 12.5 months.

In the 1974 survey, the interviewers were told to ask about all incidents since May 1, 1973 up to the date of the interview. In the preceding analysis, the time period of May 1, 1973 through April 30, 1974 was used, and no incidents reported prior to May 1 or after April 30, 1974 were included. This procedure was used in order to facilitate the data analysis, but for purposes of comparability, the number of crimes in May and June, 1974 was determined and an adjusted 12-month rate was calculated. Persons

interviewed in July were permitted to recall incidents for a 14-month period including both May and June, 1974. The adjusted rate is based on the actual number of person/weeks, divided by 52, and the total number of incidents recalled for all months. Series of three were counted as three each, and larger series excluded.

Even when incidents reported during the month of the interview are counted, the rates in Portland during 1973-74 are lower than they were in 1971-72 and the resulting figures are lower than those actually used when comparing the two time points.

In Table A.2 are the victimization rates for Portland in 1973-74 using four different counting procedures. At the top is the rate for 1971-72 in which series of incidents were not counted at all on the presumption that when the respondents were telling the interviewer about actual crimes they would be able to recall sufficient detail so that the interviewer could fill out one incident form for each event. In the second row is the counting procedure and rates for 1973-74 which were used in drawing the conclusion that the burglary rate is lower than it was during the earlier time period and that the rate for robbery may be lower.

It should be noted that this procedure yields the highest figure of the four alternative methods. In the third row is the adjusted 12-month recall figures when series of three are counted, and incidents mentioned during the month of the interview are included. The rates are lower than those found when using the first method. In the third row is the procedure which may be closest to the one used by the Census Bureau. Series of three incidents are counted as one each, but larger series are excluded entirely on the assumption that the respondent probably was quite vague about whether the incidents really occurred or how many there were. If it is the case that this procedure is closest to the one used by the Census Bureau, then the rates for all crimes except rape have probably declined during the two-year period. In the bottom row all series are excluded, but this procedure is not considered comparable to that used in the early survey because of the different instructions given to interviewers.

The effect of removing series of crimes can be illustrated by an example. In the 1974 survey there were five respondents who said that they had been the victim of seven or more assaults. This added 35 assaults

Table A.2

Alternative Procedures for Calculating Victimization Rates

	Burglary per 1000 Households	Assault per 1000 Persons	Robbery per 1000 Persons	Rape per 1000 Persons
1971-72 Rate: 12-month recall. All series excluded	151	40	16	3.00
12-month recall. Each incident in series counted as one incident	127	41.3	10	1.58
Full recall. Ad- justed to yearly rate. Series of 3 counted. Other series excluded. ¹	121	27.8	8.75	-
12-month recall. Count series of 3. Exclude other series entirely	111	30	8.7	1.58
12-month recall. Exclude all series from count	90	17.4	7.3	1.58

¹ Series of incidents reported in the month of the interview tended to be of the "seven or more" type, with scanty detail and almost certainly meet the 1972 requirements for classification as a series of incidents.

to the 1974 data. If the 1974 survey of about 2000 people found five such persons, it is possible that the 1972 survey of 20,100 persons had 50 persons giving this response. If these series were counted, it would add 350 assaults to the 1972 data, and an assault rate of about 57.4 would be calculated for Portland in 1972, instead of the 40 per 1000 rate which was reported.

These data are presented to show that the method used in counting the 1974 victimizations is the most conservative procedure available, and the one designed to yield the highest possible estimate of incidents. Even with this extremely conservative approach, the burglary rate still is significantly lower than the one in 1972, as is the rate for robbery.

Removing the series of incidents from the data also has an effect on the reporting rate in that it tends to increase when the series are removed. For burglaries, if all the series greater than three are removed, the reporting rate is 72%. For assaults, the effect is even more marked in that none of the 35 assaults recorded by the five persons who said they had been an assault victim seven or more times were reported to the police. If series greater than three are removed from the assault data, the reporting rate increases to 64%.

Interviewing Procedures

The major finding in the first analysis phase of this study is that the crime rate for at least one serious crime--burglary--has gone down, and the percentage of burglaries reported to the police has increased. This finding could also be true for robberies, and perhaps even for assaults. Although it is possible that the decline in burglaries and increase in reporting could be attributed to the Impact program or other special crime prevention efforts which began between the two time periods, it is prudent to examine the possibility that this result is an artifact of the interviewing procedures, or the sample, or some other non-substantive factor.

Most of the previous research on victimization surveys indicates that respondents are best able to remember serious crimes, and are most apt to forget the insignificant, trivial, and somewhat uneventful crimes. This is quite reasonable, given the greater salience of the former.

It is also reasonable to expect that respondents who are becoming fatigued, or are in a hurry to finish the interview, may skip over some

of the insignificant crimes which have occurred. Also, interviewers who are becoming fatigued or are hurried may not think that a particular incident is important enough to record and to fill out the detailed form. The 1974 interviewers were informed about the extreme importance of obtaining information on every incident, no matter how trivial, and the 1972 interviewers also were aware of the importance of this. Nevertheless, if the interviewers in 1974 were less careful in obtaining information about trivial incidents, then the 1974 data will not have as many of the insignificant incidents as the 1972 data.

The 1974 interview was conducted with only one person in the household, whereas the 1972 interview was conducted with every person. In 1972, only the first respondent was asked about household crimes, such as burglaries, but it is possible that the first respondent failed to mention some of the burglaries, and that a subsequent person in the household remembered an incident which had been forgotten by the first person. Assuming that the forgotten incident was not as important as incidents which the person could remember, the effect would be the same as before: the 1974 data would have a smaller number of trivial, non-serious crimes than would the 1972 data. Continuing with this line of reasoning, the victimization rates in 1974 could be lower NOT because of a real reduction in crime, but because of the comparative absence of insignificant incidents. If this is true, and if it is also true that insignificant incidents are less apt to be reported to the police, then the percentage of incidents reported would appear to have increased. Again, the increase would be an artifact of the procedures which failed to elicit the proper number of insignificant crimes.

There is no a priori reason to believe that the 1974 interviewers were less careful than their counterparts in 1972, or that respondents in 1974 became more fatigued. On the other hand, it is plausible to believe that interviewing a second person in the household could uncover a forgotten household crime even though the second person was not specifically asked about household crimes.

There is no perfect method for testing the proposition that a smaller amount of trivial crimes were recorded in the 1974 data, but several procedures can be used to provide some evidence about the relative percentage of insignificant incidents in the two surveys. The following definitions for "less significant" crimes were selected:

Burglaries:

- (a) Those with nothing taken are less significant than those involving stolen items.
- (b) Those involving no loss or damage are less significant than those involving some loss or damage.
- (c). Those in which the burglar did not gain entry to the structure are less significant than those in which the burglar gained entrance.
- (d) Those in which the burglar gained entrance without force (e.g., through an unlocked entrance) are less significant than those involving entry by breaking a lock or window or the use of some other type of force.

Larceny:

- (a) Attempted larcenies are less significant than successful larcenies.

Auto Theft:

- (a) Attempted (unsuccessful) auto thefts are less significant than completed thefts.

Assaults:

- (a) Assaults involving weapons or those without weapons in which the person is injured are more significant than those without weapons or those without injury.

No definitions for insignificant rapes or robberies are given because of the comparative seriousness of these crimes. Comparisons on the basis of the value of property taken will be made below, but their interpretation is difficult because of inflation, the increasing number of small, easily stolen items which are relatively expensive (stereo components, portable televisions, and so on).

In Table A.3 are the percentages of burglaries defined as less and more significant. For the first three definitions of less significant burglary incidents, the 1974 data contain more of the trivial, difficult to remember, type than does the 1972 data. In 1972, 34% of the burglaries mentioned to the interviewers involved no stolen items, whereas in 1973-74 the percentage of burglaries in which nothing was stolen was 41% if all series are excluded, and 44% if series are counted once each. In either case, the hypothesis that the 1974 data contains fewer trivial incidents is not supported. The percentage of burglaries involving no monetary loss or damage is not much different, but a slightly greater percentage of the 1974 burglaries involved no monetary loss. And, 32% of the 1974

Table A.3
 Frequency of Less Significant Burglary Incidents:
 1971-72 and 1973-74¹

	1973-74		
	1971-72 %	All series Excluded %	Series counted as one Occurrence %
<u>Burglary</u>	N=(1510)	N=170	N=190
Nothing stolen	34%	41%	44%
One or more items stolen	66%	59%	56%
	<u>100%</u>	<u>100%</u>	<u>100%</u>
Monetary: No loss or damage	19%	25%	22%
Monetary: Some loss or damage	81%	75%	78%
	<u>100%</u>	<u>100%</u>	<u>100%</u>
No entry of struc- ture, forcible attempt	21%	32%	32%
Unlawful entry	43%	12%	13%
Forcible entry	36%	51%	51%
UK, NA	-	4%	4%
	<u>100%</u>	<u>100%</u>	<u>100%</u>

¹ The actual number of incidents in 1971-72 is an estimate based on 10,000 households.

burglary incidents involved no entry to the structure, compared with 21% of the burglaries in 1971-72. On the other hand, there is a marked discrepancy between percentages in the unlawful entry and forcible entry categories. In 1972, 43% of the burglaries involved entries gained through open or unlocked doors, windows, or other entrances. Only about 12% of the burglaries in 1974 were in this category. Although this tends to support the notion that fewer insignificant burglaries were uncovered in the 1974 survey, the other three methods of testing the proposition would indicate that the 1974 survey uncovered more insignificant incidents. Putting aside the potential methodological differences for a moment, the discrepancies would make sense if Portland residents in 1974 were more apt to keep their doors and windows locked than they were in 1971-72. If doors and windows are locked, a burglar cannot get in without force, and may not be able to get in at all. This would account for the marked decline in the unlawful entry category, since an unlawful entry by definition involves an unlocked entrance. A burglar who does not gain entry cannot steal anything, and this could account for the larger percentage of burglaries in 1974 in which nothing was taken.

The value of items stolen in 1974 was greater than the value in 1971-72. In 1974, 18% of the burglaries involved a loss of less than \$50, compared to 35% in 1972. In 1974, 36% of the burglaries involved a loss greater than \$250, compared to 20% in 1972. These differences are close to being statistically significant, but the comparison is confounded due to inflation and to the increasing number of expensive, easily stolen items.

The conclusion drawn from this analysis is that the decline in burglaries between 1971-72 and 1973-74 was not an artifact of respondents in 1974 failing to recall the less significant incidents. In fact, it appears that either there were more of the trivial types of burglaries in 1974, or the respondents in 1974 were better able to remember them than they were in 1972.

In Table A.4 a similar type of analysis has been conducted with larcenies. No comparison of larceny rates has been made with 1971-72 because of differences in procedures. In the 1972 survey, all persons in the household were interviewed, and any larceny which occurred near the home

Table A.4

Frequency of Less Significant Larceny Incidents:¹

1973-74

	1971-72	1973-74 Series Excluded	1973-74 Series counted once
<u>Larceny</u>			
Household	N=2170		
Personal	N=2460	N=244	N=337
Attempted Larceny			
Household	9%		
Personal	11%	10%	13%
Under \$50			
Household	59%		
Personal	57%	55%	54%
\$50 to \$249			
Household	25%		
Personal	18%	24%	21%
Above \$249			
Household	4%		
Personal	7%	8%	8%
Not Ascertained	3%		
		3%	3%
Don't Know	7%		

¹ In the 1972 survey, a household larceny was defined as one which occurred near the home and a person larceny was defined as one which occurred away from home. In the 1974 survey we excluded from the analysis all incidents which the respondent recalled for other adults. Some of the excluded larcenies in which the respondent said another adult was the victim undoubtedly occurred near home. Thus, the 1974 data will have undercounted "household" larcenies as defined in 1972. In the table, all larcenies in 1974 are combined. The number of incidents in 1972 is based on 10,000 households and/or 20,100 persons in the sample.

The hypothesis that the 1974 survey has fewer trivial incidents was not supported.

was classified as a household larceny. In 1974 we interviewed only one person, and we excluded from all analysis any larcenies (or other crimes) in which the respondent said that some other adult was the victim. Some of the excluded larcenies undoubtedly occurred near the home, and would have been counted as household larcenies in 1972. Nevertheless, the distribution of larceny incidents by attempts and amount taken should provide some indication of whether the 1974 survey was as successful as the 1972 one in uncovering insignificant incidents. The results show that 10% of the larcenies in 1974 were attempts (if all series are excluded), and 13% were attempts if each series is counted as a single occurrence. In 1972, 9% of the household larcenies were attempts, and 11% of the personal ones were in this category. An attempted larceny is one of the least significant of all crimes, since in almost all instances it does not even involve contact with the offender. Thus, there is no evidence that the 1974 survey failed to record attempted larcenies. The value of items taken is slightly greater in 1974 than in 1972, but the percentage differences in the under \$50 category are not significant. The upper confidence interval for the 1974 figure is 60-61%.

The final two tests pertain to the less serious types of assaults and auto thefts (see Table A.5). Of all the assaults committed in 1971-72, 63% involved no weapon and no injury. In 1973-74 the percent in this category varies dependent upon whether series of incidents are excluded (56% are minor); counted as one instance of an assault (63% are minor); or counted as one assault for each event in the series (67% are minor assaults). Regardless of the counting method used in 1974, the percentage which are less significant (minor) is not significantly different than in 1971-72.

For auto thefts, the percentage which were unsuccessful is virtually the same in the two time periods.

Once again, there is no support for the hypothesis that the different procedures used in 1974 failed to uncover the trivial, hard-to-remember incidents. There is no support for the idea that the decline in burglaries and increase in percentage reporting is due to a failure in 1974 to uncover trivial incidents which were less apt to be reported to the police.

Table A.5

Frequency of Less Significant Assaults and Auto Thefts:
1971-72, 1973-74

	1971-72	1973-74 series Excluded	1973-74 Series counted as one occurrence	1973-74 Series counted as one occurrence each event in the series
<u>Assaults</u>	N=804	N=38	N=60	N=90
No weapon/ no injury	63%	56%	63%	67%
Weapon or injury	37%	44%	37%	33%
	100%	100%	100%	100%
<u>Auto Theft</u>	N=340	N=48	N=53	
Unsuccessful	22%	19%	21%	
Completed	78%	81%	79%	
	100%	100%	100%	

The Sample

The sample used in the 1974 survey was a block probability sample which had been updated in the spring of 1974. The sample was drawn by Baresldy and Haslacher interviewing firm in Portland.

The interviewing firm has a listing of all blocks in the metropolitan area. These are numbered within tracts, using the same numbering system devised by the Census Bureau. The number of blocks drawn for the sample depends on the size of the sample desired. Using a random numbers table, the firm selects blocks for the sample. The interviewing firm has a listing of all structures on each block, and the address of the structure. After blocks are selected for the sample, the actual structures at which interviews are to be taken are selected by choosing every nth structure. The sample is drawn so that most blocks have no more than one structure at which an interview will be conducted. In blocks with extremely high density housing units, a maximum of three structures could be included in the sample. The address listing of structures is updated every two to four years by the firm, and the last up-dating was finished less than a month before the sample for the 1974 victimization survey was begun.

Commercial establishments were not eligible for inclusion, but boarding houses, apartments, transient hotels, and other structures of this type were not excluded from the sample.

Regardless of the care which is used in drawing a sample, it is always possible that the 1974 sample included fewer households and persons in the categories most apt to be victimized. If so, the lower victimization rates in 1974 could be due to the characteristics of the respondents rather than to a real reduction in crime.

As shown in Table A.6 there is no difference between the surveys concerning the proportion black, nor is there any difference in the income groupings. On tenure of household, 63% of the respondents in the 1974 survey lived in homes they were buying or owned, whereas only 55% lived in this type of dwelling in the 1972 survey. This difference, however, would not result in a smaller number of burglaries in the 1974 survey because the burglary rate for homes being bought or owned is higher than for homes which are rented.

Table A.6

Characteristics of Respondents:

1971-72, 1973-74¹

	1971-72 Survey	1973-74 Survey	
<u>Race of household head</u>	%	%	
White	95%	95.5%	
Black	5%	4.5%	
<u>Income</u>			
\$3000 or less	12.6%	12%	
\$3000 to \$6999	24.4%	26%	
\$7000 to \$9999	12%	13%	
\$10,000 to \$14,999	25%	25%	
\$15,000 to \$24,000	14%	13%	
over \$25,000	3.8%	4%	
NA or Don't Know	8%	7%	
<u>Tenure</u>			<u>% of Burglaries 1971-72</u>
Owned	55%	63%	51%
Rented	45%	37%	49%
<u>Units</u>			
One unit	69%	73%	73%
Two units	4.6%	7.1%	5%
3-9 units	8%	9%	9%
10 or more	18%	8%	12%

¹ Income characteristics from the 1971-72 survey are from page 46 of the Portland Report on the L.E.A.A. Survey.

Likewise, there are some differences concerning the type of unit. In 1974 76% of the respondents lived in single-unit dwellings, whereas only 69% of the respondents in 1972 lived in single unit homes. Again, however, this would not produce fewer burglaries in the 1974 data, because the burglary rate for single unit homes is greater than for the other types. The data published for the 1972 survey indicate that a surprising number of interviews were taken in large apartment dwellings (18%). However, only 12% of all the burglaries occur in such units. If it has any effect at all, this would result in the 1974 survey having a larger number of households in the high-burglary category.

Non-Interviews

An interviewer working for the Census Bureau is expected to return again and again to a household in order to complete an interview if, on the first visit, no one was at home. A sample of about 12,000 households was drawn by the Census Bureau and completed interviews were obtained in about 10,000 of these. Interviewers are evaluated by their superiors at least partly on their completion rate. In 1972, interviewers were not permitted to substitute one household for another if an interview could not be obtained at the original address. This is a fine procedure, but it is far more expensive than the methods used by most private interviewing firms, and the procedure used in the 1974 survey. In 1974, interviewers were instructed to make at least two call-backs in order to obtain an interview at the original address. The call-backs had to be at different times of the day than the original visit. If, after two call-backs, the interviewer failed to find anyone at home eligible for interviewing, she/he was permitted to substitute another household for the original. The interviewer, however, could not select just any house, but used a numerical guide to determine which house would be substituted for the original. Interviewers were given a list of random numbers keyed to a "skip" pattern. If the original address ended in an odd digit, the interviewer selected the proper number, and used it to determine the number of houses to skip, and whether the skip should go toward higher addresses or lower ones. In apartment buildings, the same pattern was used, but the skip was within the apartment if there were enough units.

The latter procedure, if used properly, should produce a set of substituted households which are representative of the households that would have been included in the original sample. One method of determining whether the substitution procedure introduced bias in the 1974 sample is to compare the characteristics of the persons in the original sample with the characteristics of persons selected as substitute respondents.

As shown in Table A.7, there are no differences between the original households and the substitution ones. In the original sample, 66% had not been victimized, and 34% were the victims of one or more crimes. For the substitutes, 65.7% had not been victimized, and 33.5% had been the victim of one or more crimes. Substitute interviews were slightly more apt to involve non-whites, but the differences are not significant. The education level of persons in the original sample are about the same as those in the substitute sample, as are the incomes. A variety of other characteristics were also examined, and no differences were found.

Crime Classification

The classification of incidents as burglaries, larcenies, assaults, and the other crime types was done in a similar way in the two surveys, but was not identical in terms of the method. The rules used for classification of incidents should be identical, as the person in charge of classification for the 1974 survey used the guidelines prepared by the Census Bureau for making judgments about crime coding. The original intention in the 1974 study was to classify incidents on the computer through a series of "if...and...or..." statements. It became apparent, however, that the detailed report would have to be read very carefully by a person thoroughly familiar with the classification rules in order to avoid logically impossible codes. In addition, we had encouraged the interviewers to write full comments on the details of the incidents, and their own comments about the veracity of the respondent. These comments sometimes were of the type, "He said yes to this question but answered it no earlier." In addition, if we waited to code incidents on the computer, it would be more difficult to call the respondent back to obtain additional information if it was needed for classification. And, the persons reading the detailed reports had to determine exactly what classification would be used in order to insure that logically impossible codes did not exist on the forms.

Table A.7

Characteristics of Original Sample and Substitutions

	Original N=1245	Substitutes N=642
<u>Victimizations</u>		
None	66%	65.7%
One or more	34%	33.5%
<u>Race</u>		
Black/other	4.9%	5.2%
White	95.1%	94.8%
<u>Education</u>		
1 to 11 years	22%	26%
12 years	37%	35%
12+ years	41%	39%
<u>Income</u>		
Below \$6000	24%	26%
\$7000-\$9999	21%	18%
\$10,000/above	55%	56%

Thus, we decided to employ a team coding procedure in which one person read all the details of the incident report, determined the proper code, and then submitted the report to a legal specialist working on the project (a lawyer and member of the Oregon Bar) to confirm or disagree with the classification code. In case of disagreement, the rules were reviewed and, in some instances, consultation was sought from expert coders in local police departments.

In the 1972 survey, the same procedures were used, except that the actual assignment of the code was done on the computer. If logically impossible combinations of responses were found, the respondent was called to clarify the incident. A reliability study of the 1974 coding was conducted in which short descriptions of a sample of incidents were given to an expert coder. Her codes were then compared with the ones which had been used. The sample was a random selection of incidents, and on these there were no differences in the codes. Another sample contained incidents which had been carefully selected as representative of the most difficult classification problems (simple vs. aggravated assault; crime vs. no crime at all; rape vs. other sex offense, and so on). The reliability for these types of incidents was high across categories (e.g., assaults were not confused with robberies), but was not very good within categories. In particular, the coding distinction between simple and aggravated assault was not reliable, and the distinction between forcible purse snatching as a larceny vs. a robbery was not good. Our coders classified forcible purse snatches involving injury as robberies, whereas the expert coder classified them as larcenies. The difficulty with the assault classifications resulted in our decision not to attempt to analyze assaults separately, at least when comparing the analysis with official crime data.

DATA APPENDICES: RAW DATA

Summaries of 1971-72 Survey, 1973-74 Survey
Official Portland Police Data, and
San Jose Telescoping Information

APPENDIX A

1971-1972 Survey Data: Incident and Victimization Rates
by Location of Victim's Residence¹

Survey N Persons (20,100) Households (10,000)	Projected Number Against Portland Residents	Incidents ²	
		Rate Per 1,000	Percent Reported to Police
Portland N Persons (over 12 yr.) 295,800 Households 145,000			
Rape	900	3	42%
Robbery	4700	14.5	45%
Assault	11,800	33.1	37%
Burglary ³	21,900	151.0	50%

¹ From "Crime in Eight American Cities," U.S. Department of Justice, LEAA, National Criminal Justice Information and Statistics Service, Washington D.C., July 1974.

² An incident is a specific criminal act involving one or more victims and one or more offenders.

³ Rate per 1000 households.

APPENDIX B

1973-74 Survey Data: Incident and Victimization Rates
by Location of Victim's Residence: Portland City

Weighted, Survey N ¹ Persons = 2227 Households = 1909	Portland N Persons (over 12 yr.) 295,800 Households 145,000	Projected Number Against Portland Residents	Incidents		Frequency: Survey Data ²	
			Rate per 1,000	Percent Reported to Police	Weighted N	Unweighted N
	Rape	467	1.58	44%	3.5	3
	Robbery	2,900	9.8	52%	21.8	31
	Assaults	12,039	40.7	41%	91.0	95
	Burglary	18,981	130.9	71%	250.0	276
	Burglary, Exclud- ing commercial	18,400	127	71%	239	265

¹ The number of incidents is based on incidents against respondents and children aged 12 to 15 years. Thus, the number of persons used as the base rate is the number of respondents (1909) plus the number of children aged 12 to 15 years.

² Weighted numbers should be used to calculate incident rates.

³ For the comparison with the 1971-72 data, the 22 households and 51 people (weighted n) in the special crime prevention bureau sample were not included because the probability of them being drawn in the original sample is not known. This has only a negligible effect on the rates.

APPENDIX C

1973-74 Survey Data: Victimization Rates
by Location of Crime

	In Portland City	In Suburban Area	Outside SMSA
Persons N	2227	2627	4854
Households N	1909	2041	3950
Rape			
Rate per 1000	3.57	2.24	-
N	7.95	5.89	
Robbery			
Rate per 1000	8.84	1.56	.44
N	19.7	4.19	2.12
Assault			
Rate per 1000	51.1	24.4	5.1
N	113.8	64.2	24.98
Burglary ¹			
Rate per 1000	130.9	69	3.49
N	250	140.5	13.8

¹ Includes a small number of commercial burglaries recalled by the respondents who owned or operated stores.

APPENDIX D

1973-74 Survey Data:
Month-by-Month Data Summary¹

	Burglaries in the City		Rape, Robbery, Assault in City	
	Weighted Total	Weighted Number Reported to Police	Weighted Total	Weighted Number Reported to Police
May, 1973	14	12	5	2
June	11	4	.4	0
July	14	11	1	1
August	9	5	13	6
September	14	7	8	6
October	30	26	1	1
November	25	16	13	11
December	27	26	7	2
January, 1974	7	7	1	1
February	20	10	10	5
March	44	34	26	4
April	26	11	27	11
Total w/specific date	241	169	102.4	50

¹ Burglary count includes the commercial/home burglaries.

APPENDIX E

Portland Official Monthly Police Data: 1971

Month	Rape	Robbery	Aggr. Assault	All Assaults	Burglary
Totals	(No data)	1797	1127	(No data)	10,794
January		145	75		893
February		123	61		796
March		141	72		801
April		104	94		826
May		127	85		840
June		143	89		935
July ¹		176	122		923
August		183	136		917
September		203	103		896
October		141	95		822
November		156	81		1034
December		155	114		1111

¹ July, 1971 was the earliest month covered in the LEAA Survey

The population of Portland City is about 295,800. There are 145,000 households. Recent estimates from the Portland State University Population Center are that these numbers have not increased between 1970 and 1974.

APPENDIX F

Portland Official Monthly Police Data: 1972

Month	Rape	Robbery	Aggr. Assault	All Assaults	Burglary
Totals	169	1715	1107	-	11,034
January	(No data)	143	61	(No data)	980
February		145	91		995
March		133	77		912
April		95	80		677
May		155	109		1012
June		123	119		921
July		151	114		878
August ¹		163	96		910
September		166	109		986
October		169	79		895
November		142	84		994
December		130	88		874

¹ August, 1972 was the last month covered by the LEAA survey. To compare, one must use only 12 months, or the 12-month average computed for the 14-month period.

APPENDIX G

Portland Official Monthly Police Data: 1973

Month	Rape	Robbery	Aggr. Assault	All Assaults	Burglary
Totals	192	1486	1304	3620	11,990
January	9	110	115	286	804
February	12	80	96	224	843
March	10	113	97	260	909
April	13	64	73	202	568
May ¹	19	138	140	412	1122
June	14	101	92	245	797
July	20	128	104	358	957
August	9	119	132	348	1141
September	21	148	141	382	1207
October	16	175	103	311	1155
November	26	158	105	304	1225
December	24	152	106	306	1262

¹ First month covered by the 1973-74 survey data. June 1, 1974 is last date.

APPENDIX H

Portland Official Police Data: First 6 Months of 1974

Month	Rape	Robbery	Aggr. Assault	All Assault	Burglary
January	19	123		319	1065
February	25	141		328	1122
March	20	199		327	1051
April ¹	12	183		313	1090
May	25	140		379	1055
June	19	131		420	993

¹ Last month covered in the 1974-74 survey.

APPENDIX I

Correcting the Burglary Data by Percent Reported

	Official Burglary Rate Per 1000	% of Total Survey Bur- glaries told to Police ¹	Estm. total burgl, official data corrected for reporting
<u>1971</u>			
1. Jan - April	68.6	(No data)	-
2. May - August	75	.50	150
3. Sept - Dec	80	.50	160
<u>1972</u>			
4. Jan - April	74	.50	148
5. May - Aug	77	.50	154
6. Sept - Dec	77	(No data)	-
<u>1973</u>			
7. Jan. - April	66	(No data)	-
8. May - Aug	83	.66	123
9. Sept - Dec	100	.79	127
<u>1974</u>			
10. Jan - April	90	.67	134
(May - June	85)	(No data)	

¹ Proportion of burglaries respondents mentioned in the surveys which the respondent said had been reported to the police.

APPENDIX J

Official Statistics and Percent Reported:

Two-Month Segments Within Portland City

	Official Burglary Rate	Percent ¹ Reported	Corrected Rate	Official Rates: Rape Robbery Assault	Percent ¹ Reported	Corrected Rate
<u>1973</u>						
May - June	79	64%	123	18.8	37%	50.1
July - Aug	87	66	132	19.9	50	40
Sept - Oct	98	75	131	21.4	77	28
Nov - Dec	103	80	129	19.7	65	31
<u>1974</u>						
Jan - Feb	90	61	147	19.4	54	36
March - Apr	89	64	148	21.3	28	76

¹ Percentage of survey incidents recalled by respondents which respondent said were reported to the police.

APPENDIX K

San Jose Data

The data reproduced on the next two pages are from Table 4 of San Jose Methods Test of Known Crime Victims, (Statistics Technical Report No. 1), issued by the Law Enforcement Assistance Administration and the National Institute of Law Enforcement and Criminal Justice Statistics Division, June, 1972.

TABLE 4.—Incidents by month of occurrence by month reported in survey

Reported to police	Reported in interview														Not reported in interview
	Total	January	February	March	April	May	June	July	August	September	October	November	December	Month NA	
Total.....	292	22	11	18	15	22	22	27	20	27	28	26	27	27	102
January.....	22	12	1	1		1	1					1		4	12
February.....	17	4	3	3			1			1		1	1	3	10
March.....	21	2	4	10	1	2	1	1							8
April.....	26	2	2	3	11	3	2	1						2	8
May.....	25		1		1	11	1	6	1	1				3	8
June.....	26				2	3	13	2	1	3				2	10
July.....	27	1					2	14	6	1	1			2	9
August.....	23					2		2	2	4	3	1		2	9
September.....	22						1	1	1	12	3			4	10
October.....	27			1					2	3	17	1		3	4
November.....	29									2	4	19	2	2	5
December.....	27											3	24		9

TABLE 4A.—Incidents of assault by month of occurrence by month reported in survey

Reported to police	Reported in interview														Not reported in interview
	Total	January	February	March	April	May	June	July	August	September	October	November	December	Month NA	
Total.....	39	2	3	0	3	6	2	3	3	2	4	3	4	4	42
January.....	4	1	1									1		1	5
February.....	2		2												3
March.....	1					1									5
April.....	5				3	1								1	3
May.....	4					3									5
June.....	4					1	2	1							3
July.....	4	1						1	2						4
August.....	1									1				1	4
September.....	1										1				5
October.....	6								1	1	4				1
November.....	3											2		1	1
December.....	4												4		3

TABLE 4B.—Incidents of burglary by month of occurrence by month reported in survey

Reported to police	Reported in interview														Not reported in interview
	Total	January	February	March	April	May	June	July	August	September	October	November	December	Month NA	
Total.....	94	9	5	6	5	5	8	8	4	11	6	10	8	9	10
January.....	7	5												1	1
February.....	7	1	1							1			1	2	1
March.....	8		3	3	1		1								1
April.....	9	2	1	2	2		1							1	0
May.....	8				1	3	1	1						2	0
June.....	6				1	1	4								4
July.....	9						1	6	1	1					0
August.....	9					1			3	3	1			1	0
September.....	8							1		5	1			1	2
October.....	4										4				0
November.....	11									1		9		1	0
December.....	8											1	7		1

TABLE 4C.—Incidents of rape by month of occurrence by month reported in survey

Reported to police	Reported in interview														Not reported in interview
	Total	January	February	March	April	May	June	July	August	September	October	November	December	Month NA	
Total.....	30	4	0	1	1	3	4	4	2	0	4	3	3	1	15
January.....	3	3				1									0
February.....	3	2	1				1								1
March.....	1			1											1
April.....	2				1		1								1
May.....	2					2									2
June.....	2						2								1
July.....	4							3	1						0
August.....	2							1	1						3
September.....	2									1				1	1
October.....	3										2	1			2
November.....	3										1	2			3
December.....	3												3		0

TABLE 4D.—Incidents of robbery by month of occurrence by month reported in survey

Reported to police	Reported in interview														Not reported in interview
	Total	January	February	March	April	May	June	July	August	September	October	November	December	Month NA	
Total.....	61	2	0	7	3	5	3	4	5	10	7	3	8	4	19
January.....	4	4		1			1							1	4
February.....	2	1	1											1	1
March.....	6			5		1									1
April.....	4				3	1									2
May.....	6					2		2	1	1					1
June.....	5						1	1		3					2
July.....	3						1	1							3
August.....	6							2	1	1	1				1
September.....	6							1		3				2	0
October.....	8			1						2	5				0
November.....	4										1	1			1
December.....	7											2	6		3

TABLE 4E.—Incidents of larceny by month of occurrence by month reported in survey

Reported to police	Reported in interview														Not reported in interview
	Total	January	February	March	April	May	June	July	August	September	October	November	December	Month NA	
Total.....	68	5	3	4	3	3	5	8	6	4	7	7	4	9	16
January.....	4	4												1	2
February.....	3		3	2								1			4
March.....	5	2	1	1				1							0
April.....	6		1	1	2	1		1							2
May.....	5		1			1		2						1	0
June.....	9				1	1	4		1					2	0
July.....	7							3	1		1			2	2
August.....	5							1	3		1				1
September.....	5					1				3	1				2
October.....	6								1		2			3	1
November.....	8									1	2	5			0
December.....	5											1	4		2

APPENDIX L

DATA SUMMARY, 1974 SURVEY

	No. incidents against Portland city residents		No. incidents occurring in the city		no. of multiple victims of crimes in city
	Weighted	Unweighted	Weighted	Unweighted	Weighted
Rape	3.5	3	5.35	4	2.6
Robbery	21.8	31	19.1	30	.6
Assault	91.0	95	89.8	95	24
Burglary	250.0	276	250.0	277	-

The weighted numbers should be used to calculate incident rates. The weighted number of incidents plus the weighted number of additional victims should be used to calculate the victimization rate which is most comparable to official police statistics.

The burglary data for Portland residents (250) and the number within the city (250) is the same only by coincidence. Eleven of the 276 burglaries against Portland residents occurred when the persons lived outside the city. And, twelve of the burglaries within the city were committed against persons who moved to the suburban areas after the burglary, and were interviewed as residents of the suburban areas. The burglary figures for Portland city residents include eleven burglaries that occurred in the respondent's place of business rather than his home. These eleven were omitted from the comparison with the 1971-72 survey because commercial burglaries were not counted in the earlier survey.

END