ATLANTA HIGH IMPACT PROGRAM
PROJECT EVALUATION
DECEMBER 1, 1974 - NOVEMBER 30, 1975

ANTI-ROBBERY
75-DF-04-0004

ATLANTA CRIME ANALYSIS TEAM
JANUARY, 1976

TABLE OF CONTENTS

LIST OF TABLES

Introduction

The City of Atlanta, as most urban American cities, experienced a rapid increase in street crime during the latter part of the 1960's. One of the most serious crimes in terms of escalating intensity and societal detriment was the crime of robbery. For the robbery victim, the offense constituted not only the loss of property but the possibility of physical harm; and, in many cases, the deprivation of life. In fact, from 1969 to mid 1972, fifty-five Atlantans died as a result of a robbery offense.

The selection of Atlanta as an Impact City and the subsequent availability of LEAA funding provided the necessary financial assistance to plan and implement a viable robbery reduction program. Consequently, in April, 1973, the Atlanta Bureau of Police Services implemented a robbery reduction program, the Anti-Robbery/Burglary project. While this project was intended to impact on both robbery and burglary, more positive accomplishments were achieved in reducing certain categories of robberies.

With the termination of the Anti-Robbery/Burglary project in April, 1974, the City of Atlanta applied for LEAA funding in order to continue those project elements that proved successful in decreasing open space and commercial robberies. As a result, the City received the Anti-Robbery grant award on August 16, 1974 with actual project implementation occurring in the latter part of November, 1974.

This report represents an evaluation of the Anti-Robbery project, grant number 75-DF-04-0004. The report encompasses the first full year of project activity from December 1, 1974 through November 30, 1975. As its primary intent, the evaluation report documents the project's progress in accordance to the achievement of prescribed project goals and objectives.

The respective goal statement for the first year of the project period is: to achieve a ten percent reduction in commercial robberies and a five percent reduction in open space robberies. The project objectives are: (1) obtain a minimum of 250 operations a month; (2) obtain a minimum of 25 on-site apprehensions a quarter; and, (3) obtain a conviction rate of 90 percent for Anti-Robbery on-site apprehensions for commercial and open space robberies. As a secondary consideration, the report identifies those project changes or modifications that exhibit a determination of project effectiveness.

In addition to the current project evaluation, the report provides an overview of the Atlanta experience in applying the "Anti-Robbery Approach" to crime reduction. In essence, from an evaluation perspective, the crime reduction achievement of the current Anti-Robbery project cannot be segregated in respect to prior project contributions. The report, therefore, provides an explanation of prior robbery reduction projects and an analysis of all robbery data. The suggested time frame for this purpose extends from April, 1973, the beginning date of the Anti-Robbery/Burglary operation, through November, 1975.

Summary of Findings

The interim project goals of a 10 percent decrease for commercial robberies and a 5 percent decrease for open space robberies for the first year of project operations were exceptionally achieved. Baseline data (December, 1973 - November, 1974) represented 1,159 commercial and 1,994 open space robberies. For the comparison project period, 745 commercial and 1,771 open space robberies were reported to the Atlanta Police Bureau. These crime figures account for an absolute decrease for the target crimes of 35.7 percent for commercial robberies and 11.2 percent for open space robberies.

In addition to project goals, two primary operational objectives were established: 1. Achieve 250 field operations for each month; and, 2. Obtain 25 on-site apprehensions for each quarter of project activity. For the 12 month period, the AR project conducted a total of 7,013 field operations or an average of 584 operations per month. For on-site apprehensions, project personnel arrested a total of 184 robbery offenders or an average of 46 for each quarter.

These combined project successes illustrate a drastic impact on total robbery statistics in the City of Atlanta. Total robberies for the baseline period represented 4,224 offenses while total robberies for the project period were 4,068. This decrease is a net reduction of 3.7 percent. This reduction represents the first annual decrease since the twelve month period ending November, 1971.*

The exceptional goal and objective accomplishments of the Anti-Robbery project are, in part, predicated on certain internal operating procedures:

---

* The total robbery decrease for the December - November, 1971 period compared to December - November, 1970 period was two tenths of one percent.

1. The implementation of TAC equipment as a supplement to stake-out operations has enabled a greater number of field assignments. As an example, during April, May, and June of 1975 (last quarter before TAC implementation), an average of 483 field operations were conducted each month. During August, September, and October of 1975 (first full quarter after TAC), an average of 664 field operations were conducted each month;

2. The development and implementation of a viable personnel selection process has enabled project supervisors to select Bureau personnel who are best qualified for the AR assignment;

3. An intensive training program in conjunction with constant retraining established a high degree of police professionalism within the AR Unit;

4. A low personnel turnover rate within the project exhibits continuity in retaining qualified and experienced personnel;

5. The utilization of overtime positions provide the Anti-Robbery Unit with a ready reserve of experienced personnel when a vacancy does occur within the project. In addition, all overtime personnel are selected on the same criteria as regular AR detectives.

Project Description

The Anti-Robbery project, as it operates in the Atlanta environment, incorporates two interrelated law enforcement concepts--apprehension and deterrence. As an immediate response, the Anti-Robbery approach effectively removes the criminal offender from the environment through the process of apprehension, arrest, and conviction.* The resultant benefit is an absolute decrease in the offender population in the target area.

The second benefit that is derived from Anti-Robbery applications is the crime deterrent effect on criminal behavior. This concept simply implies that as the risk of apprehension is increased, the potential offender's incentive for criminal activity is reduced. The extent and magnitude in achieving the deterrent factor is therefore directly related to and dependant upon the success of offender apprehensions. In combination, the apprehension and deterrence factors provide both immediate and long term solutions for robbery reduction.

In order to achieve its robbery reduction purpose, the AR project has traditionally employed two basic field techniques. For commercial robberies, stake-out teams are assigned in or near commercial establishments in identified high risk areas. For open space robberies, decoy teams are placed in areas which display a high rate of open space/pedestrian robberies. All assignments are made on the basis of current data analysis with the intent of correlating assignments to the time and place of robbery occurrences.

The stake-out component of Anti-Robbery is typically a two man team that is assigned to a commercial establishment. The

---

* On site apprehension results in a higher conviction rate. Therefore, Anti-Robbery apprehension as opposed to other police methods produce greater net results, i.e., incarceration of offenders.

place of assignment is statistically correlated to specific businesses within a geographical area that display a high propensity for commercial robberies.

Generally, the stake-out team is located within the actual place of business. In order to conceal themselves, the team utilizes storerooms or such other areas that are barred from customer traffic. As a prime necessity, the room is equipped with a one way mirror. In these instances, the stake-out team relies upon their own visual observation of the anticipated robbbery site (the place of cash transaction). Where store facilities are limited, however, the team locates in an outside area that is in close proximity to the target. When outside placement is necessary, a signaling system is used to alert police personnel of the robbery. The most common method for a signal device is a flashing light that is attached to the exterior of the building but is activated by the store operator from a location near the cash register.

Since the stake-out procedures rely upon the elements of concealment and surprise, the teams utilize unmarked vehicles (automobiles or vans)when commuting to and from the assignment. Ordinary street clothing is worn until the team is positioned within the business. Once inside, personnel change into police uniforms or jumpsuits. In addition, one stake-out detective is required to wear a bullet-proof vest. When properly positioned in the store, the team leaves their location only upon completion of the assignment or during the course of a robbery.*

The decoy component which consist of a five or six man team places Anti-Robbery detectives in areas that display a high rate of pedestrian robberies. In conducting decoy operations, one member of the team assumes the role of a potential robbery victim. To accomplish this deceptive task, the Anti-

---

* If aggravating circumstances exist, the team is permitted to reveal their identity. However, the team cannot jeopardize their position to apprehend persons for offenses such as shoplifting. To do so, would compromise the AR purpose.

Robbery project provides a variety of suitable street clothing and make-up kits whereby the decoy can portray various social and economic character roles. Other members of the team are used as covermen and are responsible for insuring the protection of the decoy victim should a robbery occur. The covermen are also responsible for apprehending the robbery assailant. To accomplish this, the covermen place themselves in locations strategic to the reference point of the decoy. When possible they are positioned in such a way as to block all avenues of escape.

Project History

The application of a crime specific approach to robbery reduction as exemplified in the Atlanta Anti-Robbery project has not progressed without change or modification, but rather the concept has evolved in response to both internal and external environmental factors and constraints. The inclusion of the project history in this evaluation report is intended to document the changing project parameters. In conjunction with the data evaluation, the historical perspective will provide an in depth understanding of the Anti-Robbery concept and its Atlanta application. For this purpose, the project history first identifies the prevailing robbery problem prior to the advent of Anti-Robbery methods.

As Atlanta entered the 1970's, the crime of robbery had become a perceptible concern not only for city officials and business persons but also for all members of the community. For a sixteen year period (1955-1970) with the exception of 1960 and 1965, the incidence of robbery had marked an annual increase over each preceding year. An even more significant problem was that the trend or rate of increase was escalating. For the five year calender period prior to the Anti-Robbery/ Burglary project (1968-1972), total robberies in the City increased by 263 percent. If an adjusted calender year is used that coincides with the actual month of project implementation for the original ARB project (April, 1968 through March, 1973), total robberies in the City increased by 315 percent (874 to 3,624). In the twelve month period preceding the Anti-Robbery/ Burglary project, the number of robberies increased by a total of 1,567 incidences or a 76 percent increase.

The selection of Atlanta as an Impact City in 1972 and the subsequent availability of LEAA funding provided the financial resources that initiated the planning process for a crime specific

approach for robbery reduction. In anticipation of applying for federal funding of a robbery program but prior to the actual grant application, a pilot project was implemented in order to field test the effectiveness of stake-out tactics. The pilot program which contained a complement of 12 field detectives concentrated on the apprehension of commercial burglary and commercial robbery offenders. As the pilot project proved successful in apprehending target offenders, a grant application was submitted which would provide for the application of additional resources for the stake-out concept.

With the notification of the ARB grant award on February 12, 1973, and the subsequent availability of $795,449 in federal assistance (total one year operation budget of $1,070,139), the Bureau implemented the first of what was to eventually consist of 3 operating phases of the Anti-Robbery project.

Phase I
(April 1, 1973 - April 14, 1974)

The Anti-Robbery/Burglary project represented the first concentrated effort by the Atlanta Bureau of Police Services to employ a crime specific approach to robbery reduction. As the project name implies, however, the scope of the program incorporated two target crimes--robbery and burglary. Essentially, this two-directional approach represents the primary distinguishing factor between Phase I and subsequent phases of Anti-Robbery.

The multiple goal statement of ARB necessitated a division of project resources whereby different field strategies could be implemented for goal achievement. The following chart, however, illustrates that robbery reduction efforts were paramount during this phase.

Target Crime	Decoy	Stake-out	Total
Robbery	996 (95%)	2820 (68%)	3816 (74%)
Burglary*	53 (5%)	1302 (32%)	1355 (26%)
Total	1049	4122	5171

For the project period, 3,816 field operations or 74 percent of all ARB activity was dedicated toward robbery reduction. Decoy operations (95%) were almost exclusively directed toward open space robbery reduction while robbery stake-out represents 68 percent of all stake-out activity.

Even with a concentration on robbery reduction, the consequences of dual goals can be perceived as limiting overall robbery reduction impact. Two indications of this limiting

* Although the ARB project goal incorporated both commercial and residential burglaries, operational efforts were concentrated on commercial burglaries.

factor are demonstrated below:

1. In the ARB project, field assignments were predicated on the basis of crime data analysis. Daily crime reports were processed in an effort to identify high burglary locations and robbery locations. The responsibility for two target crimes precluded an indepth data analysis of any one crime category. This fact can best be exemplified in light of aggregate figures. For the project period (Phase I), there was a total of 20,436 target crime reports processed by the ARB project analyst. Of this total, robberies constituted 4,248 or 21 percent with burglary accounting for 16,188 or 79 percent. This volume of target crimes, especially weighted toward burglary, prohibited an indepth assessment of specific robbery crime occurrences.

2. The multiple crime reduction direction of the project limited a continuous concentrated effort on any specific target area. In fact, emphasis toward a particular crime category changed on a quarterly basis. As an example, the first quarter of ARB operations concluded with the arrest of 51 robbery offenders compared to 8 burglary arrests. However, during the second quarter project resources were directed more specifically toward burglary offenses. As a result, second quarter arrests reflected 23 burglary apprehensions and 16 robbery arrests. At the conclusion of the third quarter, yet another reversal in project direction is noted with 24 robbery arrests and only two burglary arrests for the period. This vacillation in target crime emphasis prohibited a maximum impact in any specific area.

In retrospect, the ARB project represented a learning process and, while project goals were not achieved, a substantial decrease in the robbery rate did occur. By comparing the 4th quarter of base line data to the 4th quarter of project data, the rate of increase for robberies was reduced from 112 percent to 10.4 percent. In comparing the one year base period to the one year project period, the rate of increase for robberies decreased from 76 percent to 17 percent.

During the final quarter of ARB operations (January - March 1974), a grant application for an Anti-Robbery continuation project was submitted by the City. Based on evaluation results, the continuation grant narrowed the scope of project impact specifically to open space and commercial robberies. The termination of ARB on April 14, 1974 marked the end of Anti-Robbery/ Phase I.

Phase II
(April 14, 1974 - November 20, 1974)

Due to administrative procedures between intergovernmental agencies, the implementation of the Anti-Robbery continuation grant did not immediately succeed the expiration of ARB. For this reason, Phase II represents an interim period with funding provided solely through city sources. The transition into Phase II, however, initiated a major change in the direction of the Anti-Robbery program. Within the guidelines of ARB but with a focus on the continuation project, Anti-Robbery Phase II directed all field activity toward open space and commercial robberies. Thus, the project incorporated those elements which had proven most successful during the initial ARB program.

As a temporary modification, the second phase of ARB did not allow for the use of overtime personnel. In Phase I, overtime was allocated for both regular project personnel and other Bureau police officers. During ARB, regular project personnel were scheduled to work one overtime day per a fourteen day period. In addition, the ARB project guidelines provided for the assignment of fifty Bureau personnel for one day of each week. Appendix A contains an illustration for the effective level of staffing for each phase of AR activity.

In review of the project modifications occurring during this period, the net effect on applied project resources which were directed to robbery reduction was negligible. In actual application, the number of police personnel (42) who were assigned to robbery oriented field assignments remained constant throughout both project periods. Additionally, in comparing project periods there was only a 3 percent deviation in the number of actual field operations.* Appendix B contains an activity summary for each phase of ARB/AR.

---

* Based on monthly averages.

Phase III
(November 20, 1974 - Present)

The City of Atlanta received notification of grant award for the Anti-Robbery continuation project, grant number 75-DF-04-0004, on August 16, 1974 with actual implementation occurring on November 20, 1974. Funding of the AR project provided the City with $1,828,371 in federal assistance for the two year project period with a total operating budget of $2,082,766 (Federal assistance plus City matching funds). With the project goals limited to commercial and open space robberies and with the reinstatement of overtime procedures, this phase of AR activity represents the most concentrated effort, to date, for robbery reduction.

The project goals for Anti-Robbery stipulated a 20 percent reduction for commercial robberies and a 15 percent reduction for open space robberies by the end of the two year grant period. To achieve the goal statement, the AR project's personnel complement included: 1 Captain (Project Director), 2 Lieutenants, 4 Sergeants, 42 detectives, 1 crime analyst, and a secretary. As noted, overtime for both AR personnel and Bureau personnel was alloted for the continuation project, however, the actual availability for overtime was segmented between the first and second year. For the first year, overtime was established at the rate of 50 extra man days per week. For the second year, the overtime allocation was limited to 25 man days per week. However, all regular AR personnel were scheduled to work one extra day per week for the total two year period. In respect to overtime procedures, the first year has an equivalent staffing

level of 60.4 detectives while for the second year, the equivalent level was 55.4%.*

The interim period between grant award and grant implementation was used to accomplish two important administrative tasks--personnel selection and training. A commitment to provide a formalized process for these procedures was, in fact, contained in the grant award. Consequently, the personnel selection criteria and procedures that were developed by the AR project has become a model within the Bureau of Police Services. A complete copy of the personnel selection process which includes the oral questionnaire is included in Appendix C. The actual selection process for Anti-Robbery personnel occurred from October 17 through the 27th. After interviewing approximately 300 Bureau personnel, permanent assignments were made for both regular and overtime positions.

During the period of November 11th through the 19th, Anti-Robbery project personnel received a total of 56 hours of training. The training program consisted of 16 hours of Firearms Training (shotgun and handgun) and 40 hours of classroom curriculum. Of the 40 hour curriculum, one eight hour period was directed toward actual robbery simulation training. Other training activities for the project period include 2-10 hour classes for decoy disguise and make-up and outside training trips by Anti-Robbery supervisory personnel. The training trips enabled supervisory personnal to observe similar robbery reduction techniques that are employed by other municipalities.

During July, 1975, the Anti-Robbery project implemented the use of TAC equipment in order to supplement the project's

---

* Illustration includes personnel of detective status only. Equivalent staffing level equated the number of personnel available considering a normal 40 hour work week. Therefore, while 42 detectives were assigned to the AR project, the use of overtime for the 42 detectives plus 50 overtime positions for the first year is the equivalent of having 60.4 detectives who are working 40 hours per week.

stake-out activities. The TAC equipment which is essentially a mobile alarm system enabled the project to expand its personnel utilization. As an illustration, the project by using stake-out techniques, would require 20 detectives for 10 assignment locations. This indicates that traditionally two detectives are assigned to one stake-out location. By employing TAC techniques, only six detectives are required in order to monitor ten locations. In addition, AR detectives who are monitoring the TAC equipment can provide physical observation of potential targets where the TAC equipment is not employed. As an extra benefit, plans are now being developed whereby TAC personnel will receive robbery alarm signals that are received by the Bureau's central alarm system.

In accordance with project guidelines, AR personnel received one week of training during the latter part of October, 1975. The training program which was similar to the initial training session provided a retraining program for regular personnel while allowing new personnel the benefit of the AR curriculum. The month of October also marks a decrease in the overtime positions. As stipulated in the AR grant, overtime positions decreased from 50 to 25 extra mandays per week. Appendix A provides an illustration of overtime allocation for Phase III.

Evaluation Analysis; Anti-Robbery Project

Project Goals

Two goals have been established against which to measure the success of the Anti-Robbery Project at the end of two years of the project operation. These are:

1. 20% decrease in commercial robberies;
2. 15% decrease in open space robberies.

Interim goals at the end of the first year of project operation include a 10% reduction in commercial robberies and 5% reduction in open space robberies.

This evaluation report intends to analyze the project's operation in meeting the interim goals.

The prior evaluation report had not resolved the controversy of the selection of an appropriate base line period against which the project's operation could be measured. Consequently the evaluation report of the Anti-Robbery Project (June, 1975, prepared by Georgia Tech) included the one year period from April, 1974, to March, 1975 against a base line data from April, 1973 to March, 1974.

However, federally funded Anti-Robbery project did not get underway in Atlanta until December, 1974 even though Anti-Robbery operations were under taken both under the original Anti-Robbery/Burglary program and a separate city funded operation.

This evaluation, therefore, will cover the twelve months from December, 1974 to November, 1975, during which full scale Anti-Robbery operation was made possible under the federal grant. The evaluation, however, will proceed under the assumption that the project was fully operational as of December, 1974

with no provisions being made for the start-up time. Prior experiences gained under the Anti-Robbery/Burglary and the City operations should have provided the experience needed to make the Anti-Robbery project operational as of December, 1974.

The base line data will therefore be from December, 1973 to November, 1974 and is given in the following table.

Table I
Base Line Data; December, 1973 to November, 1974

	Comm.	Resid.	Open Space	Misc.	Total
December 1973	137	70	186	21	414
January 1974	134	58	220	55	467
February	88	50	166	33	337
March	90	44	186	25	345
April	78	36	153	35	302
May	67	40	152	52	311
June	67	39	132	64	302
July	86	45	176	32	339
August	75	44	183	19	321
September	71	31	149	44	295
October	95	50	149	36	330
November	171	67	142	81	461
Total	1,159	574	1,994	497	4,224

Data for the twelve months of the project's operation is given in the following table.

Table II
Project Data; December, 1974 to November, 1975

	Comm.	Resid.	Open Space	Misc.	Total
December 1974	145	79	212	111	547
January 1975	86	80	143	94	403
February	64	44	126	102	336
March	69	54	116	109	348
April	48	36	109	98	291
May	38	37	133	97	305
June	48	52	148	80	328
July	71	54	162	81	368
August	34	74	133	76	317
September	33	68	166	12	279
October	39	46	162	7	254
November	70	52	161	9	292
Total	745	676	1,771	876	4,068

To measure the performance against the interim goals of 10 and 5 percent reductions in commercial and open space robberies, we have:

1. Number of commercial robberies in the base period.. 1159

   Number of commercial robberies in the project period 745

   Performance measure = $\frac{(1159 - 745)}{1159}$ 100 = 35.7%

Against an interim goal of 10% reduction the actual reduction in commercial robberies during the project period was 35.7%.

2. Number of open space robberies in the base period.. 1994

   Number of open space robberies in the project period..... 1771

$$\text{Performance measure} = \frac{(1994 - 1771)}{1994}\ 100 = 11.2\%$$

Against an interim goal of 5% reduction, the actual reduction during the project period in open space robberies was 11.2%. The following table summarizes the change in all categories of robbery between the base and project periods.

Table III

	Base Period	Project Period	Change	Remark
Residential	574	676	17.8	Not addressed under project
Commercial	1159	745	-35.7	Addressed under project
Open Space	1994	1771	-11.2	Addressed under project
Miscellaneous	497	876	76.3	Not addressed under project
Total	4224	4068	3.69	Partially addressed under project

The captioned table illustrates that those categories of robberies for which the Anti-Robbery project was specifically formulated, namely commercial and open space, showed significant decreases while the other two categories, residential and miscellaneous which did not fall under the purview of the Anti-Robbery project showed substantial increases.

Statistical Measure

Statistical measure of significance is an essential part of any form of evaluation that revolves around crime reduction goals. To this end, the number of commercial and open space robberies committed in the City during the project period will be statistically tested against the number of incidences during the base period to see if the reduction is a long term effect caused by some external factors which in our case is the Anti-Robbery project.

Analysis of variance test is performed on the data with the critical F being calculated from the formula:

$$\therefore F = \frac{n\left\{\frac{1}{(r-1)}\sum_{i=1}^{r}(\bar{x}_i - \bar{\bar{x}})^2\right\}}{\frac{1}{r}\left[\frac{1}{(n-1)}\sum_{j=1}^{n}(x_{1j} - \bar{x}_1)^2 + \frac{1}{(n-1)}\sum_{j=1}^{n}(x_{2j} - \bar{x}_2)^2\right]}$$

where the numerator is the variance of the sample means and the denominator is the pooled variance of the two periods data.

The sample statistics as calculated from Table I and II for commercial robberies are:

	Base Period	Project Period
Size of sample	12	12
Mean Value	96.58	62.08
Variance	1001.58	898.742

For the sample means, the statistics are:

Mean 79.33

Variance 595.12

Therefore $F = \frac{12(595.12)}{950.16} = 7.52$

The critical $F_{.05}$ with 1,((r-1)) and 22,(r (n-1)) degrees of freedom in the numerator and denominator respectively is 3.49. Since the calculated F exceeds the critical F, the difference in the average number of commercial robberies committed between the base and the project periods is too large to be explained by mere chance alone.

Similarly for open space robberies we have the sample statistics as:

	Base Period	Project Period
Size of sample	12	12
Mean Value	166.167	147.583
Variance	564.98	706.914

For the sample means the statistics are:

Mean 156.875

Variance 192.682

Therefore $F = \frac{12(192.682)}{635.947} = 3.648$

Since this F value of 3.648 is also above the critical F the same conclusion for open space robberies can be made - that is the difference in the average number of open space robberies committed between the two periods is too large to be explained by chance flucuations alone.

Having established that the Anti-Robbery project has made significant impact in reducing commercial and open space robberies in the twelve months of its operation, analysis needs to be done to evaluate the long term impact of the project in reducing robberies in Atlanta. In order to study the long term Impact of the project, it is imperative that data on incidences of robberies going back several periods prior to the base period, be analyzed. The following table gives the incidences of robberies broken down by categories beginning April of 1972.

Table IV

	Comm.	Resid.	Open Space	Misc.	Total
April 1972	93	6	39	70	208
May	72	13	45	59	189
June	134	16	32	101	283
July	151	11	46	132	340
August	148	10	42	133	333
September	106	9	61	131	307
October	107	21	44	94	266
November	115	17	27	141	300
December	136	26	47	148	357

Cont'd.

cont'd

	Comm.	Resid.	Open Space	Misc.	Total
January 1973	141	64	153	51	409
February	96	39	140	7	282
March	77	30	204	39	350
April	65	22	76	146	309
May	64	34	140	31	269
June	88	21	176	14	299
July	114	31	212	11	368
August	105	28	194	23	350
September	120	29	185	25	359
October	106	26	181	32	345
November	131	41	186	28	386
December	137	70	186	21	414
January 1974	134	58	220	55	467
February	88	50	166	33	337
March	90	44	186	25	345
April	78	36	153	35	302
May	67	40	152	52	311
June	67	39	132	64	302
July	86	45	176	32	339
August	75	44	183	19	321
September	71	31	149	44	295
October	95	50	149	36	330
November	171	67	142	81	461
December	145	79	212	111	547
January 1975	86	80	143	94	403
February	64	44	126	102	336
March	69	54	116	109	348
April	48	36	109	98	291
May	38	37	133	97	305
June	48	52	148	80	328
July	71	54	162	81	368
August	34	74	133	76	317
September	33	68	166	12	279
October	39	46	162	7	254
November	70	52	161	9	292

Any form of evaluation of crime reduction programs approached from the perspective of a long term impact must at the onset assess quatitatively the magnitude of the problem prior to the initiation of the project. As stated earlier, this involves using several periods of data and establishing a trend

line, using this trend line to extrapolate the projected rate of growth during the project period (in the absence of any special crime reduction measures) and then using the projections to measure the net impact of the project.

With the data from Table III six time series models using the least square regression analysis method were formulated. The algebric formula and the numeric values of the linear models are detailed in the evaluation methodology.

Three of the six time series models were used to estimate the rate of increase (decrease) of total, commercial and open space/miscellaneous robberies prior to project initiation (April 1972 to November 1974) and to project the rate of growth during the project period (December 1974 to November 1975). The other three time series models are used to evaluate the impact of the project for the twelve months (December, 1974 to November, 1975) and also to evaluate its impact on the entire 44 months under consideration.

It is imperative that certain explanations be provided regarding the use of data.

1. From April of 1973, some form of concentrated Anti-Robbery efforts were undertaken by the Atlanta Bureau of Police Services. Therefore, in order to provide for twelve months of data during which no special AR operations existed, April of 1972 was selected as the starting point.

2. For the trend analysis, open space robberies are analyzed along with miscellaneous categories. Prior to May, 1973, definitional disparity had existed in classifying these two categories and hence it was impossible to separate the two prior to that period.

The percentage changes as calculated from the models are summarized.

	Average Annual rate of change prior to the project	Average annual rate of change after the project
Total robbery	11.4%	3.9%
Commercial	- 7.1%	-14.2%
Open Space/Misc.	16.2%	10.0%

Thus we see from the table that the Anti-Robbery project during this period was able to slow down considerably the rate of increase in total robberies. This was possible inspite of the fact that those specific categories in which the project did not concentrate its efforts, residential and miscellaneous, showed increases of 17.8% and 79.1% respectively during the twelve months of the project period.

Prior to initiation of the project in December, 1974 commercial robberies were already showing a downward trend. The project's operation accelerated the downward trend increasing the average rate of decrease to 14.2% annually.

Open space and miscellaneous categories also showed a decrease from 16.2% to 10% anually.

Project Objectives

Apart from the quantitative reduction goals, certain objectives were identified in the project. These are:

1. Obtain at least 250 operations per month (stake-out and decoy).
2. Obtain at least 25 on site apprehension by AR for commercial and open space robberies per quarter.
3. Obtain a conviction rate of 90 percent for Anti-Robbery on-site apprehensions for commercial and open space robberies.*

The source data for the captioned objectives are given below.

	No. of Operations			On site Apprehension		
	Decoy	Stakeout	Total	Decoy	Stakeout	Total
Dec. 1974	26	537	563	22	6	28
Jan. 1975	34	489	523	23	3	26
Feb.	40	456	496	10	2	12
Mar.	47	454	501	12	4	16
Apr.	60	412	472	23	-	23
May	143	377	520	25	-	25
June	133	323	456	1	-	1
July	140	480	620	10	1	11
Aug.	90	549	639	7	1	8
Sept.	58	577	635	15	1	16
Oct.	32	686	718	2	1	3
Nov.	32	838	870	12	3	15
Total	835	6178	7013	162	22	184

* Due to inadequate data on conviction rates, it was not possible to measure this performance objective. The evaluation report for the 18 months of AR will, however, contain conviction data for the total project period.

Objective 1 requires 250 a month (or 3000 for the twelve months) operations. There were a total of 7013 operations during the project period.

Objective 2 requires 25 on-site apprehensions per quarter (or 100 for the twelve months) for commercial and open space robberies. Against this stated objective apprehensions totaled 184 during the project period. Of these 88% were by decoy operations and 12% by stake-out operations.

The low percentage of arrests made by the stake-out operation coupled with a significant reduction in commercial robberies, may lead one to believe that stake-out operations were more successful as a preventive measure. To test this hypothesis, a correlation analysis was done using the number of stake-out and decoy operations and the number of potential incidences that were prevented by the units. This was calculated by deseasonalizing the project number of incidences during the project's operation and subtracting the actual number of incidences.* The resulting correlation matrix was:

	Decoy Operation	Stakeout Operation	Comm. Rob. Prevented	Oper. Rob. Prevented
Decoy Operation	1	-	-	-
Stake-out Oper.	-.567	1	-	-
Comm. Robbery Prevented	-.156	.332	1	-
Open Space Rob. Prevented	-.088	.217	.273	1

The sign of the correlations between the number of stake-out operations and the number of commercial robberies prevented is as hypothesized - positive even though the strength of correlation is not significantly strong. However, only twelve months of data were available for the analysis. It is anticipated that the next evaluation analysis would establish this relationship

* Details of this calculation is given in the methodology section.

more firmly. A number of other correlations were looked at, but none of them showed any significant relationship. This may to a considerable extent be attributed to the short period of data being analyzed. The next evaluation report will hopefully give more meaningful insights into the project's operation.

Conclusions

1. Data analysis shows that the twelve months during which the project was operational, quantitative goals and objectives were not only met but were exceeded;

2. The project made long term impact not only in reducing the trend in those categories of robberies for which the project was specifically formulated but also considerably slowed the rate of increase of total robberies. This was possible inspite of the fact that the other two categories of robbery, residential, and miscellaneous increased by 17.8% and 79.1% respectively;

3. Concentrated efforts in reducing residential and miscellaneous robberies coupled with the present AR operation would definitely reverse the trend of total robberies;

4. Initial analysis shows that while decoy operations were very successful in apprehending and reducing open space robberies, stake-out operations served more as a preventive measure.

Appendix A

Personnel Allocation

This appendix is included in order to illustrate the effective personnel level during each phase of the Anti-Robbery project. The computation of personnel resources does not include supervisory personnel but only those persons actually conducting the stake-out or decoy assignment. In order to achieve a common base, all figures are reduced to hours per week. The hours per week are then equated to a standard 40 hour week.

Phase I

42 detectives	- 40 hours per week	1680
42 detectives	- 1 overtime day (8hr.) per a 14 day period	168
50 overtime personnel, 8 hours per a 7 day period		400
		2248

The effective manpower level for Phase one is 56.2 detectives.

Phase II

Phase two did not allow for overtime, therefore, the the effective manpower level is 42 detectives.

Phase III

First Year

42 detectives	- 40 hours per week	1680
42 detectives	- 1 overtime day (8hr.) per a 7 day period	336
50 overtime personnel, 8 hours per a 7 day period		400
		2416

The effective manpower level for the first year of phase three is 60.4 detectives.

Second Year

42 detective	- 40 hours per week	1680
42 detective	- 1 overtime day (8hr.) per a 7 day period	336
25 overtime personnel, 8 hours per a 7 day period		200
		2216

The effective manpower level for the second year of Phase three is 55.4 detectives.

Appendix B

Activity Summary

The summary activity appendix provides an instrument by which to compare each phase of the ARB project. The summary compares the target crime responsibility for each phase and correlates manpower. In addition, operational and arrest data is provided by category and sub-category. In that project periods differ, each category is illustrated on a monthly basis which provides a consistent level of comparison. All data is based on full months of activity. Where overlapping occurs, the specific month has been deleted from the summary. In this perspective, the applicable periods for each phase is as follows:

Phase I April, 1973 - March, 1974
Phase II May, 1974 - October, 1974
Phase III A December, 1974 - September, 1975
Phase III B November, 1975

A cost analysis which was conducted by Georgia Tech is also included for each phase of the AR project. The applicable time periods for the cost analysis are based on full months as well as partial months of project activity.

	Phase I		Phase II	Phase III	
	Total	Robbery		A	B
1. Total crime responsibility	20436	4248	1402	2084	231
1.a. Mon. Avg.	1703	354	234	208	231
2. Effective Staffing Level	56	42	42	60	55
3. Total No. of Operations	5171	3816	1848	5425	870
3.a. Mon. Avg.	431	318	308	543	870
4. Decoy Operations	1049	996	668	771	32
4.a. Mon. Avg.	87	83	111	77	32
5. Stake-out Operation	4122	2820	1180	4654	838
5.a. Mon. Avg.	344	235	197	465	838
6. Total No. of Apprehensions	217	169	129	166	15
6.a. Mon. Avg.	18.1	14	21.5	16.6	15
7. Decoy Apprehension	160	153	122	148	12
7.a. Mon. Avg.	13.3	12.75	20.3	14.8	12
8. Stake-out Apprehensions	57	16	7	18	3
8.a. Mon. Avg.	4.75	1.3	1.2	1.8	3

ALLOCATION TO ROBBERY BY PHASES-SUMMARY

	Phase I[1] (4/73 thru 4/74)	Phase II[2] (5/74 thru 11/11/74)	Phase III[2] (11/12/74 thru 4/75)	Total
Salaries	$661,200	$346,300	$442,900	$1,470,400
Travel	800	500	400	1,700
Equipment	34,600	19,800	16,700	71,100
Supplies & Operating Expenses	14,800	12,400	11,900	39,100
Total	$731,400	$379,000	$471,900	$1,582,300
Average Monthly Cost	$ 56,262	$ 58,308	$ 85,800	$ 63,292
Number of Operations[3]	4,140	2,192	2,735	9,067
Average No. of Operations per month	318	337	497	363
Cost per Operation	$ 177	$ 173	$ 173	$ 175
Arrests[3]	205	133	109	447
Average No. of Arrests per month	15.8	20.5	19.8	17.9
Cost per Arrest	$ 3,568	$ 2,850	$ 4,329	$ 3,540
Arrest per Operation	.050	.061	.040	.049

[1]Includes Robbery Stakeout and Decoy but not Burglary Stakeout Aspects of the Anti-Robbery/Burglary Project.

[2]Includes Robbery Stakeout and Decoy

[3]From Impact Evaluation Data

33-A

ALLOCATION TO DECOY - SUMMARY

	Phase I (4/73 thru 4/74)	Phase II (5/74 thru 11/11/74)	Phase III (11/12/74 thru 4/75)	Total
Salaries	$249,900	$159,800	$ 55,500	$465,200
Travel	300	200	100	600
Equipment	9,200	5,600	2,200	17,000
Supplies & Operating Expenses	3,900	3,800	1,100	8,800
Total	$263,300	$169,400	$ 58,900	$491,600
Average Monthly Cost	$ 20,254	$ 26,062	$ 10,709	$ 19,664
Number of Operations	1,084	692	249	2,025
Average No. of Operations per Month	83	106	45	81
Cost per Operation	$ 243	$ 245	$ 237	$ 243
Arrests	189	126	91	406
Average no. of Arrests per month	14.5	19.4	16.6	16.2
Cost per Arrest	$ 1,393	$ 1,344	$ 647	$ 1,211
Arrests per Operation	0.17	0.18	0.37	0.20

33-B

ALLOCATION TO ROBBERY STAKEOUT - SUMMARY

	Phase I (4/73 thru 4/74)	Phase II (5/74 thru 11/11/74)	Phase III (11/12/74 thru 4/75)	Total
Salaries	$431,300	$186,500	$387,400	$1,005,200
Travel	500	300	300	1,100
Equipment	25,400	14,200	14,500	54,100
Supplies & Operating Expenses	10,900	8,600	10,800	30,300
Total	$468,100	$209,600	$413,000	$1,090,700
Average Monthly Cost	$ 36,008	$ 32,246	$ 75,091	$ 43,628
Number of Operations	3,056	1,500	2,486	7,042
Average No. of Operations per month	235	231	452	282
Cost per Operation	153	140	166	155
Arrests	16	7	18	41
Average No. of Arrests per month	1.2	1.1	3.3	1.6
Cost per Arrest	$ 29,256	$ 29,943	$ 22,944	$ 26,602
Arrests per Operation	0.005	0.005	0.007	0.006

Appendix C

Job-Related Aspects of the

A-R Selection Process

(1) The oral interview, section one, measures the respondants knowledge of the legal parameters associated with the A-R function. The section one questions are intended to display the respondants knowledge in respect to his legal responsibilities and rights, as well as, those of the offender.

(2) The oral interview, section two, is a verbal simulation of conditions which are likely to occur in the performance of the A-R job assignment. The respondant's reply to the questions measures his decision making abilities under field conditions. The respondant's approach to the situation, as well as, the decisiveness of his decision measures his capabilities in coping with the A-R assignment.

(3) In respect to the correlation between the oral interview and the A-R job assignment, the oral interview constitutes 50 percent of the selection scores.

(4) A review of the internal investigation records of potential A-R personnel is necessary to identify personnel who have previously used poor discretion in coping with stress situations. Due to the sensitive nature of the A-R assignment, the Bureau has the social responsibility of filling these positions with the most capable personnel available.

(5) A review of the applicant's previous performance ratings and attendance records is intended to select only those individuals who exhibit a positive job attitude and dedication toward their assignments.

(6) The previous training of potential A-R personnel is considered in respect to the greater performance potential of these individuals

Procedure for Selection of Anti-Robbery Personnel

(1) The Anti-Robbery Division will provide sufficient notification to all eligible applicants of all job vacancies.

(2) The applicants will complete a job request form at the Anti-Robbery office.

Job openings will be awarded based on the following criteria: (failure in any area may exclude the officer from this detail)

(1) Work experience- The officer must have completed his sixteen month probationary period. This indicates that at least theoretically the officer has exhibited satisfactory performance in the past.

(2) Attendance records- The importance of regular attendance is unquestionable if the officer is to perform his job. Attendance records will be examined and officers who exhibit chronic absenteeism patterns will be excluded.

(3) Personnel file- The internal investigations files on all applicants will be examined and officers with numerous complaints against them will be excluded. All complaints involving police brutality and improper use of firearms will be closely scrutinized, and may be grounds for exclusion.

(4) Performance rating- An evaluation survey will be sent to the officer's immediate superior officer which will solicit his opinion of the officer's past work performance, attitude, reliability, and capability to perform stake-out assignments.

(5) Previous training- Previous training and experience that is considered applicable to Anti-Robbery work will be considered. (examples: advanced weapons training, self-defense training, previous experience in stake-out operations)

(6) Oral interviews- An oral interview will be conducted by a board, composed of the superior officers of the Anti-Robbery Division, which will attempt to expose the officer's knowledge of the law, judgement and self restraint, degree of agressiveness, and moral convictions which might interfere with his job performance.

Oral Interview Format

The Anti-Robbery staff of superior officers held oral interviews for all officers applying for permanent or overtime positions with the AR unit.

Prospective applicants were graded on a scale of one to ten based on their knowledge or lack of knowledge, quick response, hesitation of response, or lack of response to questions among the following:

1. What are the legal and justifiable laws under which deadly force may be used?

2. Under what circumstances may a fleeing felon be shot, if any?

3. If you would be legally justified in shooting a robbery perpetrator, even though you could apprehend him without shooting, which would you do?

4. If a perpetrator completed the commission of a robbery and was escaping the scene with his back toward you and no life is in danger, would you, or would you not shoot him? If yes, why? If no, why?

5. If you were observing a cashier from a two-way mirror, and observed a subject walk to the cashier and lay a gun on the counter, then started a conversation with the cashier, how would you handle the situation from that point on?

6. If you were on a stake-out assignment, and the cashier had left the register momentarily, during which an unarmed subject took the opportunity to open the cash register to help himself, what action would you take?

7. If four shotgun armed perpetrators, all wearing masks, rushed into a store where you were the lone stake-out officer observing through a two-way mirror, and one of the perpetrators trained his shotgun at your observance mirror, and two pointed theirs at the cashier, while the fourth perpetrator stood at the entrance door with his shotgun trained at the entrance, what would you do?

8. If you observed a subject enter a store, then stood around the cashier as if though waiting for the customers to leave, while at the same time you observed the butt of a pistol in his rear pocket, when, and what action would you take?

9. If you observed a subject walk into a store, hand the cashier a piece of paper, which she reads and proceeds to hand the subject an extremely large amount of money from the register, what if any action would you take?

10. Does the Georgia Law require that a suspect be warned before the legal use of deadly force be used against him?

11. Have you any religious, moral, or mental objections to using deadly force if such force becomes absolutely necessary?

12. What is your understanding of entrapment?

13. Have you any objections to working long hours, confined to one location, and to either eating before duty or bringing your lunch with you?

14. Explain whatever shooting incidents that you have been involved in.

15. What approach to management would you take upon initial assignment to a store which you have never staked out before?

16. Would working with an officer of different race be objective to you?

17. What are the elements of a forcible felony?

18. Would a robbery perpetrator's color or race have any bearing on whether you would or would not use deadly force against him?

19. Have you ever worked regular or overtime with the Anti-Robbery Unit before?

20. What was your score on the pistol range?

The oral interview will also offer the review board an opportunity to question the officer concerning any incident that he has been involved in that could exclude him from this assignment. Attached is the oral interview rating form that will be used by the interviewer in evaluating the officer's responses.

Following the completion of the oral interviews, the review board members will rate each officer based upon the following weighted values:

1) Oral interview 50%

2) Performance rating 10%

3) Previous training 10%

4) Personnel file 20%

5) Attendance records 10%

NAME_____

Oral Interview Evaluation Form

I. Knowledge of Law

1. What are the legal and justifiable laws under which deadly force may be used?

____a. In defense of your own life.

____b. In defense of the life of another.

____c. To prevent the commission of a forcible felony.

2. Under what circumstances may a fleeing felon be shot, if any?

____a. None (except under very extreme extenuating circumstances)

3. Does the Georgia Law require that a suspect be warned before the legal use of deadly force against him?

____a. No. (However, it is department policy to give the perpetrator an opportunity to surrender if circumstances warrant this)

4. What constitutes a forceable felony?

____Murder, rape, robbery, aggravated assault.

5. What is entrapment?

6. Define Robbery.

_____

____a. Strong arm robbery.

____b. Armed robbery.

____Total Part I

II. Must have proper job attitudes and willingness to do work. The officer must indicate that he would not hesitate to use necessary force to the extent of using deadly force if the conditions warrant this action. The officer must indicate that he has sufficient judgement and self-restraint to react properly under trying circumstances. The officer must indicate that he would be not overly aggressive or anxious to use deadly force.

1. If you would be legally justified in shooting a robbery perpetrator, even though you could apprehend him without shooting him, which would you do?

   (indicate degree of agressiveness)

2. If a perpetrator completed the commission of a robbery and was escaping the scene with his back toward you and no life is in danger; would you, or would you not shoot him? If yes, why? If no, why?

   (indicates knowledge of law and degree of agressiveness)

3. Have you any religious, moral, or mental objections to using deadly force if such force becomes absolutely necessary?

   (indicates hesitancy to use force which could be fatal to officer or robbery victim)

4. What is your understanding of entrapment?

   (can indicate the degree of agressiveness of the officer and his knowledge of the law)

5. If you observed a subject walk into a store, hand the cashier a piece of paper, which she reads and proceeds to hand the subject an extremely large amount of money from the register, what if any action would you take?

   (indicates judgement and self-restraint)

6. If you were observing a cashier from a two-way mirror, and observed a subject walk to the cashier and lay a gun on the counter, then started a conversation with the cashier, how would you handle the situation from that point on?

   (indicates judgement and self-restraint)

7. If four shotgun armed perpetrators, all wearing masks, rushed into a store where you were the lone stake-out officer observing through a two-way mirror, and one of the perpetrators trained his shotgun at your observance mirror, and two pointed theirs at the cashier, while the fourth perpetrator stood at the entrance door with his shotgun trained at the entrance, what would you do?

   (Indicates judgement, self-restraint, and degree of agressiveness)

8. If you observed a subject enter a store, then stood around the cashier as if though waiting for the customers to leave, while at the same time you observed the butt of a pistol in his rear pocket, when, and what action would you take?

   (Indicates judgement, self-restraint, tendency to use deadly force, and degree of agressiveness)

9. If you were on a stake-out assignment and the cashier had left the register momentarily, during which an unarmed subject took the opportunity to open the cash register to help himself, what action would you take?

   (Indicates knowledge of law, judgement, and self-restraint)

Rate from 1 to 10 the Officer's:

A. Judgement_____

B. Self-Restraint_____

C. Degree of Agressiveness_____

D. Moral convictions which may interfer with job performance _____

Total_____

Part I_____

Part II_____

Total Oral Interview Rating_____ .

Appendix D

Evaluation Techniques

A part of the Anti-Robbery evaluation was based on trend analysis calculated from linear time series regression models. These regression models use time as the independent variable and after assuming a functional form of the relationship between crime level and time, estimates the parameters in the functional form chosen. This estimation is based on the minimization of the sum of squares of the difference between the function and the observed values at each point for which historical data is available. The functional form used in our models is:

$$= a + b\,x$$

where Y is the crime level, x is the time variable and a and b are unknown parameters.

The computational formula for "b" is:

$$b = \frac{N\Sigma xy - (\Sigma x)(\Sigma y)}{N\Sigma x^2 - (\Sigma x)^2}$$

and for "a" is:

$$a = \frac{\Sigma Y - b\Sigma X}{N}$$

When the number of data points to be used in establishing a trend is relatively large, manual calculation of the parameters becomes time consuming and tedious. In order to facilitate computation of time series models, the CAT evaluation staff have developed very accurate software packages that calculates the relevant statistics for these models.

The evaluation of the Anti-Robbery project required six time series models two each for total robbery, commercial robbery and open space miscellaneous robbery. Denoting:

TRP = total robbery prior to project initiation;
TRA = total robbery after project initiation;
CRP = commercial robbery prior to project initiation;

CRA = commercial robbery after project initiation;
ORP = open space/miscellaneous robbery prior to project initiation;
ORA = open space/miscellaneous robbery after project initiation.

The numerical values of the models are:

TRP = 282.9496 + 2.8004 (1.86)
TRA = 308.67 + 1.0298 (2.69)
CRP = 115.5282 - .6987 (-1.682)
CRA = 126.6099 - 1.5129 (-4.321)
ORP = 155.4698 + 2.20069 (3.838)
ORA = 167.2135 + 1.4410 (3.468)

The number in the parenthesis are the T values of the coefficients. All except the equations for total and commercial robberies prior to the project's initiation are significant at the 95% confidence level. The confidence level on the other two equations are at a 90% level.

In order to study the correlation between the number of decoy and stake-out operations and the number of commercial and open space robberies prevented, the seasonal index for each of the categories were estimated using a ratio to moving average method.

The seasonal index for commercial and open space robberies are:

	Commercial	Open Space
January	1.245	1.148
February	.884	.908
March	.876	1.087
April	.719	.985
May	.642	.957
June	.781	.928
July	1.617	1.021
August	.930	.981
September	.989	.937
October	1.026	.891
November	1.443	.993
December	1.449	1.166

The data points for the correlation matrix was estimated by the formula:

$$\hat{y}_c = (115.5282 - .6987 x_i) I_x - y_c$$

for commercial robberies:

$$\hat{y}_{op} = (155.4698 + 2.20069) I_x - y_{op}$$

and, for open space/miscellaneous robberies where $\hat{y}_c$ and $\hat{y}_{op}$ are the estimated number of incidences prevented and y_c and y_{op} are the actual member of incidences during the project year.

This method is our first approach towards establishing any form of relationship between the project's operation and the achieved goal. It is hoped that subsequent evaluations would provide more insight in this direction.

Appendix E

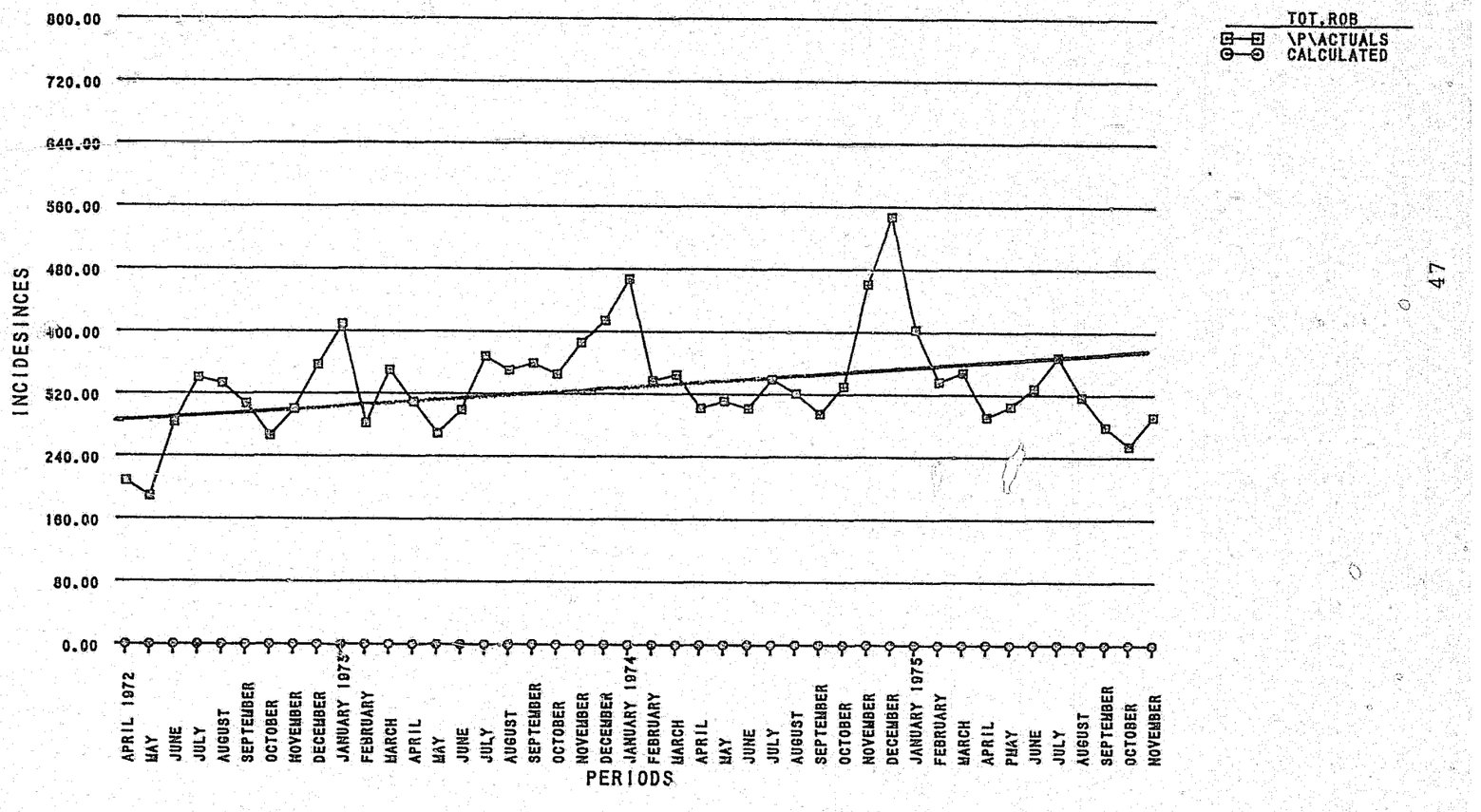
AR/ARB Time Frame

July, 1972	Pilot Project
November, 1972	ARB Grant Application
February, 1973	ARB Grant Award
April, 1973	ARB Operational (Begin Phase I)
March, 1974	AR Grant Application
April, 1974	ARB Expiration (End Phase I-Begin Phase II)
August, 1974	AR Grant Award
November, 1974	AR Operational (End Phase II-Begin Phase III)
August, 1976	AR Grant Expiration Date*

* Reflects Grant Period; Subject to Extention.

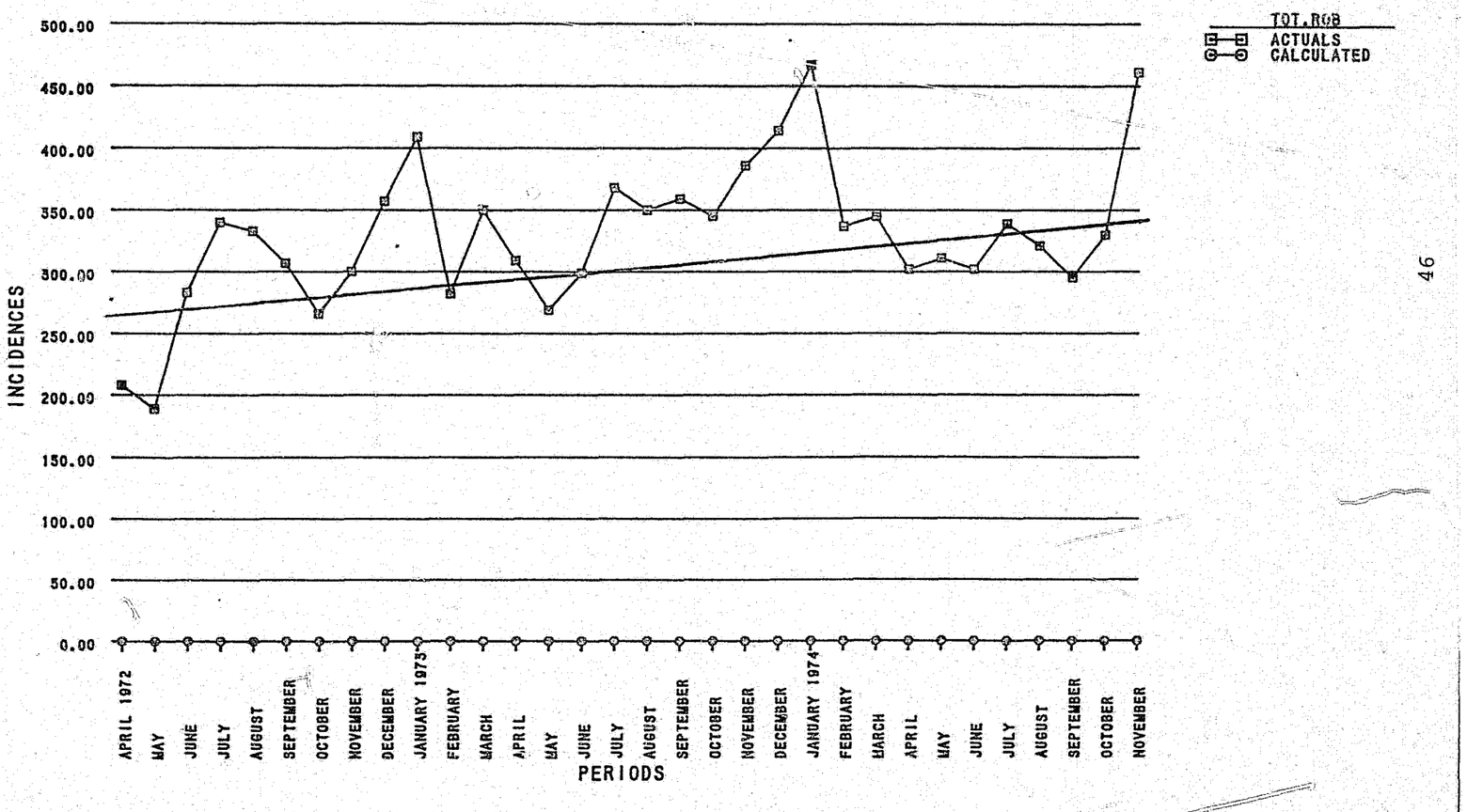
Appendix F

CRIME ANALYSIS TEAM
ANTI-ROBBERY EVALUATION
TOTAL ROBBERIES
PROJECT DATA



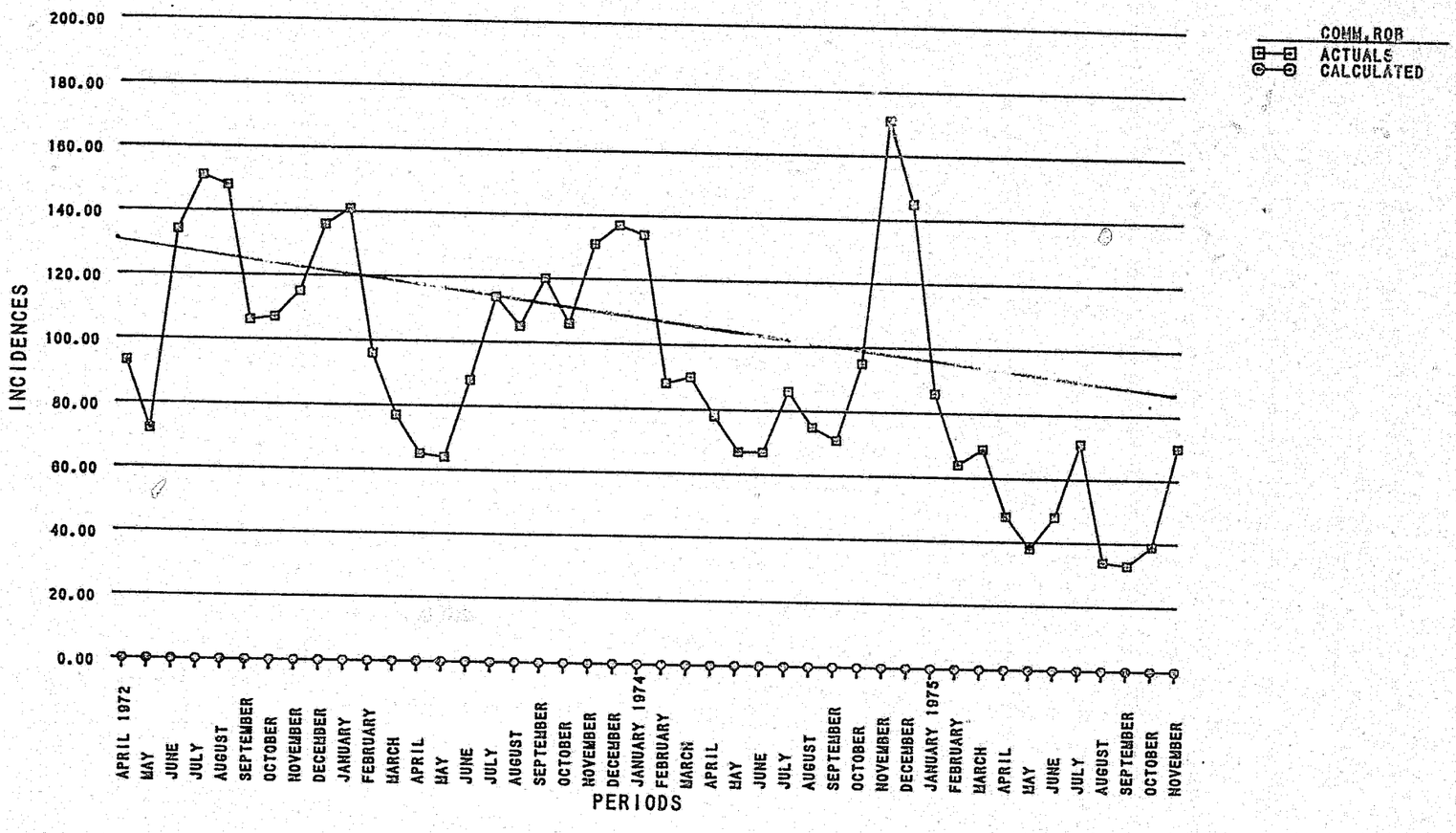
47

CRIME ANALYSIS TEAM
ANTI ROBBERY EVALUATION
TOTAL ROBBERIES
BASE LINE DATA

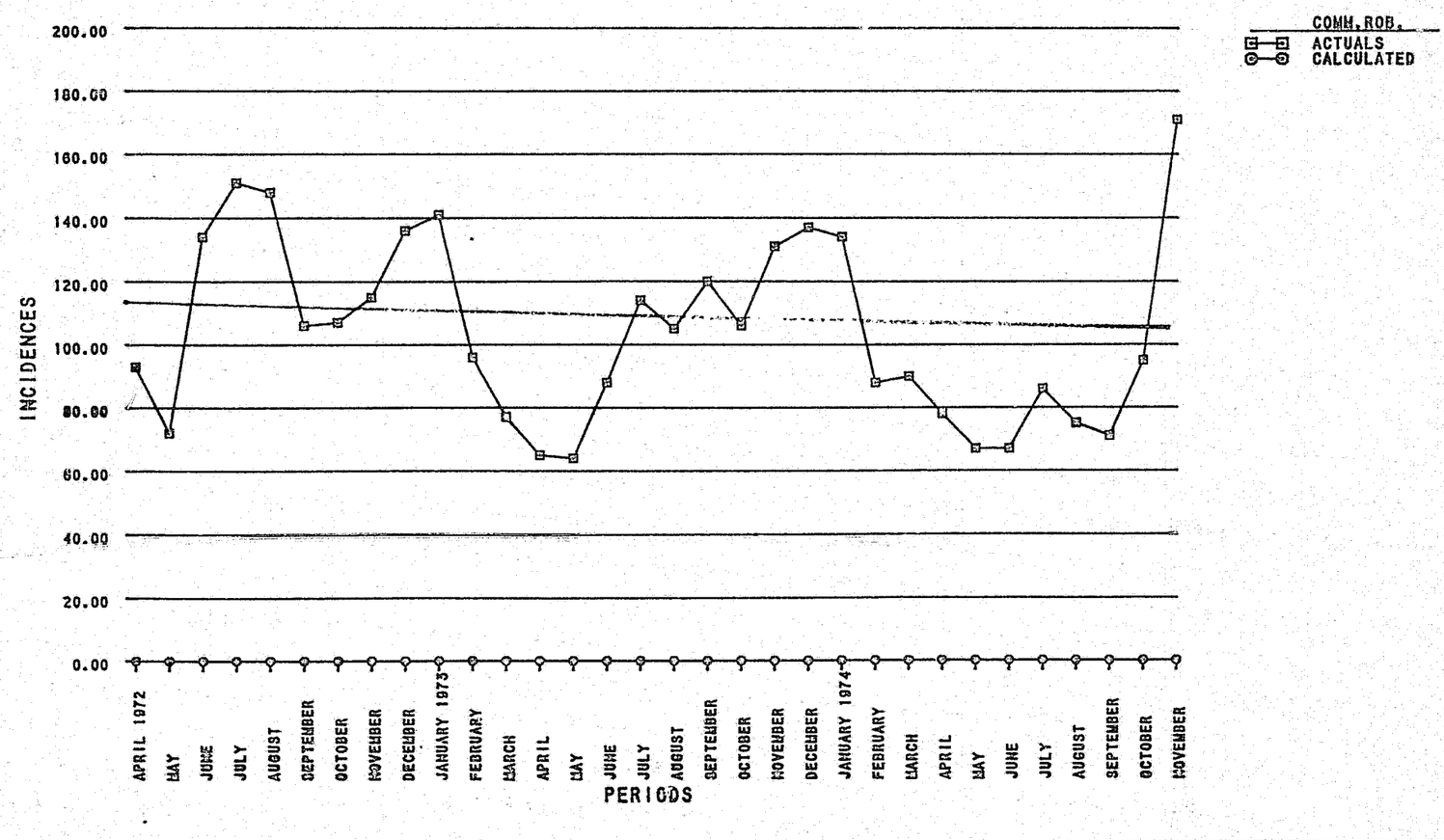


46

CRIME ANALYSIS TEAM
ANTI-ROBBERY EVALUATION
COMMERCIAL ROBBERIES
PROJECT DATA

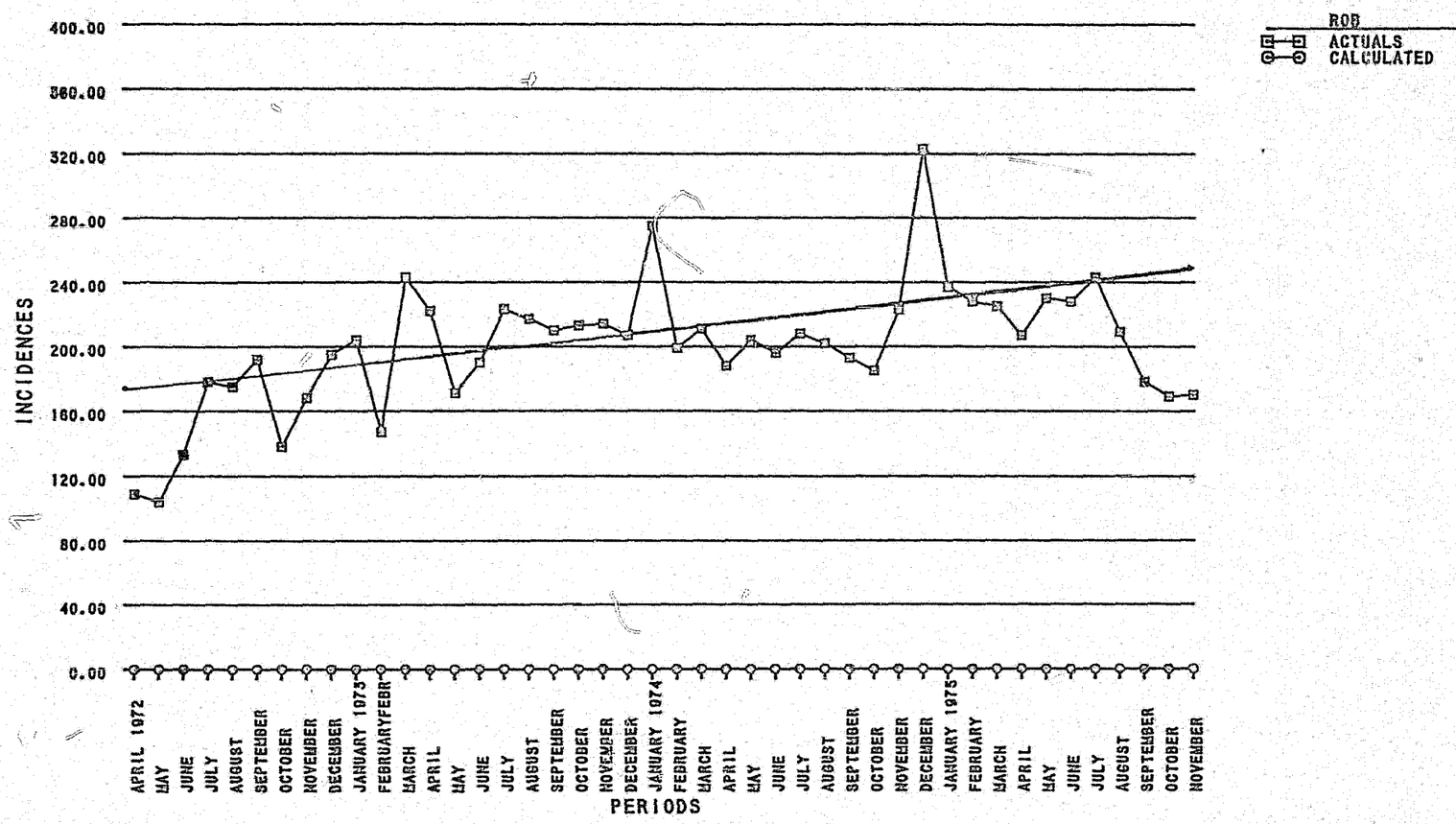


CRIME ANALYSIS TEAM
ANTI-ROBBERY EVALUATION
COMMERCIAL ROBBERIES
BASE LINE DATA



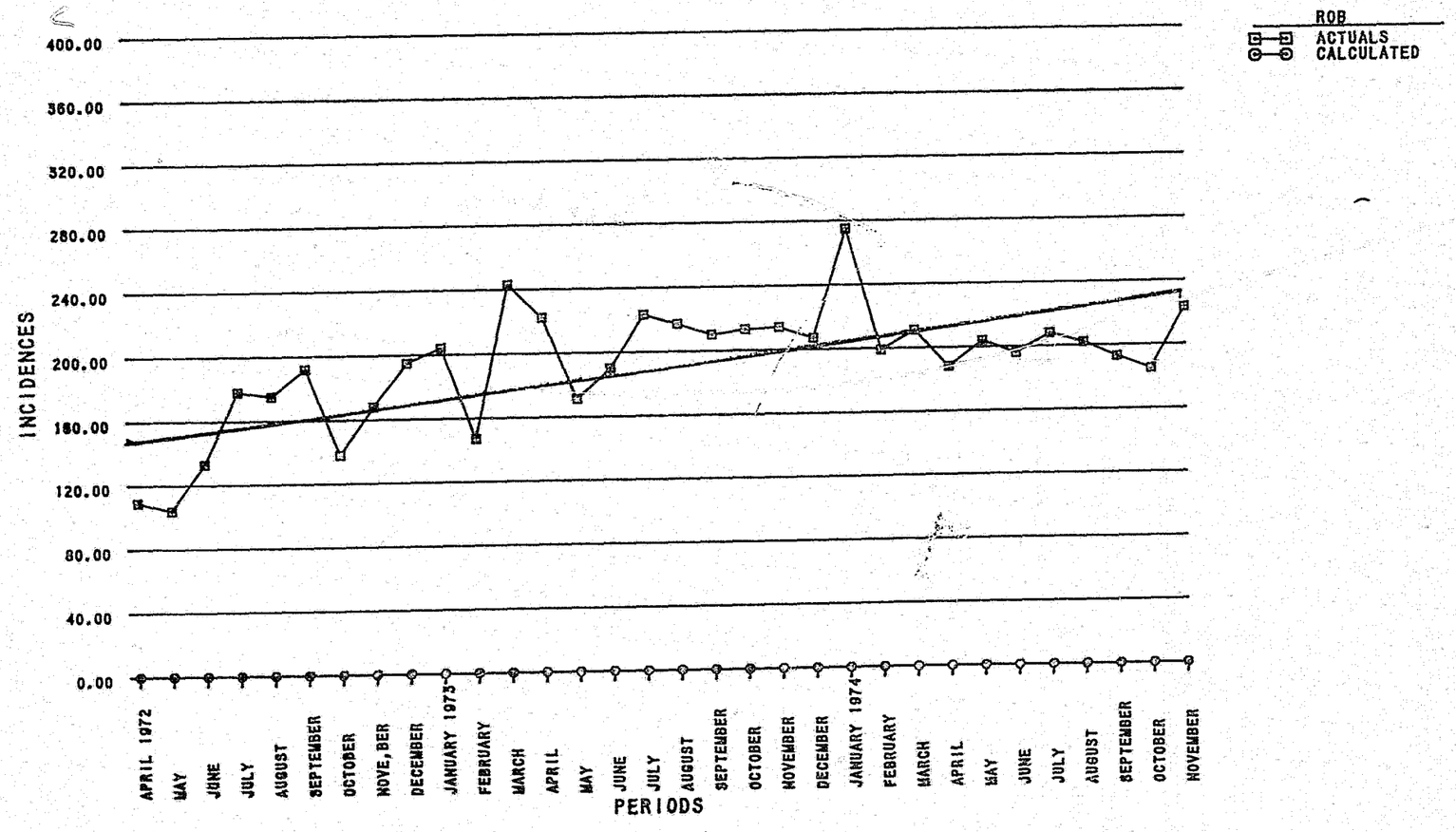
CRIME ANALYSIS TEAM

ANTI ROBBERY EVALUATION
OPEN SPACE AND MISC.ROBBERIES
PROJECT DATA



CRIME ANALYSIS TEAM

ANTI ROBBERY EVALUATION
OPEN SPACE AND MISC.ROBBERIES
BASE LINE DATA



The pu[illegible]n of this document was financed in part by a grant from [illegible]he Law Enforcement Assistance Administration.

END