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ACQUISITIONS

Mr. Richard T. Loomis  
The Mitre Corporation  
1820 Dolley Madison Blvd.  
McLean, Virginia 22101

Dear Mr. Loomis:

Enclosed is the final evaluation report for Dallas Police Department's  
Helicopter Alert Project.

If you have any questions or comments regarding this report, please  
let us know.

Sincerely,

Don Cleveland  
Executive Director

DC:jb

Enclosure

36495

14-00000 HELICOPTER ALERT PROJECT -

FINAL EVALUATION

Prepared by: DALLAS AREA CRIMINAL JUSTICE COUNCIL

This project was supported by funds made available by the Law Enforcement Assistance Administration, U. S. Department of Justice, under the Omnibus Crime Control and Safe Streets Act of 1968, as amended and awarded by the Texas Criminal Justice Council.

## FINAL EVALUATION

Project Title: Helicopter Alert

Funding Date: September 1, 1973

Evaluation Period: September 1, 1973 - December 31, 1974

### Background Information

The Helicopter Alert project is based upon the long held belief that the faster police units respond to a crime in-the-act of being committed, the greater the possibility of effecting an arrest on-the-scene or near-the-scene.

Significant reductions in response time by ground units have been limited by a number of factors including, distances from the scene, traffic congestion, and other driving conditions, and the speed at which even an emergency vehicle can safely travel.

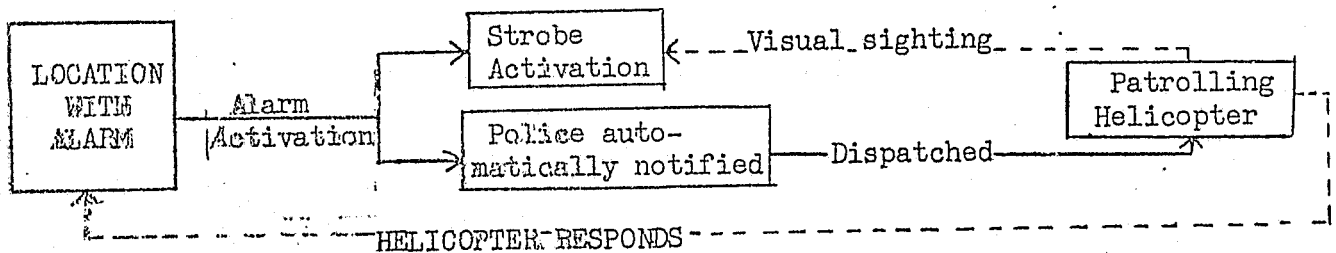
With the introduction of the helicopter into law enforcement as a regular patrol element, the Dallas Police Department saw the potential for reduced response times, increased arrest rates, and an overall reduction in crime.

By 1973, after two years in operation, the helicopter units had, indeed, lowered their response time on all calls for service to an average of four minutes compared to six minutes for ground units. However, the in-the-act arrest rate for the department remained very low. Only 0.06 percent of the armed robberies and 0.01 percent of the burglaries were stopped in-the-act. Police officers realized that if the assumption that faster response times do lead to increased arrests was valid, then the response time needed to be further reduced to achieve the desired results.

## Components

The Helicopter Alert Project contains two components:

-An alarm device capable of use as both a robbery and burglary alarm. In both modes of operation the equipment consists of an activating device in the building linked to a high intensity strobe light atop the location and a sending device attached to an existing telephone line connected to a digital readout device in the Police Communications Office.



In the robbery phase, the alarm is manually activated while in the burglary mode the alarm is activated through detection of movement in the protected area by an ultrasonic sensory device. In both cases the time lag between activation of the alarms and receiving in the Communications Office is approximately 12 seconds. The strobe light is activated at the same time the Communications Office is being notified electronically. The patrolling helicopter is to respond to the flashing strobe immediately and contain the area until ground units can respond.

-The numbering of approximately 1,087 street locations with 24 inch by 18 inch lettering. The numbers are placed every five blocks on major thoroughfares throughout the city. These numbers enable helicopter units to locate and respond to specific locations and then direct ground elements to locations in a reduced amount of time.

### Areas of Deployment

Area I: Patrol beats 111-116, 118, 124, 211-214, 216, 217, 225, 231, 311, 312

Area II: Patrol beats 411-417, 421, 422, 426, 431, 433, 434

Area III: Patrol beats 331, 332, 333, 335

### Dates of Deployment

Area I: January 15, 1974 - March 31, 1974

Area II: April 1, 1974 - December 31, 1974

Area III: August 1, 1974 - December 6, 1974

### Deployment Strategy

Although the beats vary significantly in socio-economic characteristics, the locations where the alarms were placed were fairly uniform. The burglar alarms were placed in small businesses like garages, dry cleaners, and restaurants. (All installations, including burglary alarm locations, had robbery switches, regardless of type business. Burglar alarm equipment was not installed in 24-hour operations.) The robbery alarms were mainly placed in fast food locations and all night neighborhood stores.

All of the locations were identified as having a history of burglaries and robberies despite efforts by the owners to secure the premises. Placement of the alarm depended on the availability of private phone lines in the business, as the telephone company would not allow equipment to be attached to pay phones.

### Evaluation Period

The period covered by this evaluation is September 1, 1973 to December 31, 1974. Implementation of the Helicopter Alert Project, including contract award and acceptance, and design and development of the alarm system, took place from September 1, 1973 to January 15, 1974. Actual deployment of the alarms in Area I commenced on January 15, 1974 and was completed February 4, 1974.

## Objectives and other Measures of Effectiveness and Efficiency

The Helicopter Alert Project had three basic objectives.

1. To decrease the average response time of the helicopter by 50 percent (from four minutes to two minutes) in answering robbery and burglary alarm calls to those locations where a Helicopter Alert alarm has been installed and is operable.
2. To reduce the average response time to all calls for service by 20 percent (from four minutes to 3.2 minutes) as a result of street numbering.
3. To increase in-the-act arrests for robbery and burglary by 50 percent on those calls where a Helicopter Alert alarm is operable as compared to arrest rates for other burglary and robbery alarm calls during the same time period.

Other indirect measures of efficiency and effectiveness will also be examined:

1. A false alarm rate on the Helicopter Alert alarms of 10 percent or less.
2. A faster response time for Helicopter Alert alarms than other burglary and robbery alarms during the same time and area.
3. A reduction in the crime count for business burglary and business robbery in the area of deployment.
4. Any monthly variance in the business burglary and robbery crime count in the area of deployment during deployment.

### Definitions:

1. In-the-act arrest: Any arrest in which the helicopter is of assistance where a person has committed a robbery or a burglary and is still at the scene of the offense, or is in-the-act of fleeing.
2. Response time: That time passage from when the Police Communications Office first broadcasts the alarm signal until the helicopter arrives at the scene.

### Analysis of Project Objectives:

Objective #1: To decrease the average response time of the helicopter by 50 percent (from four minutes to two minutes) in answering robbery and burglary calls to those locations where a helicopter alert alarm has been installed and is operable.

In most instances response time is a questionable measurement of accomplishment because it is subject to a great deal of misinterpretation due to inaccurate reporting. In an attempt to control reporting errors, the Project Director required strict adherence to departmental policy concerning reporting response time.

Chart I shows the response times recorded for the "Alert" alarm systems. The response time ranged from a low of 1.2 minutes in August, 1974, to a high of 2.5 minutes in December, 1974. The figures on Chart I indicate no trends relative to a constant reduction in response time. The response time dropped to around 2.0 minutes during the first month and remained near that level throughout the 11 months of the project. However, the goal of a 2.0 minute or less response time has been met.

CHART I

Month	Number of Responses To Helicopter Alarms by Month	Average Response Time per Month	
February, 1974	14	26.6	1.9
March, 1974	4	8	2.0
April, 1974	4	8	2.0
May, 1974	21	46.2	2.2
June, 1974	25	40.0	1.6
July, 1974	19	31.9	2.1
August, 1974	12	14.4	1.2
September, 1974	13	26.0	2.0
October, 1974	9	13.5	1.5
November, 1974	7	14.7	2.0
December, 1974	4	10.0	2.5
TOTAL	132	262	-
AVERAGE	12	21.0	1.9

In examining this rapid decrease in response (evidenced by the drop from four minutes to 1.9 minutes in the first month of deployment) two factors need to be addressed.

First, the alarms were placed in contiguous patrol areas, called beats. Although the size of the deployment areas varied from 18 beats (Area I) to four beats (Area III) the beats were adjoining and easy for one helicopter to patrol.

The second reason for the rapid decrease in response time was the amount of time the helicopter spent patrolling in the deployed area. Chart II graphically illustrates the time spent in the deployed area.

CHART II

MONTH	TOTAL FLYING TIME (HOURS)*	FLYING TIME IN DEPLOYED AREA	PERCENTAGE OF TOTAL FLYING TIME (HOURS) IN DEPLOYED AREA
Feb, 1974	509.5	207.4	40.7
Mar, 1974	573.5	39.5	6.9**
Apr, 1974	528.1	62.6	11.9**
May, 1974	472.2	46.4	9.8**
Jun, 1974	578.6	222.3	38.4
Jul, 1974	667.1	273.6	41.0
Aug, 1974	578.2	246.2	42.6
Sep, 1974	447.3	215.3	48.1
Oct, 1974	599.1	212.7	35.5
Nov, 1974	504.7	255.3	50.6
Dec, 1974	382.8	186.2	48.6
AVERAGE	533.4	227.4	42.6

\*Total Flying time varies because of weather conditions and mechanical failure.

\*\*The figures in March, April, and May are low because of a reporting format error that was corrected in June. These three months are not included in the averages.

These figures show that the helicopter units spent approximately 43 percent of their total flying time in the deployed area. This intensive patrolling effort was initiated to decrease the response time in the deployed area.



Objective II: Reduce the average response time to all calls by 20 percent (from four minutes to 3.2 minutes) as a result of street numbering.

The street numbering, as explained in the component section, was designed to enable helicopter units to locate and respond to locations quicker through identification of specific block numbers and then direct ground elements to the locations. Although helicopter units can identify many streets by air it is often difficult to find block numbers or specific locations, especially at night.

Although the necessary materials for street numbering were received in February, 1974, the Traffic Control Department, because of manpower shortages, did not initiate application of the numbers until June 2, 1974. Excluding highway markings, the application of the numbers was completed by the end of July, 1974.

To get an accurate picture of the effectiveness of the street numbering, Chart III compares the average monthly response time for February, 1974, through July, 1974, with the same figures for August, 1974, through December, 1974.

CHART XII

BEFORE STREET NUMBERING		AFTER STREET NUMBERING	
Month	Avg. Helicopter Response Time on all Calls (Mins)	Month	Avg. Helicopter Response Time on all Calls (Mins)
Feb, 1974	3.0	Aug, 1974	3.4
Mar, 1974	3.6	Sep, 1974	3.2
Apr, 1974	3.4	Oct, 1974	3.4
May, 1974	3.8	Nov, 1974	3.3
Jun, 1974	3.3	Dec, 1974	3.4
Jul, 1974	3.5		
AVERAGE	3.4	AVERAGE	3.3

The figures indicate a 3.4 minute average response time for the six months period prior to application of the numbers. This would indicate that there was a reduction from four minutes (the 1973 average response time) to 3.4 minutes without assistance

from the street numbers. The Project Director explains that the four minute average response time used for 1973 was actually made from late 1972 and early 1973 figures and that by January, 1974, the average response time was probably closer to 3.6 minutes.

The reduction from four minutes to 3.4 minutes during the first six months is not the important comparison by which to judge the objective. The comparison between the average for the last five months of the project, after the numbers had been applied to the streets, and the first six months, when there were no numbers is a more valid comparison. This analysis shows an average 0.1 of a minute decrease.

According to project statistics, the street numbering has had no measurable effect on overall helicopter response time. Almost as soon as they were applied the numbers began to show signs of rapid wear. It is not known whether the wear was due to traffic conditions, weather conditions, vandalism, or improper application. The pilots indicate the numbers, while initially helpful, are increasingly difficult to see from the air.

Objective III: To increase in-the-act arrests for robbery and burglary by 50 percent on those calls when a helicopter alarm is operable as compared to arrest rates for other burglary and robbery alarm calls during the same time period.

This objective is measured by comparing the arrests made in response to the "Alert" alarms with arrests made in response to all other burglary and robbery alarms in the same geographic areas (beats) during the same time frame. Because this grant was designed to measure the effectiveness of the helicopter in responding to alarm systems (both the special "Alert" alarms and all other burglary and robbery alarms) data was collected on only helicopter assisted arrests in response to alarms.

Between February and December, 1974, helicopter units did not assist in the arrest of any suspects in response to helicopter "Alert" alarms. Five arrests were made in

response to other alarms in the same area during the same time period, four in August and one in October.

It is interesting to note the relationship in Chart IV between the number of alarms activated (both "Alert" and other alarm systems in the same area), the number of times the helicopter responded to both, and the number of cases where a response was made to an actual crime. This touches on the false alarm rate, which will be discussed in the next section, but is presented here because the figures explain, in part, the reason why no arrests were affected.

CHART IV

MONTH	NO. TIMES ALERT ALARMS ACTIVATED	NO. TIMES HELICOPTER RESPONDED <sup>1</sup>	NO. OF TIMES RESPONDED TO ACTUAL OFFENSE <sup>2</sup>	NO. TIMES OTHER ALARMS ACTIVATED	NO. TIMES HELICOPTER RESPONDED	NO. OF TIMES RESPONDED TO ACTUAL OFFENSE <sup>2</sup>
Eeb, 1974	68	14	0	158	13	0
Mar, 1974	57	4	0	130	12	0
Apr, 1974	35	4	0	105	4	0
May, 1974	71	21	0	126	30	0
Jun, 1974	80	25	1*	145	64	0
Jul, 1974	87	19	0	138	43	2
Aug, 1974	68	12	0	133	70	4
Sep, 1974	88	13	0	153	40	0
Oct, 1974	45	9	0	168	51	1
Nov, 1974	47	7	0	153	47	3
Dec, 1974	42	4	0	144	38	0
11 MONTH TOTAL	688	132	1	1,553	412	10

<sup>1</sup>The helicopter does not respond to all "Alert" alarm activations because of weather conditions, distance to the scene or; in the case of an error where the subscriber calls to report a false alarm.

<sup>2</sup>These figures are calculated based upon notes kept by the Project Director.

\*A burglary. The helicopter crew observed the suspect run from the building but were unable to give specific instructions to ground units because of the heavily wooded area. Ground units could not locate suspect.

Of the 132 responses the helicopter units made to "Alert" alarms only one was an actual offense. Of the 412 responses to other alarm systems ten were actual offenses.

This does not mean that there were no arrests made as a result of the "Alert" alarm system. Statistics were kept on arrests made by ground units without helicopter support in response to "Alert" alarms. Unfortunately, no statistics are available concerning non-helicopter assisted arrests for the other alarm systems.

During the 11 months of the project, there were 21 burglaries and 22 robberies at "Alert" alarm locations. Arrests were made in four of the burglaries, a 16.7 percent on-the-scene arrest rate. In those four cases, eight suspects were arrested and ten cases cleared. No arrests were made in response to the robbery alarms because none of the alarms were activated until after the suspect had departed.

#### Analysis of Measures of Effectiveness and Efficiency:

The following measures are outlined in the evaluation component of the grant application and are presented here because they offer additional information relative to the performance of the project.

#1: A false alarm rate on the helicopter alert alarms of 10 percent or less.

Chart V presents the false alarm rate for the "Alert" alarm system compared to the false alarm rate for other alarms in the deployed area.

CHART V

MONTH	NUMBER OF TIMES ALARMS ACTIVATED IN DEPLOYED AREA		NUMBER OF FALSE ALARMS IN DEPLOYED AREA		FALSE ALARM RATE IN DEPLOYED AREA (PERCENT)	
	"ALERT"	OTHER ALARMS	"ALERT"	OTHER ALARMS	"ALERT"	OTHER ALARMS
Feb, 1974	68	158	64	155	94.1	98.1
Mar, 1974	57	130	55	126	96.5	96.9
Apr, 1974	35	105	32	100	91.4	95.2
May, 1974	71	126	70	124	98.5	98.4
Jun, 1974	80	145	76	142	95.0	97.9
Jul, 1974	87	138	77	130	88.5	94.2
Aug, 1974	68	133	65	131	95.6	98.5
Sep, 1974	88	153	80	146	90.9	95.4
Oct, 1974	45	168	41	160	91.1	95.2
Nov, 1974	47	153	43	149	91.4	97.3
Dec, 1974	42	144	40	143	95.2	99.3
TOTALS	688	1,553	643	1,506		
AVERAGES	62.5	141.2	58.5	136.9	93.5	97.0

The 93.5 percent false alarm rate, while slightly better than the rate on the other alarm systems, was totally unacceptable but not unexpected. Past experience with alarm systems in general has indicated an extremely high false alarm rate of around 98 percent (unofficial estimate). The goal of a 10 percent false alarm rate apparently was not a reasonable goal, given the police department's past experience with alarms.

Chart VI illustrates the reasons for the false alarms, by month, for the 11 months of the project. The major problem was subscriber error, which accounted for 55.4 percent of the false alarm. This occurred despite repeated instructions in the use of the equipment. When the alarms were installed the Project Director spent approximately 45 minutes per business explaining how the alarms operate, walking the employees through the procedure to be followed during opening and closing, and answering questions. If there was a false alarm due to subscriber error the Project Director

returned to the location and provided additional instruction and counseling.

Despite these instructions the problem of subscriber errors remained unsolved.

False alarms due to equipment malfunction reached a peak during May, June, and July. Of the 45 false alarms due to equipment malfunction in May, June, and July, 32 of them occurred at six locations. The problem was oversensitive equipment. Alarms were activated because of car lights, air conditioners coming on, and the cooling units of a soft drink dispenser turning on. By July the equipment had been modified so as to eliminate most of the oversensitive characteristics. Problems with equipment malfunctions appear to have been corrected by the last three months of the project.

## CHART VI

## REASON FOR FALSE ALARMS

REASONS	MONTH											TOTAL	% TOTAL ERROR
	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
Subscriber Error <sup>1</sup>	52	48	18	24	28	34	38	36	27	26	26	357	55.4
Inclement Weather			2		6							8	1.2
Alarm Equipment Malfunctions	2	2	2	20	7	18	6	5				62	9.6
Telephone Equipment Malfunctions					15							15	2.3
Animal/Rodent in Bldg.	2		1								7	10	1.5
Customer Set Off	1											1	.2
Civil Matter/Wanted Police	1								2			3	.5
Police Set Off											1	1	.2
Power Failure									4			4	.6
Unexplained <sup>2</sup>	8	5	9	26	20	25	21	39	8	17	6	184	28.5
Total	66	55	32	70	76	77	65	80	41	43	40	645	

1. This includes alarms during opening and closing, new employees, and knocking the plug out.

2. This category increased after April when, because of the amount of work involved, the Project Director stopped investigating every false alarm.



- #2. A faster response time for helicopter alert alarm than other burglary and robbery alarms during the same time.

*all the time  
made  
1/1/74*

Chart VII is a comparison, on a monthly basis, of response times to "Alert" alarms and other alarm systems.

CHART VII

MONTH	RESPONSE TIME ALERT ALARMS (MINUTES)	RESPONSE TIME OTHER ALARMS (MINUTES)
Feb., 1974	1.9	4.5
Mar., 1974	2.0	12.0
Apr., 1974	2.0	4.7
May, 1974	2.2	2.7
Jun., 1974	1.6	3.0
Jul., 1974	2.1	2.8
Aug., 1974	1.2	2.9
Sep., 1974	2.0	2.9
Oct., 1974	1.5	2.6
Nov., 1974	2.0	2.7
Dec., 1974	2.5	3.2
AVERAGE	1.9	4.0
MEDIAN	2.0	2.9

In evaluating the data in Chart VII it is suggested that the median is a more valid measurement for comparison. The 12 minute average response time for the "other alarms" category in March was caused by one unusually large response time that occurred when the helicopter responded to a call in the southeast part of Dallas from a location in the northwest part of the county, outside the city limits. Using the median figure, Chart VII does show a 0.9 minute faster response time for the "Alert" alarm system. Although no conclusive evidence is presented, it is assumed that the strobe light was the major factor contributing to the faster response time, as this was the only significant difference between the alarm systems. The strobe lights atop the "Alert" alarm locations aided the helicopter units in locating the

building. Other alarm systems provided no markings visible from the air making it difficult to "zero" in on a specific location, especially at night.

#3. A reduction in the crime count for business burglary and business robbery in the area of deployment.

This is a way of measuring the crime deterrent effect of the increased helicopter patrolling. The measurement is accomplished by comparing offenses prior to deployment with offenses during deployment to see what effect the increased helicopter presence had on the crime count. Any comparison between months is a problem because of factors other than deployment which can contribute to an increase or decrease in the crime count. In analyzing data relating to this measurement, adjustments have been made to account for outside factors. One factor we have attempted to estimate and eliminate is seasonal variation. By using data for the City of Dallas for the last five calendar years for actual business burglaries and the last three calendar years for reported business robberies, monthly seasonal indices have been derived. Using these indices, adjusted crime counts for the area of deployment have been developed, thereby eliminating the seasonal effect.

Another factor to be dealt with is calendar variation (a month can have from 28 to 31 days, causing a difference in the length of time periods being compounded). This factor has been eliminated by comparing offenses per day instead of per month. Other unidentifiable causes of irregularity, including weather conditions, that might have affected helicopter deployment have not been adjusted for in the deployment figures.

Chart VIII summarizes the data presented on Attachment II, the Adjusted Number of Offenses Before and During Deployment.

# CHART VIII

	<u>OFFENSES PER DAY</u>		
	<u>Before</u>	<u>After</u>	
	<u>Deployment</u>	<u>Deployment</u>	<u>PERCENT DECREASE</u>
<u>Business Burglary</u>			
Area I	1.89	1.84	2.6
Area II	2.21	2.11	4.5
Area III	<u>0.889</u>	<u>0.634</u>	<u>28.7</u>
AVERAGE*	1.76	1.62	8.0
<u>Business Robbery</u>			
Area I	0.424	0.224	47.2
Area II	0.533	0.491	7.9
Area III	<u>0.170</u>	<u>0.150</u>	<u>11.8</u>
AVERAGE*	0.407	0.347	14.7

\*Averages calculated by dividing offenses per period of deployment by the number of days of deployment in Attachment II.

The figures show a reduction in all three areas of deployment for both of the deployed crimes. The 14.7 percent average reduction for business robberies compared to the 8.0 percent average reduction for business burglaries indicates the helicopter is a more effective deterrent against robberies than burglaries.

Based on Chart VIII there appears to be a positive deterrent effect to the physical presence of the helicopter in a high crime area.

## #4. Any monthly variance in the business burglary and business robbery crime count in the area of deployment during deployment.

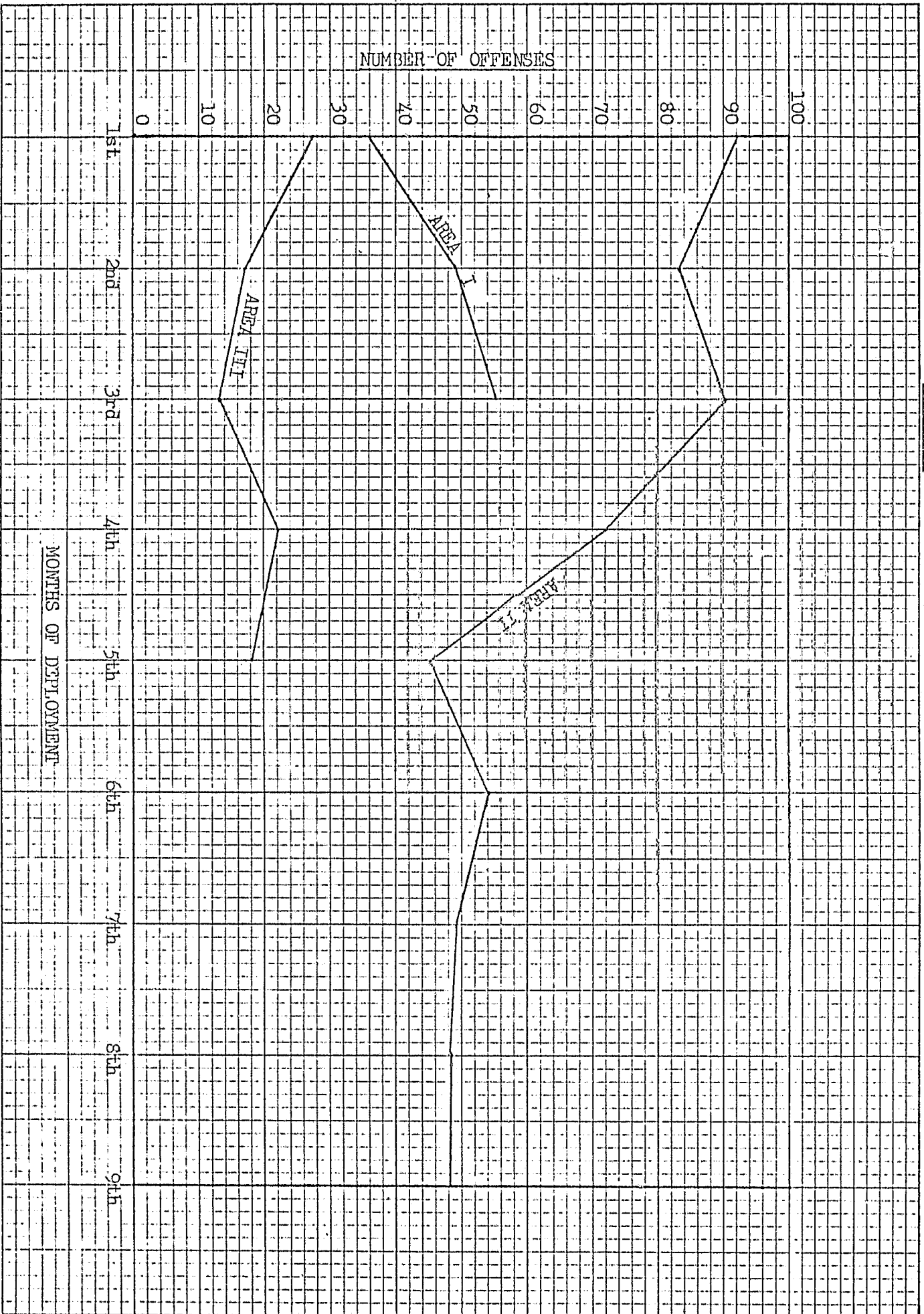
This was chosen as a measure of efficiency in an attempt to arrive at a period of deployment beyond which the effectiveness of the helicopter as a crime deterrent begins to diminish. By arriving at an optimum time of deployment the helicopter could be used to its greatest potential.

Graphs I and II illustrates adjusted crime incidences for business burglary and business robbery, respectively in the areas of deployment.

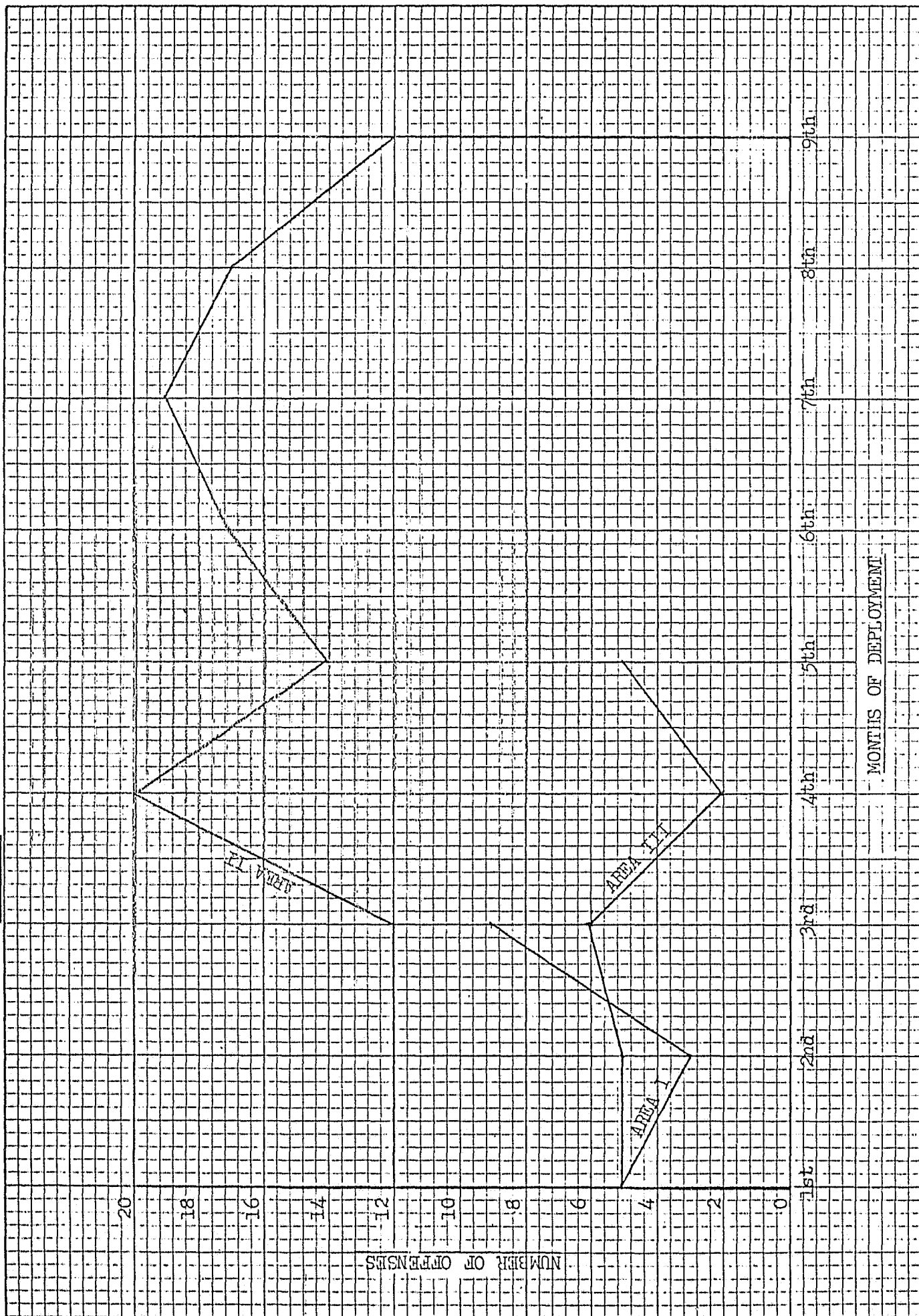
Graph I (business burglaries) does not indicate any overall optimum period of deployment. Area I achieved its lowest incidence of crime during the first month. In months two and three there is a steady increase in crime. Area II reached its lowest incidence in the fifth month following a decline that started in the fourth month. After the fifth month there was a slight rise followed by a leveling off. Area III decreased in months two and three, increased in four, followed by a slight decrease in the fifth month. Similarly Graph II (business robbery) does not show any identifiable trends. Area I achieved its lowest number of offenses in the second month followed by a sharp rise. Area II had the lowest number of offenses during the first three months followed by a series of increases and decreases during the next six months. Area III's lowest number of offenses occurred in the fourth month and then rose in the fifth month.

The limited number of deployments preclude any conclusion being drawn from the data. Further studies aimed at obtaining this type of information might provide more useful and conclusive information about an optimum time of deployment.

GRAPH I  
ADJUSTED MONTHLY VARIANCE FOR BUSINESS BURGLARY



GRAPH II  
ADJUSTED MONTHLY VARIANCE FOR BUSINESS ROBBERY



## Conclusions

One obvious problem with the Helicopter Alert project was the lack of helicopter assisted in-the-act arrests, which was a primary objective. While in-the-act arrests is an important measure the failure of the Helicopter Alert project to achieve this goal should not be used as the sole criterion for evaluation.

There are explanations for the lack of any in-the-act arrests. As pointed out near the end of the discussion of the third objective, there were 22 actual robberies and 21 actual burglaries at alarm locations during the 11 months of the project. In none of the 22 robberies were the alarms activated until after the suspect had departed. The robbery victims indicated that because of the activating device any attempt to activate the alarm while the offender was present could have resulted in physical harm. This would indicate the need of a different type of activating device, one that might be easier and less obvious to activate.

Of the 21 business burglaries the helicopter responded to one, making no arrest and ground units responded to the remaining 20 burglaries making four arrests. The only loss in the 21 burglaries was \$100. Because of the placement of the strobe lights (on top of the building) and the type of businesses deployed in (mostly small businesses in small buildings) the activated strobe light reflected off of any surface, object, or clouds. This apparently caused many burglars to flee without taking any money or goods.

The fact that only one of the 132 responses made by the helicopter to the alarm system was to an actual crime brings up possibly the biggest problem and failure of the "Alert" alarms, the false alarm rate of 93.5 percent. This occurred despite extensive efforts by the police to control the problem. This indicates credibility problems with alarm systems of this type, a factor to be considered before linking any alarm system directly to the police station.

This project did prove the effectiveness of a strobe light in attracting helicopter patrols. The aid provided by the strobe light assisted in achieving the desired two minute response time.

In addition, the patrolling helicopter has been proven to be an effective crime deterrent; in every area where helicopter patrols were intensified the incidences of business burglary and business robbery decreased.

The project has been concluded, the alarm systems removed and returned to the manufacturer. The police department does not feel the alarms are worth the time and money required to maintain them.



## ATTACHMENT I\*

## NUMBER OF OFFENSES BEFORE AND DURING DEPLOYMENT

	MONTH	OFFENSES	MONTH	OFFENSES	MONTH	OFFENSES	TOTAL	AVERAGES PER DAY
			<u>AREA I</u>					
<u>Business Burglary</u> Offenses Prior to Deployment (92 days)	Oct, 1973	46	Nov, 1973	78	Dec, 1973	56	180	1.96
Offenses During Deployment (76 days)	Jan, 1974	39	Feb, 1974	45	Mar, 1974	52	136	1.79
<u>Business Robbery</u> Offenses Prior to Deployment (92 days)	Oct, 1973	12	Nov, 1973	17	Dec, 1973	21	50	.543
Offenses During Deployment (76 days)	Jan, 1974	7	Feb, 1974	9	Mar, 1974	6	16	.211
			<u>AREA II</u>					
<u>Business Burglary</u> Offenses Prior to Deployment (274 days)	Jul, 1973	81	Aug, 1973	69	Sep, 1973	46	619	2.26
	Oct, 1973	39	Nov, 1973	55	Dec, 1973	72		
	Jan, 1974	76	Feb, 1974	72	Mar, 1974	109		
Offenses During Deployment (275 days)	Apr, 1974	84	May, 1974	76	Jun, 1974	84	577	2.10
	Jul, 1974	81	Aug, 1974	48	Sep, 1974	55		
	Oct, 1974,	48	Nov, 1974	49	Dec, 1974	52		

\*See Attachment II for adjusted figures.

## ATTACHMENT (CONT'D)

## NUMBER OF OFFENSES BEFORE AND DURING DEPLOYMENT

	MONTH	OFFENSES	MONTH	OFFENSES	MONTH	OFFENSES	TOTAL	AVERAGE PER DAY
<u>Business Robbery</u> Offenses Prior to Deployment (274 days)	Jul, 1973	15	<u>AREA II (CONT'D)</u>		Sep, 1973	18		
	Oct, 1973	19	Aug, 1973	21	Dec, 1973	23		
	Jan, 1974	17	Nov, 1973	22	Mar, 1974	11	154	0.562
			Feb, 1974	8				
Offenses During Deployment (275 days)	Apr, 1974	9	May, 1974	8	Jun, 1974	11		
	Jul, 1974	21	Aug, 1974	12	Sep, 1974	16		
	Oct, 1974	22	Nov, 1974	24	Dec, 1974	15	138	0.502
<u>Business Burglary</u> Offenses Prior to Deployment (153 days)	Mar, 1974	26	<u>AREA III</u>		May, 1974	31		
	Jun, 1974	25	Apr, 1974	19			130	.850
			Jul, 1974	29				
Offenses During Deployment (153 days)	Aug, 1974	29	Sep, 1974	17	Oct, 1974	13		
	Nov, 1974	22	Dec, 1974	20			101	.660

# ATTACHMENT 1 (CONT'D)

## NUMBER OF OFFENSES BEFORE AND DURING DEPLOYMENT

	MONTH	OFFENSES	MONTH	OFFENSES	MONTH	OFFENSES	TOTAL	AVERAGE PER DAY
			AREA III (CONT'D)					
<u>Business Robbery</u> Offenses Prior to Deployment (153 days)	Mar, 1974	3	Apr, 1974	5	May, 1974	2		
	Jun, 1974	6	Jul, 1974	6			22	.144
Offenses During Deployment (153 days)	Aug, 1974	4	Sep, 1974	5	Oct, 1974	7		
	Nov, 1974	3	Dec, 1974	6			25	.163

## ADJUSTED NUMBER OF OFFENSES BEFORE AND DURING DEPLOYMENT

	MONTH	OFFENSES	MONTH	OFFENSES	MONTH	OFFENSES	TOTAL	AVERAGES PER DAY
<u>AREA I</u>								
<u>Business Burglary</u> Offenses Prior to Deployment (92 days)	Oct, 1973	47	Nov, 1973	76	Dec, 1973	51	174	1.89
Offenses During Deployment (76 Days)	Jan, 1974	36	Feb, 1974	49	Mar, 1974	55	140	1.84
<u>Business Robbery</u> Offenses Prior to Deployment (92 days)	Oct, 1973	10	Nov, 1973	12	Dec, 1973	17	39	.424
Offenses During Deployment (76 days)	Jan, 1974	5	Feb, 1974	3	Mar, 1974	9	17	.224
<u>AREA II</u>								
<u>Business Burglary</u> Offenses Prior to Deployment (274 days)	Jul, 1973	72	Aug, 1973	65	Sep, 1973	45	606	2.21
	Oct, 1973	40	Nov, 1973	54	Dec, 1973	66		
	Jan, 1974	70	Feb, 1974	78	Mar, 1974	116		
Offenses During Deployment (275 days)	Apr, 1974	92	May, 1974	83	Jun, 1974	90	581	2.11
	Jul, 1974	72	Aug, 1974	45	Sep, 1974	54		
	Oct, 1974,	49	Nov, 1974	48	Dec, 1974	48		

\*See Attachment I for original figures.

ATTACHMENT II (CONT'D)

ADJUSTED NUMBER OF OFFENSES BEFORE AND DURING DEPLOYMENT

	MONTH	OFFENSES	MONTH	OFFENSES	MONTH	OFFENSES	TOTAL	AVERAGE PER DAY
<u>Business Robbery</u> Offenses Prior to Deployment (274 days)	Jul, 1973	14	Aug, 1973	25	Sep, 1973	19	146	0.533
	Oct, 1973	16	Nov, 1973	16	Dec, 1973	19		
	Jan, 1974	13	Feb, 1974	8	Mar, 1974	16		
<u>Offenses During</u> Deployment (275 days)	Apr, 1974	12	May, 1974	12	Jun, 1974	12	135	0.491
	Jul, 1974	20	Aug, 1974	14	Sep, 1974	17		
	Oct, 1974	19	Nov, 1974	17	Dec, 1974	12		
<u>Business Burglary</u> Offenses Prior to Deployment (153 days)	Mar, 1974	28	Apr, 1974	21	May, 1974	34	136	0.889
	Jun, 1974	27	Jul, 1974	26				
	Aug, 1974	27	Sep, 1974	17	Oct, 1974	13		
<u>Offenses During</u> Deployment (153 days)	Nov, 1974	22	Dec, 1974	18			97	0634

# ATTACHMENT II (CONT'D)

## ADJUSTED NUMBER OF OFFENSES BEFORE AND DURING DEPLOYMENT

	MONTH	OFFENSES	MONTH	OFFENSES	MONTH	OFFENSES	TOTAL	AVERAGE PER DAY
<u>Business Robbery</u> Offenses Prior to Deployment (153 days)	Mar, 1974	4	Apr, 1974	6	May, 1974	3	26	.170
	Jun, 1974	7	Jul, 1974	6				
Offenses During Deployment (153 days)	Aug, 1974	5	Sep, 1974	5	Oct, 1974	6	23	.150
	Nov, 1974	2	Dec, 1974	5				

**END**

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