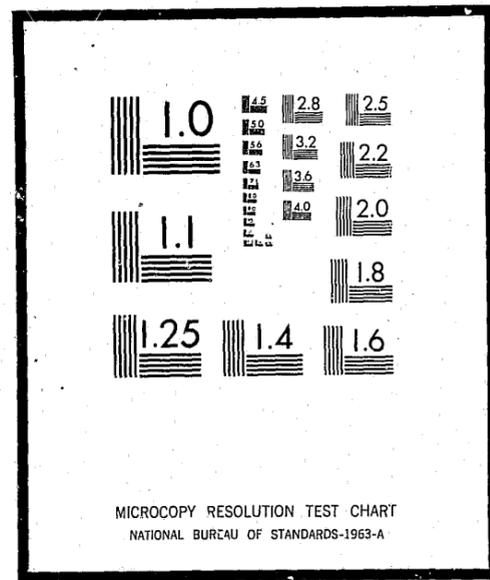


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LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
NATIONAL CRIMINAL JUSTICE REFERENCE SERVICE
WASHINGTON, D.C. 20531

Date filmed 9/19/75

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California Council on
Criminal Justice

Phase I Report

Helicopter Patrol Project
Cluster Evaluation

January, 1974

ARTHUR YOUNG & COMPANY



1

HELICOPTER PATROL PROJECT

CLUSTER EVALUATION

PHASE I REPORT

JANUARY 7, 1974

ARTHUR YOUNG & COMPANY

ARTHUR YOUNG & COMPANY

555 CAPITOL MALL
SACRAMENTO, CALIFORNIA 95814

January 7, 1974

Ms. Francine Berkowitz
Office of Criminal Justice Planning
7171 Bowling Drive
Sacramento, California 95823

Dear Ms. Berkowitz:

The attached document provides the Phase I report for the evaluation of four helicopter patrol projects. It is submitted in accordance with the specifications included in the CCCJ Request for Proposal for Cluster Evaluation, the Arthur Young & Company proposal of August 1973, and the project contract.

This report updates and expands upon the "Helicopter Patrol Project Cluster Evaluation, Status Report" submitted to the Evaluation Advisory Committee by Arthur Young & Company on October 23, 1973. This Phase I report also provides the detailed methodology to be utilized in the evaluation of each project in the cluster and the evaluation of the cluster as a whole. The proposed evaluation procedures have been reviewed on-site with each Project Director.

Our updated Work Plan and Staffing Schedule is also included. Phase II evaluation will not commence until authorization is received from the Evaluation Advisory Committee.

We look forward to a discussion of this report with you and the Committee at your earliest convenience.

Yours very truly,

Arthur Young & Company

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I. INTRODUCTION

I. INTRODUCTION

The firm of Arthur Young & Company has been retained by the California Council on Criminal Justice (CCCJ) to provide an evaluation of four helicopter patrol projects. These projects are:

<u>Project Title</u>	<u>Applicant Agency</u>
ASTREA - (Aerial Support to Regional Enforcement Agencies)	San Diego County Sheriff's Department
Ventura County Sheriff's Department Helicopter Program	Ventura County Sheriff's Department
Helicopter	San Bernardino County
Project CO-OP (Crime Oriented - Optimum Patrol)	Kern County

The objectives of the evaluation as set forth by the evaluation unit of CCCJ in a document entitled "Evaluation Of Crime Control Programs in California: A Review" follows:

"Specifically, this evaluation effort will, for each of the seven clusters, assess each project's performance as a separate entity, and also in comparison to the achievements of other projects in the cluster. Thus, cluster evaluation will assess each project's and each cluster's achievements of impact-oriented objectives, reflected in reduction of crime or improvement of the criminal justice system. Cluster evaluation will also involve critical analysis of the design of evaluation components within each project, reflected in data collected and methodology employed, as presented in each project's evaluation report. In addition, cluster evaluators will explore the potential for building a program from each cluster of projects, as well as for developing impact-oriented objectives for these programs."

On October 23, 1973 a report entitled, "Helicopter Patrol Project Cluster Evaluation--Status Report", was submitted to the Evaluation Advisory Committee. That report outlined the findings of initial

visits by the consultant to each of the four project areas. The report also established the broad framework for evaluation.

1. PURPOSE OF PHASE I REPORT

The Phase I Report is submitted approximately mid-way in the helicopter patrol project evaluation contract period. The principal purpose of the Phase I Report is to set forth in detail the specific steps and procedures which will be utilized to evaluate each individual helicopter patrol project as well as the helicopter patrol project cluster as a whole. The Phase I Report updates and expands upon the previously referred to Status Report.

The report is submitted to CCCJ and the counties involved in the evaluation for review purposes. We anticipate a meeting with the Helicopter Patrol Project Evaluation Advisory Committee to review in detail the proposed evaluation procedures. The substantive work in Phase II will not commence until concurrence is obtained on the proposed methods and procedures contained in this document.

2. METHODOLOGY UTILIZED IN PREPARING REPORT

The following steps were undertaken in the preparation of this report:

- . Comments from the CCCJ Project Manager and individual project managers regarding the initial Status Report were reviewed. Where appropriate, modifications in approach were instituted.
- . Data, forms, and other materials obtained from the individual projects were thoroughly reviewed to determine specific evaluation data elements to be utilized and their sources.
- . Evaluation survey instruments were prepared and reviewed with individual project managers.
- . Individual project managers were contacted and asked to provide certain additional information and assistance prior to the submission of this Phase I Report. Specifically, counties were requested to compile cost data and to provide assistance in determining a means for dissemination of the community survey.

We revisited each helicopter patrol project. The purpose of this visit was to review in detail the proposed Phase II evaluation at the project site. This review included:

- confirmation as to the existence of and extractability of proposed data elements
- a review of proposed evaluation procedures with individual project managers to assure adequacy and appropriateness of the evaluation.

Based upon the on-site visits some proposed procedures were modified and additional steps were included.

3. ORGANIZATION OF REPORT

This report contains the following sections:

I. Introduction

II. Individual Project Evaluations - this section provides a brief summary of each individual project and a detailed description of the proposed evaluation for that project.

III. Cluster Evaluation - this section summarizes the anticipated evaluation of the cluster of helicopter patrol projects.

IV. Assessment of Evaluation Components - the prior project evaluations are identified and reviewed for each project county.

V. Data Collection Instruments - this section contains the various data collection instruments that will be used during Phase II which are essentially common to all projects.

VI. Work Plan and Staffing Schedule

The Phase I Report is designed to essentially stand alone. As such, some material has been extracted from the previous Status Report and included herein. This procedure has been instituted to facilitate reader review.

II. INDIVIDUAL PROJECT EVALUATION

II. INDIVIDUAL PROJECT EVALUATION

The purpose of this section is to outline the proposed evaluation methodology for each helicopter patrol project within the cluster. By varying degrees, each project will be evaluated based upon the five evaluation components identified in the Arthur Young & Company proposal of August, 1973. These components are:

- . Program Implementation and Operation Activity
- . Perceived Effectiveness of Helicopter Patrol Projects, by:
 - community
 - ground patrol officers
 - other governmental agencies utilizing helicopter services.
- . Effect on Incidence of Crime
- . Response Time
- . Comparative Cost Effectiveness.

As was indicated in the Status Report, the objectives as stated for the individual projects are, for the most part, not impact oriented. We believe the five evaluation components encompass the objectives of each of the projects. In the following pages of this section each of the four helicopter patrol projects is described in detail and our proposed evaluation methodology is presented. Data collection instruments and the comparative cost methodology for all projects are contained in Section V.

1. SAN BERNARDINO COUNTY

San Bernardino County encompassing 20,160 square miles is the largest county in the continental United States. Topography ranges from low deserts to high mountains. The major concentration of population is centered in the western valley sector of the county.

The San Bernardino Sheriff's Department is responsible for providing law enforcement services in the vast unincorporated areas of the county. A series of 11 stations dispersed throughout the County provide these services.

Pursuant to CCCJ Grant Number 0623 the San Bernardino Sheriff's Department acquired two Bell helicopters (Model 47G-3b-2) to assist in meeting the county's law enforcement needs. Helicopter service was initiated on January 1, 1972.

(1) Operational Summary

As originally conceived San Bernardino's helicopter program was to commence operations soon after July, 1971. However, considerable delay was experienced in obtaining grant approval. As such, the helicopters were not received until November. Additional time spent in fitting the machines with special equipment, training pilots, and observers, etc., resulted in an effective project initiation date of January 1, 1972. The original grant period was later extended three months to September 30, 1972.

The helicopter program is assigned to the Aviation Division of the Sheriff's Department which is headed by an Aviation Division Commander (current rank of Captain). The Commander reports to the Sheriff's Inspector. Two pilots (sergeants), and two observers are assigned to the helicopter program.

During the grant period a relatively firmly scheduled day and night shift patrol was maintained. During this period 12 shifts per week, of a 14 shift week, were covered. The following schedule applied:

- . Day shift (5) - 8:00 A.M. - 4:30 P.M.
- . Night Shift (7) - 4:00 P.M. - 12:00 A.M.

It is estimated that 80% of patrol time was spent in the Sheriff's Central Division (the unincorporated area surrounding the City of San Bernardino), 15% in closely related areas, and 5% in the desert. In general the desert patrol was conducted on weekends.

The Aviation Division 1972 Annual Report provides the following breakdown of project operations:

<u>Classification</u>	<u>Percent of Hours</u>
Patrol	84.2%
Training	1.4
Transportation	0.6
Photography	1.1
Surveillance	4.3
Searches	5.6
Rescues	1.8
Administration	1.0
Service to other agencies	<u>0.0</u> *
Total	100.0%

* Services to other agencies actual = 0.02

Activities engaged in while on patrol are categorized as follows:

- . Observation - activities which are initiated by the helicopter crew.
- . Calls - activities initiated by the desk or ground units and transmitted via radio to the helicopter crew.
- . Detail - activities engaged in as a result of instruction from a supervisor received either in person or by telephone.
- . Assists - the activity of assisting law enforcement personnel without instructions to do so from ground personnel.

It should be noted that initially an attempt was made to monitor other agencies' calls. This procedure was apparently discontinued early in the project as it was perceived as unworkable. However, special requests for assistance were answered.

In addition to scheduled activities a 24 hour response capability is maintained.

(2) Project Objectives

The following six project objectives are identified in San Bernardino Grant Request Number 0623:

- . Reduce crime through concentrated patrol efforts in unincorporated high crime areas
- . Save lives in search and rescue efforts
- . Aid in riot control
- . Serve as an observation platform during natural disasters
- . Provide quick response to "crime in progress" calls
- . Provide assistance to other agencies.

(3) Project Evaluation

The San Bernardino helicopter patrol project will be evaluated with respect to the five evaluation components. In the following paragraphs the specific evaluation steps are described. The steps, methods and procedures, and the data sources have been reviewed on-site with the San Bernardino Project Director.

Program Implementation and Operation Activity

Exhibit I, following this page, summarizes data elements and data sources for this component of project evaluation. The purpose of this component is to summarize project background and to provide numerical indices of project operation during the evaluation year. The resulting summary and data elements will facilitate understanding of the project operation and implementation and can provide comparative indicators of project orientation among projects.

Perceived Effectiveness of Helicopter Patrol

Three surveys will be conducted within San Bernardino County to determine the perceived effectiveness of the current helicopter patrol project. These surveys will be designed to

PROGRAM IMPLEMENTATION AND OPERATION
SAN BERNARDINO COUNTY

	<u>ELEMENT</u>	<u>DATA SOURCE</u>
I.	Project Background	Project Staff Interviews Review of Reports Review of Departmental Orders
	. Impetus for Project	
	. Grant Date	
	. Implementation Date	
	- Reason for Delay	
	. Equipment	
	- Helicopter Model(s)	
	- Altitude Performance	
	- High Intensity Lights	
	- Litter Capacity	
	- Communications Capacity	
	- Other Special Features	
	- Method of Maintenance	
	. Staffing	
	- Administrative Responsibility	
	- Pilots/Observers	
	.. Recruitment	
	.. Training	
	. Perceived Problems	
II.	Project Operation (January 1, 1972 - December 31, 1972)	Annual Report Staff Interview/Annual Report Flight Information Log
	. Patrol Schedule	
	. Patrol Assignment Type	
	. Time in Air	
	- Total	
	- Average Monthly/Daily	

PROGRAM IMPLEMENTATION AND OPERATION

SAN BERNARDINO COUNTY

<u>ELEMENT</u>	<u>DATA SOURCE</u>
Distribution of Time by Activity Classification	Flight Information Log/1972 Annual Report
- Search	- Surveillance
- Rescue	- Photo
- Transportation	- Patrol
- Investigation	- P. R. Displays
- Training	- Administrative
	- Other Agencies
Distribution of Patrol Time by Patrol Area	Flight Information Log
- Barstow	
- Victorville	
- Central District	
- 29 Palms	
- Desert	
Distribution Total Time	Flight Information Log
- Day Time vs Night Time	
- Valley Time vs Mountain Time	
Evaluation Year	
- Total Arrests	- Estimated Fire Cost Savings
- Total Assists	- So. Cal. Edison Cost Savings
- Total Responses to Critical Incidents	Monthly Summary
- Total Assists to Other Agencies	Monthly Summary
- Total Property Recovered	Daily Log
- Total Responses While on Standby	Flight Information Log - Daily Log
	1972 Annual Report
	Daily Log
Distribution of Activities Engaged in While on Patrol	Monthly Summary
- Observations	
- Calls	
- Details	
- Assists	

elicit the views of (1) the general public, (2) law enforcement officers, and (3) agencies, other than the Sheriff's Department, which have utilized the helicopter to provide services. The three surveys are described below:

- Community Survey - The purpose of the community survey is to elicit the attitude of the public, served by the helicopter patrol, as to whether or not they favor the project and whether or not they feel more secure as a result of the project. In addition questions concerning program awareness will be asked.

The proposed community survey questionnaire is provided in Section V along with appropriate instructions. It is our intention to distribute 2000 questionnaires within the San Bernardino Sheriff's Department Central Division patrol area. This area received the majority of patrol effort during the evaluation period. To this point in time we have not been able to identify a mailing to serve as a vehicle for the survey. This is due in large part to the irregular shape of the Central Division which surrounds the City of San Bernardino.

As an alternative, we propose distributing the 2000 questionnaires in proportion to population within two zip code zones. The selected zones are:

- 92346, Highland
- 92345, Loma Linda

It is believed that these two zip code zones provide a representative sample of area types patrolled by the helicopter program.

- Sworn Officers Survey - The format for the sworn officers survey is provided in Section V. Approximately 600 questionnaires will be required to cover the Department's sworn officers. The survey format is designed to elicit attitudinal information both from officers within the Department who have directly participated with the helicopter and from those with only a passing knowledge of the project. In addition, space is allocated for suggestions from the officers responding to the survey.

- Other Agencies Survey - An objective of the San Bernardino helicopter program is to "provide assistance to other agencies." In Section V, a structured interview format for contacting other governmental agencies is provided. Consultant personnel will interview officials of five agencies to determine their use and opinions regarding the helicopter program. Agencies to be contacted include the following:

- State Forestry Department
- Loma Linda Community Hospital
- Ontario Police Department
- San Bernardino City Police Department
- California Highway Patrol (Local Office)

It should be noted that, in 1972 only 0.02% of total helicopter time was spent in "service to other agencies. For this reason, it is anticipated that the impact of the program on other agencies will prove to be minimal.

Effect on Incidence of Crime

During the evaluation period the helicopter was used most frequently for patrol in the Sheriff's Department Central Division. Crime occurrence statistics have been maintained since 1966 in the same format and reported for the Central Division.

It is our intention to extract the following categories of crime for the Central Division for the period 1966-1972: robbery, aggravated assault, burglary, grand theft and grand theft auto. (Note: two categories suggested in the previous Status Report have been eliminated, (1) disturbing the peace, for which data is unavailable, and (2) rape, which was determined to be inappropriate for suppression by helicopter patrol.)

Based upon the historical trend, expected occurrence of crime will be projected for the year January 1, 1972 - December 31, 1972 and compared to actual occurrence. Observed differences will be tested for statistical significance. The comparatively extensive use of patrol in the San Bernardino program and the heavy concentration of the patrol in the Central Division should provide an opportunity to test the hypothesis that helicopter patrol projects reduce specific categories of crime.

Response Time

The San Bernardino grant application lists two objectives related to response time. These are:

- . Provide quick response to "crime in progress" calls
- . Save lives in search and rescue efforts.

Historically the Sheriff's Department has not maintained records of either helicopter or patrol car response times. In order to determine the differential response times (helicopter vs. patrol cars) the helicopter unit, at our request, instituted the following log entry:

- . Time of receipt of call of incidents to which both a patrol car and the helicopter are responding
- . Time on scene--helicopter
- . Time on scene--patrol car.

The mean time of each mode of response will be calculated. Observed differences will be tested for statistical significance. In addition, response time for selected types of calls will be extracted, the mean calculated and observed differences tested for statistical significance.

The second objective, that of saving lives in search and rescue efforts relates indirectly to response time in that it is presumed that lives will be saved if searches and rescues can be effected more expeditiously. As defined in the Status Report, a second area of response time analysis will involve the selection of a sample of 10-20 special category responses, i.e., search, rescue, medical evacuation, lost persons, etc. Total operational time utilized with helicopter and without helicopter (computed based upon past experience) will be compared. The results of this analysis will be reported by category.

The annual time savings for each category will be determined by multiplying the annual number of events times the difference in response rate with the helicopter vs. without the helicopter.

Our on-site review of proposed procedures indicates that this line of analysis will be limited because of the wide diversity of incidents and the small amount data. The most promising area is that of mountain search and rescue as there were approximately 82 mountain searches and rescues during the evaluation year. Data sources include, helicopter incident report (called the Division War Stories), the helicopter log, and personal interview.

Within the above constraints it is our intention to portray a typical mountain search and rescue and determine the impact of the helicopter. Selected other incidents will be reviewed, lost person/child, medical evacuation, and narcotics surveillance; however, we do not anticipate that a quantitative index of total annual saved time can be obtained for each category. A Special Incident Reporting Format to be used in this calculation is provided in Section V.

Comparative Cost Effectiveness

Section V describes the procedure and provides the instruments to be used in determining comparative cost effectiveness. Since the procedure is essentially the same for each county, it is not described in detail in each section.

(4) Evaluation Summary

Our review of the San Bernardino helicopter program reveals that the scope of the program is such that the original objectives may be evaluated. Our initial conclusion, contained in the Status Report, that sufficient data is available such that evaluation of the five components will be possible has been confirmed.

2. SAN DIEGO COUNTY

San Diego County is located in the extreme southwestern corner of the United States. The County encompasses 4,200 square miles and has 75 miles of sea coast and 80 miles of common border with Mexico. The majority of the 1.4 million inhabitants live along the sea coast.

Inland, the County is rugged and barren. A large transient tourist population, the opportunity for inter-county drug traffic, and a diversity in population densities and land characteristics provides a unique law enforcement situation.

Pursuant to CCCJ Grant Number 0589 the San Diego Sheriff's Department acquired three Bell Helicopters (47G series). Helicopter patrol operations commenced February, 1972.

(1) Operational Summary

Implementation of the San Diego helicopter project, known as "ASTREA" (Aerial Support to Regional Enforcement Agencies), was slow. The initial grant period July 1, 1971 - June 30, 1972 was extended six months to December 31, 1972 because operations did not commence until February, 1972 and grant funds could not be expended during the initial grant period.

ASTREA is assigned to the Aviation Division. The Aviation Division Officer-in-Charge, a Lieutenant, reports directly to the Chief Inspector - Patrol. There are five pilots and five observers assigned to ASTREA. The present project is essentially the same as existed during the grant period.

As indicated, ASTREA has three helicopters. Two helicopters are used essentially in scheduled patrol activities and one helicopter, which is equipped with a turbo charged engine, is used in special operations including high terrain work.

At project initiation, a fixed beat was established. The beat chosen has a population of approximately 56,000. The patrol area was chosen for the following reasons:

- . It is not in an aircraft control zone
- . It includes a mix of residential, commercial, and light industrial properties

- . The patrol beat is a high crime area
- . The patrol beat covers portions of both the City and County.

Both day and night patrols are flown in the fixed beat area.

ASTREA helicopters are available to all county law enforcement agencies on a no-charge basis. Sophisticated communications equipment provides for access by other agencies.

(2) Project Objectives

The following primary and secondary objectives are identified in ASTREA Grant Request Number 0589:

- . Primary objectives
 - Improve response time (especially in less populous areas).
 - Increase surveillance of high crime rates.
 - Increase effectiveness and efficiency of patrol observation.
 - Improve emergency medical service capability in remote areas.
 - Increase efficiency and effectiveness in search and rescue.
 - Enhance capability to respond rapidly and effectively to special enforcement situations.
 - Improve officer security and indirectly morale.
- . Secondary objectives
 - Deter crime.
 - Repress opportunities for the commission of crime.
 - Enhance opportunities to apprehend suspects.
 - Increase community awareness of police protection.
 - Increase well being through enhanced service capability.

(3) Project Evaluation

The San Diego helicopter patrol project will be evaluated with respect to the five evaluation components. In the

following paragraphs the specific evaluation steps are described. The steps, methods and procedures, and the data sources have been reviewed on-site with the San Diego Project Director.

Program Implementation and Operation Activity

Exhibit II, following this page, summarizes data elements and data sources for this component of project evaluation. The purpose of this component is to summarize project background and to provide numerical indices of project operation during the evaluation year. The resulting summary and data elements will facilitate understanding of project implementation and operation among projects.

Perceived Effectiveness of Helicopter Patrol

Three surveys will be conducted within San Diego County to determine the perceived effectiveness of the current helicopter patrol project. These surveys will be designed to elicit the views of (1) the general public, (2) law enforcement officers, and (3) agencies, other than the Sheriff's Department which have utilized the helicopter to provide services. The three surveys are described below:

Community Survey - The purpose of the community survey is to elicit the attitude of the public served by the helicopter patrol, (San Diego Master Beats 52 and 54) as to whether or not they favor the project and whether or not they feel more secure as a result of the project. In addition, questions concerning program awareness will be asked.

In Section V, the community survey questionnaire is provided along with appropriate instructions. With the assistance of Project ASTREA Staff a vehicle for survey questionnaire distribution was identified.

This vehicle was the Helix Water District. Due to scheduling problems, it was necessary to mail the questionnaires on December 24, 1973. Prior approval was obtained from the CCCJ Project Director for survey implementation. Two thousand questionnaires have been distributed. The results of the survey have not yet been received and tabulated.

PROGRAM IMPLEMENTATION AND OPERATION
SAN DIEGO COUNTY

<u>ELEMENT</u>	<u>DATA SOURCE</u>
I. Project Background	Project Staff Interviews Review of "Project ASTREA" October 1971 - March 1972
. Impetus for Project	
. Grant Date	
. Implementation Date	
- Reason for Delay	
. Equipment	
- Helicopter Model(s)	
- Altitude Performance	
- High Intensity Lights	
- Litter Capacity	
- Communications Capabilities	
- Other Special Features	
- Method of Maintenance	
. Staffing	
- Administrative Responsibility	
- Pilots/Observers	
.. Recruitment	
.. Training	
II. Project Operation (March 1, 1972 - February 28, 1973)	Helicopter Patrol Flight Summary
. Time in Air	
- Total	
- Average Monthly/Daily	

PROGRAM IMPLEMENTATION AND OPERATION
SAN DIEGO COUNTY

- Distribution of Time by Selective Activity Classification
 - Community Relations, Air
 - Community Relations, Ground
 - Training
 - Test
 - Search and Rescue
 - Surveillance
 - Photo
 - Assist Other Agency
- Helicopter Patrol Flight Summary
 - Cover Other Unit
 - Bad Weather
 - Fire
 - Medical Evacuation
 - Abandon Vehicle
- Distribution of Total Time
 - Night Time vs Day Time
 - Patrol Time vs Other Time
- Distribution of Arrests Resulting From Calls and Observations
 - Armed Robbery (211)
 - Burglary (459)
 - Grand Theft Auto
 - Narcotics
 - Other
- Evaluation Year
 - Total Arrests
 - Total Fires
 - Total Vehicles Sighted
 - Total Medical Assists
 - Total Assists to Other Agencies by Agency
 - Total Value of Lost Property Recovered
 - Searches and Rescues (i.e., Lost Child)
 - Calls Per Flight Hour
 - Observations Per Flight Hour
- Arrest Log
- Fire Log
- Vehicles Sighted Log
- Medical Assists Log
- Assists to Other Agencies Log
- Patrol Response Times - On Beat to Off Beat, Etc.

In the Status Report we pointed out "that San Diego County would provide an opportunity for a survey comparison which is currently beyond the scope of this study". As has been shown ASTREA has two distinct roles:

- patrol of a fixed beat
- general law enforcement assistance throughout the County.

Because of this dual role we believe a comparative survey between the area intensely served and a survey of a portion of the county not intensely served would be of interest. Some previous helicopter evaluations have tentatively indicated that citizen acceptance of helicopter patrol decreases with increases in the amount of patrol. It is not our intention to carry out this comparison unless so directed by the Evaluation Advisory Committee.

Sworn Officers Survey - The format for the sworn officers survey is provided in Section V. Approximately 300 questionnaires will be required to cover the Department's sworn officers. The survey format is designed to elicit attitudinal information both from officers within the Department who have directly participated with the helicopter and from those with only a passing knowledge of the project. In addition, space is allocated for suggestions from the officers responding to the survey.

Other Agencies Survey-Project ASTREA is perceived as a regional project and, hence, ASTREA helicopters have participated frequently with other agencies. (It is interesting to note that despite the regional orientation, in theory and in practice, assistance to other agencies is not listed as an objective of Project ASTREA.)

In Section V, a structured interview format for contacting other governmental agencies is provided. In the Status Report seven agencies were identified for interview concerning their use and opinions regarding the helicopter program. The following agencies were identified:

- San Diego P. D.
- El Cajon P. D.
- National City P. D.
- Oceanside P. D.
- Border Patrol
- State Bureau of Narcotics Enforcement
- State Forestry Department

Because of the regional orientation of ASTREA the Project Director has requested that we contact certain other agencies. We have tentatively agreed to do so; however, the contact will be limited to a telephone interview or, if possible, some type of group interview. Additional agencies identified include:

- Chula Vista P.D.
- La Mesa P. D.
- Imperial Beach P. D.
- Coronado P. D.
- Escondido P. D.
- Carlsbad P. D.
- Drug Enforcement Agency
- Narcotics Task Force
- Chairman, Fire Chiefs Association, Committee on Helicopters

Effect on Incidence of Crime

As indicated in the "Evaluation Constraints" section of the Status Report for San Diego, it may not be possible to show the effect project ASTREA has had upon the crime rate in the patrol area. The San Diego Sheriff's Department created a beat structure in 1972. Project ASTREA has flown, as the principal area of patrol, portions of Master Beats 52 and 54. Crime incidence data is now recorded for these areas. However, prior to 1972 crime incidence data was not recorded for the same delineated geographic areas, and, as such it is difficult to insure areal comparability of crime incidence data.

It is, however, possible to nearly reconstruct the patrol area (less the portion in San Diego City) by summing crime occurrences for the following geographic areas:

- . Lemon Grove
- . Helix
- . Casa de Oro
- . La Presa
- . Spring Valley

A card file is maintained on crimes reported in these areas. It will be possible to manually review this file and categorize

and count crime occurrences. We will attempt to do this for the crimes of: robbery, aggravated assault, burglary, grand theft, and grand theft auto.

This procedure will be followed for the years 1970 and 1971 only as there are no useable records of crime by area kept prior to this time. Prior crime incidence records have only the categories East and North County which are too general to be of assistance.

The above procedure may provide an indication of the programs effectiveness in reducing crime. It must, however, be underscored that the recreated area will not be exactly comparable with the new 1972 reporting areas. While the geographic discrepancy appears minimal, statistically valid comparisons cannot be made.

Response Time

The San Diego grant application lists the following objectives which are related to response time improvement:

- . Improve response time (especially in less populous areas)
- . Improve emergency medical service capability in remote areas
- . Increase efficiency and effectiveness in search and rescue
- . Enhance capability to respond rapidly and effectively to special enforcement situations
- . Enhance opportunities to apprehend suspects.

Historically the Department has not maintained a summary of patrol car and helicopter response times which would provide a basis for comparison of the two modes. In order to determine a differential response time, Project ASTREA, at our request, instituted the following log entry about November 1, 1973:

. Time of receipt of call, of incidents, to which both patrol car and the helicopter were responding.

- time on scene helicopter
- time on scene patrol car

The mean time of each mode of response will be calculated. Observed differences will be tested for statistical significance. In addition, response time for selected types of calls will be extracted and the mean calculated and observed differences tested for statistical significance.

The second area of response time analysis will involve a review of various special category incidents. The following types of special incidents have been identified as important components of ASTREA activities:

- . Search and Rescue
 - lost children (urban)
 - lost aircraft
 - remote area searches
- . Medical assistance
 - first aid assists
 - removal of subject

It can readily be seen from the above list that these types of activities relate directly to most of the objectives restated at the beginning of this sub-section. To the extent possible, a typical incident profile will be created for each of the above categories and annual saved time calculated in accordance with the procedure:

Annual time savings for each category will be determined by multiplying the annual number of events times the difference in response rate with the helicopter vs. without the helicopter.

In Section V, the Special Incident Reporting Format is provided.

Two problems are inherent in this procedure, (1) it is difficult to categorize the typical event, and (2) data relating to occurrences is limited. There are two sources of data available which are (1) the after action report and, (2) the helicopter flight log. Despite the above problems an effort will be made to calculate the annual saved time. At a minimum, the analysis will provide descriptive data relating to several Project ASTREA objectives.

Comparative Cost Effectiveness

Section V describes the procedure and provides the instruments to be used in determining comparative cost effectiveness. Since the procedure is essentially the same for each county, it is not described in detail in each section.

(4) Evaluation Summary

In the above paragraphs the proposed evaluation of Project ASTREA has been described. Our review of the project reveals that it was implemented in a manner such that original objectives may be evaluated. Data is available, with one notable exception, to provide an evaluation of the five evaluation components. This exception is in the area of crime incidence. A procedure to extract from the records partially comparable crime incidence data was identified and described in the preceding paragraphs.

3. KERN COUNTY

Kern County is the third largest county in California encompassing 8,064 square miles. One-third of the County is flat valley floor ranging from 200-400 feet in elevation. The valley is surrounded by mountains ranging to 8,000 feet above sea level.

The valley area is devoted to agricultural and oil production. The vastness of the rural area of the county has made the detection

and apprehension of thieves, especially at night, nearly impossible. For this reason the Sheriff's Department instituted a program of rural night helicopter patrol.

Pursuant to CCCJ Grant Number 0536 the Kern County Sheriff's Department acquired one Bell Model 47G-3B-2 helicopter. Helicopter patrol operation began on October 20, 1971.

(1) Operational Summary

Project CO-OP (Crime Oriented-Optimum Patrol) was funded on July 1, 1971. The aircraft was picked up in September 1971 and the first patrol flight was made on October 20, 1971. An extension of first year funding was granted through October 31, 1972. Second year funding was sought and subsequently granted through October 31, 1973.

Project CO-OP is assigned to the Criminal Bureau. The Criminal Bureau Chief Deputy acts as Project Director. Two pilots and one observer are assigned to the program.

The principal function of CO-OP is to provide a scheduled night patrol of rural Kern County. A helicopter patrol area has been established in the vicinity of Bakersfield covering some 3,000 square miles. Assigned hours are 9:00 p.m. - 5:00 a.m. Wednesday through Sunday.

The patrol program utilizes a "chase car" concept. That is the helicopter works regularly with an assigned patrol car. The patrol car is in fact manned by the third helicopter crew member on a rotating basis. When in the area and at the discretion of the pilot, the helicopter assists other law enforcement agencies.

The Kern County helicopter is quite active having been flown nearly 1,800 hours since program inception. The regularly scheduled patrol occupies nearly all of the available helicopter flight time; as such, the helicopter has been used only nominally in other activities. Medical evacuations, and searches and

rescues participated in by the helicopter unit number less than ten. Recently the helicopter has been used as an observation platform during rural union disputes.

(2) Project Objectives

The objectives of Project CO-OP as contained in Grant Request Number 0536 are as follows:

- . Reduce crime
- . Assist in search and rescue
- . Provide assistance to other county agencies.

As has been indicated in the project operational summary, the mode of operation has been such that the objective of reducing crime in the rural areas of the county is of paramount importance.

(3) Project Evaluation

As indicated above, the principal objective of Project CO-OP is to reduce crime in the patrol area. It is important to note that the patrol area is essentially rural. For this reason, the principal focus of the evaluation will be directed at determining the effect the project has had on rural crimes. As will be subsequently discussed, other evaluation measures will be used; however, due to the focus of the Kern County project there is somewhat limited comparability between this project and any other project within the cluster. It is important to note that the references to noncomparability or uniqueness of Project CO-OP should in no way be construed as indicating the focus of the project is incorrect, rather, only that the focus is different.

Program Implementation and Operation Activity

Exhibit III, following this page, summarizes data elements and data sources for this component of project evaluation. The purpose of this step in the evaluation is to describe the project

PROGRAM IMPLEMENTATION AND OPERATION
KERN COUNTY

ELEMENT

DATA SOURCE

I. Project Background

- | | |
|--|---|
| <ul style="list-style-type: none">. Impetus for Project. Grant Date. Implementation Date<ul style="list-style-type: none">- Reason for Delay. Equipment<ul style="list-style-type: none">- Helicopter Model- Altitude Performance- High Intensity Lights- Litter Capacity- Communications Capabilities- Other Special Features- Method of Maintenance. Staffing<ul style="list-style-type: none">- Administrative Responsibility- Pilots/Observers<ul style="list-style-type: none">.. Recruitment.. Training. Perceived Problems | <ul style="list-style-type: none">Project Staff InterviewsReview of ReportsReview of Departmental OrdersHelicopter Maintenance Log |
|--|---|

II. Project Operation (January 1, 1972 - December 31, 1972)

- | | |
|--|--|
| <ul style="list-style-type: none">. Time in Air<ul style="list-style-type: none">- Total- Average Monthly/Daily | <ul style="list-style-type: none">Helicopter Daily Log |
|--|--|

PROGRAM IMPLEMENTATION AND OPERATION

KERN COUNTY

<u>ELEMENT</u>	<u>DATA SOURCE</u>
. Distribution of Time by Activity Type	Helicopter Daily Log
- Patrol	
- Search and Rescue	
- Training	
- Transit (Transportation or to Ferry Copter Somewhere)	
- Maintenance (Flight to Get to Maintenance)	
- Special Surveillance	
. Distribution of Activities Engaged in While on Patrol	Helicopter Daily Log
- Calls	
- Observations	
. Evaluation Year	Helicopter Daily Log
- Total Arrests	
- Total Assists to Other Agencies	
- Total Searches	

background and summarize numerical indices of project operation during the evaluation year. The resulting summary will facilitate an understanding of project implementation and operation. In the case of Kern County this summary will highlight the uniqueness of Project CO-OP as compared to the other projects.

Perceived Effectiveness of Helicopter Patrol

Three surveys will be conducted in Kern County to determine the perceived effectiveness of the current helicopter patrol project. These surveys will be designed to elicit the views of, (1) the general public, (2) law enforcement officers, and (3) agencies other than the Sheriff's Department which have utilized or participated in operations with the helicopter. The three surveys are described below.

. Community Survey - The purpose of the community survey is to elicit the attitude of the public served by the helicopter patrol as to whether or not they favor the project and whether or not they feel more secure as a result of the project. In addition, questions concerning program awareness will be asked.

In Section V, the proposed community attitude survey questionnaire is provided along with appropriate instructions. Since the served population in Kern County is rural, our target population is the rural residents of the patrol area. The Kern County Farm Bureau, which publishes a monthly news letter serving the target population, has agreed to include the general public questionnaire in their January or February mailing. Two thousand questionnaires will be distributed.

. Sworn Officers Survey - The format for the sworn officers survey is provided in Section V. Approximately 250 questionnaires will be required to cover the Department's sworn officers. The survey format is designed to elicit attitudinal information both from officers within the Department who have directly participated with the helicopter and from those with only passing knowledge of the project. In addition, space is allocated for suggestions from the officers responding to the survey.

. Other Agencies Survey - One of the three stated objectives of the Kern County project is to provide assistance to other agencies. In Section V, a structured interview

format for contacting other governmental agencies is provided. Consultant personnel will interview officials of five agencies to determine their use and opinions regarding Project CO-OP. Agencies to be contacted include the following:

- Bakersfield P. D.
- Shafter P. D.
- Wasco P. D.
- California Highway Patrol (local office)
- Kern County Fire Department

Effect on Incidence of Crime

As has been indicated, the primary focus of Project CO-OP is the reduction of rural crimes, mainly theft. For this reason, a major portion of our evaluation will be directed toward the analysis of the effect Project CO-OP has had on crime incidence.

The Sheriff's area of jurisdiction is structured on a traditional beat basis. Crime occurrence statistics are compiled by beat which will facilitate analysis. The following beats have been identified as essentially helicopter beats, and hence, crime incidence data will be extracted for analysis:

- . Bakersfield (all)
- . Delano (D-01, D-02)
- . Wasco (W-01, W-02, W-03)
- . Button Willow (BW-1, BW-2)
- . Taft (T-01, T-02, T-03)
- . Lamont (L-01, L-02, L-03)

The Department has, since October 1970, machine processed crime incidence data by beat and by hour of occurrence. The computer print-outs from this period of time until the present are available, although computer cards and tape are retained only for 15 months. For this reason, hand extraction from the print outs will be required.

It is our intention to extract monthly information by hour category for calendar year 1971 (pre-project year) and calendar

year 1972 (project year) and compare mean differences in crime occurrences by category to determine where and whether or not there is a statistically demonstrative difference in rates.

The following categories of crime will be analyzed:

<u>CODE</u>	<u>CRIME</u>
<u>13</u>	<u>Robbery</u>
13.52	Residence - Strongarm
13.53	Residence - Firearm
13.54	Residence - Knife or Cutting Instrument
13.55	Residence - Other Weapon
<u>14</u>	<u>Burglary</u>
14.11	Residence Night - Force Entry
14.12	Residence Night - Attempted Force
14.13	Residence Night - Unlawful Entry
14.41	Other Struct. Night - Force Entry
14.42	Other Struct. Night - Attempted Force
14.43	Other Struct. Night - Unlawful Entry
<u>17</u>	<u>Theft</u>
17.11	Theft of Hay
17.21	Theft of Mercury
17.41	Theft of Oil Field Equipment
17.51	Theft of Farm Equipment
17.61	Theft of Cattle/Livestock
17.71	Theft of Wire/Metal

Unfortunately, historical data prior to 1971 is much more limited. Annual data by crime category is available for 1969 and 1970. (Hourly information is not available). The annual data for these years for the principal categories will be extracted and utilized if a trend is apparent. At this point we do not believe the annual analysis will prove as fruitful as the previously described monthly and hourly comparisons.

Response Time

As stated in the Status Report, improved response time is not an objective of Project CO-OP. In addition, there is no method by which response time differentials can be measured under the current system of record keeping. For these reasons, response time differentials between helicopters and patrol cars will not be measured in Kern County.

The Kern County grant does list "assist in search and rescue" as a project objective. In the other counties this objective is being partially evaluated under the heading response time by a procedure designed to determine time saved by using the helicopter. Project CO-OP assisted in approximately ten searches and rescues during the evaluation year. The small number results from the following factors, (1) the helicopter is scheduled regularly at night and is thus not available for extended search and rescue use, (2) the qualified pilots are utilized at night and, thus, have little available flight time, and (3) other sources of aerial assistance for search and rescue are available in Kern County.

The limited search and rescue cases will be reviewed. If applicable, saved time will be calculated, if not the review will serve principally as an input to project background. (See Section V, for the Special Incident Reporting Format.)

Comparative Cost Effectiveness

Section V, describes the procedure and provides the instruments to be used in determining comparative cost effectiveness. Since the procedure is essentially the same for each county it is not described in detail in each section. We anticipate the use of fewer variables in the Kern County computation which may hinder inter-county comparison.

(4) Evaluation Summary

Project CO-OP as implemented has one principal objective which is, reduce the rate of rural crime (mainly theft) in the patrol area. As previously indicated, available flight time of both helicopter and crew are expended in scheduled rural patrol. Although historical crime occurrence data is not available, excellent monthly data has been maintained for the years 1971 and 1972 which should allow the measurement of the achievement of the primary project objective. However, due to the specialized deployment, evaluation of other objectives, (i.e., search and rescue, etc.), and comparative evaluation between Kern and the other projects may not be meaningful.

4. VENTURA COUNTY

Ventura County encompasses 1,884 square miles and extends from sea level to nearly 9,000 feet in elevation. The 1970 population was 374,520 inhabitants. There are nine incorporated cities within the County. The Sheriff assumes the responsibility for law enforcement services in the County's unincorporated areas and two cities - Thousand Oaks and Camarillo - by contract agreement.

On August 15, 1971 the Ventura County Board of Supervisors approved the County Sheriff's Department Helicopter Program (CCCJ Grant No. 0650). The Ventura County Helicopter Program commenced operations on September 23, 1971.

(1) Operational Summary

As previously indicated, the Ventura County Sheriff's Department began helicopter operations in September 1971. The Sheriff's Department General Order Number 61, "Activation and the Use of the Sheriff's Helicopter", dated September 28, 1971 provides the basis for Departmental helicopter operations. Our initial interviews confirm that present operations generally conform to those specified in this General Order and have remained essentially the same since project initiation.

(2) Project Objectives

The following six Helicopter Program objectives were specified in Ventura County Grant Request Number 0650:

- . Decrease response time
- . Increase patrol observation and integrate mobile patrol with helicopter patrol
- . Engage in rescue and search operations
- . Provide assistance and support in major disasters and civil disorders
- . Provide assistance to all law enforcement agencies in Ventura County
- . Reduce major crimes.

(3) Project Evaluation

In the Status Report several factors were identified which make the comparative evaluation of the Ventura program difficult. The most important consideration is that the Ventura helicopter program does not engage in patrol operations in the sense that the other three projects engage in patrol. There is no patrol area and program operating procedures exclude the possibility of swift response to calls. Essentially the Ventura helicopter is reserved in a state of readiness for special operations.

The above statements do not necessarily mean that the Ventura program is operating in an incorrect manner. However, they do indicate that the Ventura program is not comparable to the other counties' programs. In Section III, "Cluster Evaluation" it will be suggested that the Ventura project varies substantially from the cluster concept.

Despite the above, the remainder of this section will discuss the Ventura program in terms of the five evaluation components. The evaluation of Ventura's program can be accomplished within the context of these components and be useful to Ventura County, although, as suggested, comparability to other projects is limited.

Responsibility for the Helicopter Program is assigned to the Administrative Lieutenant who reports directly to the Under-sheriff. Two pilots are assigned to the program. There are no permanent observers assigned, an attempt is apparently made to assign observers on the basis of mission type, i.e., in a narcotics surveillance mission the observer would have narcotics experience.

During the first year of the program (July 1, 1971 - June 30, 1972) total flight time accumulated was 454.6. It should be noted that this average is somewhat higher when the first fiscal year is adjusted to reflect the period of time before the program became fully operational. However, at present the somewhat low, daily flight time average is being maintained.

The Ventura County helicopter is perceived mainly as a response vehicle. It is argued that in order to be available as a response vehicle, i.e., for emergencies, available flight time should not be used up in routine activities.

Ventura County's first annual report provides the following breakdown of major flight activities for the period July 1, 1971 - June 30, 1972:

- . Patrol - 249 hours
- . Search and Rescue - 73 hours
- . Fire Activities - 33 hours
- . Surveillance - 24 hours
- . Photography - 12 hours

It should be noted that general operating procedure requires that missions must be duly authorized in advance. This practice requires that even when airborne, the helicopter must secure authorization to divert from the initial mission before providing assistance.

Program Implementation and Operation Activity

Exhibit IV, following this page, summarizes data elements and data sources for this component of project evaluation. The purpose of this component is to summarize project background and to provide numerical indices of project operation during the evaluation year. The resulting summary and data elements will facilitate understanding of project implementation and operation and can provide comparative indicators of project orientation among projects.

Perceived Effectiveness of Helicopter Patrol

Three surveys will be conducted in Ventura County to determine the perceived effectiveness of the current helicopter project. These surveys will be designed to elicit the views of (1) the general public, (2) law enforcement officers, and (3) agencies other than the Sheriff's Department which have utilized the helicopter to provide services. The three surveys are described below:

Community Survey - The purpose of the community survey is to elicit the attitude of the public served by the helicopter as to whether or not they favor the project and whether or not they feel more secure as a result of the project. In addition, questions concerning program awareness will be asked.

In Section V, the proposed community survey questionnaire is provided along with appropriate instructions. It is our intention to distribute 2,000 questionnaires in Ventura County. At this writing a distribution vehicle has not yet been identified. It should be noted that since there has been no patrol area the necessity of sampling a specific population is eliminated. It should also be noted that, for the above reason the results of the community survey will not be directly comparable to the other communities because the respondents will not have been subjected to routine patrol.

Despite the above, we have in interviews with the pilots identified what they believe to have been the most relatively heavily patrolled area during the course of the project. This area is in the vicinity

PROGRAM IMPLEMENTATION AND OPERATIONVENTURA COUNTY

<u>ELEMENT</u>	<u>DATA SOURCE</u>
I. <u>Project Background</u>	
. Impetus for Project	. Project Staff Interviews
. Grant Date	. Review of Reports
. Implementation Date	. Review of Departmental Orders
- Reason for delay	. Organization Chart
. Equipment description	
- Special features	
. Staffing	
- Administrative responsibility	
- Pilots/observers	
.. recruitment	
.. training	
. Equipment	
- Helicopter Model	
- Altitude Performance	
- High Intensity Lights	
- Litter Capacity	
- Communications Capabilities	
- Other Special Features	
- Method of Maintenance	
II. <u>Project Operation</u> (January 1, 1972 - December 31, 1972)	
. Time in Air	Air Unit Daily Report
- Total	
- Average Monthly/Daily	
. Distribution of time by activity classification	
- Patrol	Air Unit Daily Report
- Search and rescue	
- Fire	
- Surveillance	
- Photography	
- Other	
. Evaluation Year	
- Total arrests	
- Total responses to critical incidents	
- Total assists to other agencies	
- Total property recovered	

of Camarillo. We will attempt to find a survey vehicle in this general area for questionnaire distribution, failing this we will utilize zip code zones 93010 and 93030.

Sworn Officers Survey - The format for the sworn officers survey is provided in Section V. Approximately 250 questionnaires will be required to cover the Departments' sworn officers. The survey format is designed to elicit attitudinal information both from officers within the Department who have directly participated with the helicopter and from those with only a passing knowledge of the project. In addition, space is allocated for suggestions from the officers responding to the survey.

Other Agencies Survey - An objective of the Ventura helicopter program is to provide assistance to other agencies. In Section V, a structured interview format for contacting other governmental agencies is provided. Consultant personnel will interview officials of five agencies to determine their use and their opinions regarding the helicopter program. Agencies to be contacted include the following:

- Ventura County Fire Department
- Ventura City Police Department
- Oxnard Police Department
- Federal Bureau of Investigation
- State Bureau of Narcotic Enforcement.

Effect on Incidence of Crime

Since the Ventura helicopter has not been used as a patrol vehicle and the total useage has been limited, we do not anticipate that there will be any correlation between the program and the incidence of crime. As was indicated in the Status Report, the Ventura Helicopter was used in two cities, namely the City of Ventura and Oxnard on limited concentrated patrols. The total time spent in patrol was approximately 30-40 hours in each city. We have investigated the possibility of examining the short term influence of the helicopter on crime in these two areas.

In the City of Ventura, data has not been compiled in a manner that facilitates such a comparison. However, in Oxnard monthly crime statistics are available such that some comparison of the short term affect of helicopter patrol on day time crimes is, at least, possible. (There have been no night patrol flights

in Ventura County.) For this reason, the helicopter would be unlikely to effect crime incidence rates for other than, perhaps, burglary and theft. We will examine monthly crime rates for these categories to determine whether or not a trend is present and test the actual deviation from this trend for statistical significance. It must be cautioned once again that, we do not believe the amount of patrol time is sufficient to establish significance. A second problem area lies in the fact that the number of day time crimes in Oxnard of the type which the helicopter is likely to suppress are minimal.

Response Time

Since "overheard" calls are not logged and the helicopter must receive prior authorization to respond when on the ground or airborne the measurement of response time to such events as "crimes in progress" is precluded. However, the helicopter has been utilized in a variety of special category responses.

Although the documentation is limited, it is possible to extract information on search and rescue, special surveillances, etc. The basic sources of such information are: helicopter flight log, personal recollections and record bureau reports. The latter reports are filed whenever an official report is required, such as an arrest report. We will extract available information on a sample of these incidents in an effort to determine the impact of the helicopter in terms of saved time, manpower or lives. In Section V, the Special Incident Reporting Format is provided.

Comparative Cost Effectiveness

Section V describes the procedure and provides the instruments to be used in determining comparative cost effectiveness. The procedure can be implemented in Ventura County and should yield results useful to the Ventura County Sheriff's Department. However, due to the vast dissimilarity of the Ventura project with the other projects inter-county comparisons may not be meaningful.

(4) Evaluation Summary

Our review of the Ventura helicopter program indicates that some of the programs operating procedures preclude measurement of objectives common to the project cluster. The above described evaluation can be implemented and be of value to Ventura County. However, we believe it will not yield results comparable to other cluster projects.

III. CLUSTER EVALUATION

III. CLUSTER EVALUATION

An objective of CCCJ in the present project is to evaluate the cluster of four helicopter projects by identifying common objectives and common measurement criteria, and to "explore the potential for building a program from each cluster of projects as well as developing impact oriented objectives for this program (CCCJ Request for Proposal, p. 3). In this section the evaluation of the cluster as a whole is discussed. Some of the information, including Exhibit V, has been reproduced in its entirety (with some updating) from the Status Report. We have followed this course because we believe the issues raised with respect to comparability of objectives and comparability of data should be fully discussed by the Evaluation Advisory Committee at this juncture in the project.

1. COMPARABILITY OF OBJECTIVES

In the individual project summaries (Section II of the current report and of the Status Report) the objectives of each project as identified in their grant request are enumerated. As shown in Section II of the Status Report, in many cases program implementation procedures did not support the enumerated objectives. Our initial review indicates that two projects apparently are reasonably comparable with respect to objectives and two of the projects are not comparable except in a limited way to any of the other projects.

- . Comparable projects - San Diego and San Bernardino. Similarities of the San Diego and San Bernardino programs include:
 - scheduled day and night patrols over reasonably fixed areas
 - pilot discretion to answer calls during time of patrol
 - a charter to respond to special situations, (i.e., medical evacuations, search, rescue, etc.) exists.
- . Limited comparability projects - Kern and Ventura. Factors which make these projects non-comparable include:

CONTINUED

1 OF 2

- Kern County - The Kern County program has a single primary purpose. That purpose is the suppression of rural crime, mainly theft. To effect this suppression a rural scheduled night patrol is maintained. Almost no other activities are participated in by the helicopter unit.
- Ventura County - The Ventura County helicopter is used primarily as a response vehicle. Area patrol in the sense that it is engaged in the other projects is not used in Ventura County.

The above discussion of comparability of objectives was included in the Status Report. Our further analysis of the project documentation as well as our return visits to the projects has convinced us that the original analysis was essentially correct. The implications this situation contains for cluster evaluation will be discussed subsequently in this section.

2. COMPARABILITY OF DATA

Exhibit V, following this page, summarizes evaluation component activities and their applicability to each county. The Exhibit, which is self explanatory, has been updated from the Status Report, where necessary, based upon our further analysis. As can be seen, in some instances where objective comparability exists, the lack of data will hinder or prohibit comparisons.

3. CLUSTER HELICOPTER PROGRAM

At this point it is necessary to preliminarily comment on whether or not the evaluation of the four helicopter patrol projects as a program cluster is or is not possible. As has been shown in sub-sections 1 and 2 above, the San Diego and San Bernardino County helicopter programs have reasonably similar objectives and, while data gaps exist there remains sufficient data for at least partial evaluation of the five evaluation components. We therefore conclude that these programs can in fact be evaluated as a cluster.

The Kern County program presents a somewhat different situation. The program has narrow objectives (i.e., rural night patrol) and program implementation has adhered rather strictly to this objective.

CLUSTER EVALUATION

EVALUATION COMPONENT ACTIVITY	APPLICABILITY TO COUNTY				CLUSTER COMPARISONS
	SAN DIEGO	SAN BERNARDINO	KERN	VENTURA	
Perceived Effectiveness Community Survey	Survey of patrol area possible if survey vehicle is found.	Patrol configuration makes survey difficult.	Survey of patrol area possible.	No patrol area exists, general survey of county possible.	San Diego San Bernardino Kern
Sheriff's Ground Patrol Officers	Can be accomplished, survey of other departments officers desirable.	Can be accomplished.	Can be accomplished.	Can be accomplished.	All counties.
Other Agencies	7 agencies identified.	5 agencies identified, project does not stress other agency support.	5 agencies identified.	5 agencies identified	San Diego Kern Ventura
Affect on Incidence of Crime	Will be difficult to demonstrate, historical and areally comparable data lacking.	Data Available	Data Available	No effect expected due to operating procedures, i.e., no fixed patrol.	To a limited extent: San Bernardino Kern
Cost Effectiveness	Comparative formula can be implemented.	Comparative formula can be implemented.	Comparative formula can be implemented.	Comparative formula can be implemented. (Many missing data elements)	Methodology allows for some limited intercounty comparison.

CLUSTER EVALUATION

EVALUATION COMPONENT ACTIVITY	APPLICABILITY TO COUNTY				CLUSTER COMPARISONS
	SAN DIEGO	SAN BERNARDINO	KERN	VENTURA	
Perceived Effectiveness Community Survey	Survey of patrol area possible if survey vehicle is found.	Patrol configuration makes survey difficult.	Survey of patrol area possible.	No patrol area exists, general survey of county possible.	San Diego San Bernardino Kern
Sheriff's Ground Patrol Officers	Can be accomplished, survey of other departments officers desirable.	Can be accomplished.	Can be accomplished.	Can be accomplished.	All counties.
Other Agencies	7 agencies identified.	5 agencies identified, project does not stress other agency support.	5 agencies identified.	5 agencies identified	San Diego Kern Ventura
Affect on Incidence of Crime	Will be difficult to demonstrate, historical and areally comparable data lacking.	Data Available	Data Available	No effect expected due to operating procedures, i.e., no fixed patrol.	To a limited extent: San Bernardino Kern
Cost Effectiveness	Comparative formula can be implemented.	Comparative formula can be implemented.	Comparative formula can be implemented.	Comparative formula can be implemented. (Many missing data elements)	Methodology allows for some limited intercounty comparison.

CLUSTER EVALUATION

EVALUATION COMPONENT/ACTIVITY	APPLICABILITY TO COUNTY				CLUSTER COMPARISONS
	SAN DIEGO	SAN BERNARDINO	KERN	VENTURA	
Response Time . Calls (crime in progress, etc.)	Special survey implemented	Special survey implemented necessary.	Not a project goal.	Prior permission needed before response is authorized.	San Diego San Bernardino
. Special Activities (search, rescue, medical evacuation, etc.)	Can obtain data from sample of incidents.	Can obtain data from sample of incidents.	Participate infrequently in special activities.	Can obtain data from sample of incidents.	San Diego San Bernardino Ventura
Program Implementation and Operation Activity	Data available, some computer summaries.	Data available, some summaries exist.	Data available, must be summarized	Limited data available.	All counties.
Previous Evaluation (Status)	Extremely limited prior evaluations.	Annual summary of activities.	Limited: Quarterly summary of activities.	Limited: Monthly and quarterly summary of activities.	Evaluations to date are almost non-existent in all counties.

For this reason, a comparison of Kern County with San Bernardino and San Diego is not particularly meaningful in several areas (especially response time). However, since the principal function of the cluster evaluation is to evaluate helicopter patrol and Kern County has adhered most closely to this function we believe that the project falls within the definition of the cluster.

The final project, Ventura County, we do not believe lends itself well to inclusion in the cluster comparison. The program as implemented does not carry on patrol in the sense that it is carried out in the other counties. As has been shown, the Ventura helicopter unit has been used principally as a special response vehicle. The five evaluation components apply to Ventura in the following manner:

- . Response time - Since prior permission is required before a response is authorized, response time can not be evaluated for crime in progress calls, etc. Limited information can be obtained for special activity responses i.e., search and rescue.
- . Effect on incidence of crime - it is doubtful that an effect can be demonstrated.
- . Perceived effectiveness - the surveys can be implemented. However, the results of the community survey will not be comparable to other county areas where a patrolled area was surveyed.
- . Cost effectiveness - the cost effectiveness methodology can be utilized. Inter-county comparisons are not likely to be meaningful because of dissimilarities in programs
- . Program implementation and operation activity - limited information is available to describe this component.

We believe the above suggests that the Ventura program will not provide a meaningful cluster comparison. The Ventura project can, of course, be individually evaluated by the methodology set forth in Section II. We expect to discuss this course of action with the Evaluation Advisory Committee during review of this report.

4. CLUSTER IMPACT OBJECTIVES

Each of the projects within the cluster and the cluster as a whole will be evaluated in terms of the five evaluation components:

- . Program Implementation and Operation Activity
- . Perceived Effectiveness of Helicopter Patrol Projects, by:
 - community
 - ground patrol officers
 - other governmental agencies utilizing helicopter services
- . Effect on Incidence of Crime
- . Response Time
- . Comparative Cost Effectiveness.

Many of the objectives stated in the individual project applications are not impact oriented. However, we believe the five evaluation components encompass the objectives of each of the projects. Exhibit VI, following this page, provides the impact oriented objectives associated with each evaluation component and relates these impact objectives to the objectives contained in the individual project applications. As can be readily seen, the evaluation component impact objectives encompass all of the individual project objectives. In fact, many implied objectives as well as the stated objectives are included.

IMPACT ORIENTED OBJECTIVES ^{1/}

RELATIONSHIP TO INDIVIDUAL PROJECT OBJECTIVE

EVALUATION COMPONENT	IMPACT ORIENTED OBJECTIVE	SAN DIEGO	SAN BERNARDINO	KERN	VENTURA
Perceived Effectiveness • Community	The Community Will Believe Themselves More Secure As A Result of the Helicopter Program.	Assumed	Assumed	Assumed	Assumed
• Sworn Officers	Departmental Officers Will Believe Themselves More Secure As A Result of the Helicopter Program.	(7)	Assumed	Assumed	Assumed
• Other Governmental Agencies	Agencies Utilizing the Helicopter Will Believe the Helicopter To Be An Effective Tool In Achieving the Agencies Mission.	Implicit in Program But Not Included As An Objective.	(6)	(3)	(4,5)
Response Time • Crimes in Progress	Improved Response Time To Crime In Progress Calls.	(1,3,6)	(5)	Not An Objective	(1)
• Special Situations (Search and Rescue, Natural Disasters, Medical Evaluations, Etc.)	Improved Handling of Special Situations (Measured In Terms of Time Saved, Lives Saved, Lower Costs, Etc.).	(4,5)	(2,3,4)	(2)	(3,4)
Effect on Incidence of Crime	Reduce Crime Rate (Statistically Demonstrative For Particular Crimes In A Specific Area).	(2)	(1)	(1)	(2,6)
Cost Effectiveness	Helicopter Patrol Car Team Should Be the Least Expensive Means of Achieving Program Objectives.	Assumed and (3)	(2)	Assumed	Assumed
Program Implementation and Operation Activity	The Helicopter Program Should Be Implemented In Accordance With Stated Plans.	NA	NA	NA	NA

^{1/} Key on following page.

IMPACT ORIENTED OBJECTIVES

KEY

1. N. A. = Not Applicable
2. Assumed = Objective is not so stated; however, it is generally assumed that this is a project objective.
3. Numbers, (1, 2, etc.) relate to numbered objectives of individual project. Objectives are repeated below.

SAN DIEGO

1. Improve response time (especially in less populous areas).
2. Increase surveillance of high crime rate areas.
3. Increase effectiveness and efficiency of patrol observation.
4. Improve emergency medical service capability in remote areas.
5. Increase efficiency and effectiveness in search and rescue.
6. Enhance capability to respond rapidly and effectively to special enforcement situations.
7. Improve officer security and indirectly morale.

KERN

1. Reduce crime.
2. Assist in search and rescue.
3. Provide assistance to other county agencies.

SAN BERNARDINO

1. Reduce crime through concentrated patrol efforts in unincorporated high crime areas.
2. Save lives in search and rescue efforts.
3. Aid in riot control.
4. Serve as an observation platform during natural disasters.
5. Provide quick response to "crime in progress" calls.
6. Provide assistance to other agencies.

VENTURA

1. Decrease response time.
2. Increase patrol observation and integrate mobile patrol with helicopter patrol.
3. Engage in rescue and search operations.
4. Provide assistance and support in major disasters and civil disorders.
5. Provide assistance to all law enforcement agencies in Ventura County.
6. Reduce major crimes.

IV. ASSESSMENT OF EVALUATION COMPONENTS

IV. ASSESSMENT OF EVALUATION COMPONENTS

The original CCCJ Request for Proposal specifies, in some detail, page 7, under the heading "Assessment of Evaluation Components," the factors to be considered in evaluating the evaluation components of each project. At the outset of this section it must be stressed that none of the four helicopter patrol projects implemented an evaluation component of the nature referred to in the Request For Proposal. With the exception of some attempt to show the effect of helicopter patrol on crime rates, all evaluation which took place was descriptive in nature. In none of the projects were any of the following evaluative tools used:

- . Statistical tests
- . Pre-project base line data files
- . Control groups
- . Random samples
- . Quantified objectives.

The above comments are not included to denigrate individual projects but, rather to strongly indicate that it is not possible on an individual project basis to review each evaluation component in the depth suggested in the RFP.

In the following paragraphs each individual evaluation component (as proposed) and the resulting project evaluations are briefly discussed.

1. SAN DIEGO

The evaluation component as described in San Diego's grant application is comprehensive. The intended evaluation anticipates the use of statistical techniques, sampling and surveys. The grant application lists the following personnel who were to be assigned to the evaluation:

- . Project director (evaluation)
- . Senior systems analyst
- . Programmer analyst
- . Clerk typist.

The evaluation as outlined was never implemented. It is our understanding that the funding anticipated by San Diego from CCCJ for the evaluation did not materialize.

The evaluation which was eventually implemented in San Diego is largely descriptive. The major document, entitled, "Project ASTREA" October 1971 - March 1972, provides a good background of the start up phases of Project ASTREA. A second document dated April 20, 1973 entitled, "Helicopter Program - Evaluative Summary" essentially relates to the evaluation period of this report. The material contained in this evaluation report is descriptive.

2. SAN BERNARDINO

Essentially, the San Bernardino grant application does not contain an evaluation component. Despite this, considerable descriptive information has been maintained by the San Bernardino project which will contribute to the present evaluation. The document, "Aviation Division - 1972 Annual Report" provides a good summary of this information for the evaluation year.

3. KERN COUNTY

As in the case of San Bernardino, the Kern County grant application has almost no evaluation component. Kern County has submitted quarterly reports to CCCJ during the grant period. These reports describe in some detail the previous quarter's activities. In addition, rural theft in the patrol area in 1972 is compared to pre-patrol rural theft in the same area. The present evaluation will extend these efforts.

4. VENTURA COUNTY

The Ventura County grant application proposes an in-house evaluation with evaluation responsibility assigned to the Sheriff's (Administrative) Lieutenant. The evaluation as proposed is largely descriptive.

The document entitled, "Ventura County Sheriff's Department, Helicopter Program #0650, 1 July 1971 - 30 June 1972 - Final Evaluation" summarizes operations for most of the current evaluation year.

5. SUMMARY

In the preceding pages the overall lack of statistical evaluation in the helicopter patrol project cluster has been discussed. We do not propose to deal at any great length in the final report with this situation. We believe the ultimate goal will be better served by suggesting appropriate means of future evaluation for similar projects.

V. DATA COLLECTION INSTRUMENTS AND METHODOLOGY

The purpose of this section is to provide the data collection instruments which are common to the cluster projects. In addition, certain methodological procedures which are common to all projects are presented. The information contained in this section is designed to be read and understood in conjunction with the individual project summaries.

The following data collection instruments with appropriate methodological discussion are presented in this section:

- . Community Survey
- . Sworn Officers Survey
- . Other Governmental Agency Structured Interview Format
- . Special Incident Response Time Data Form
- . Comparative Cost Effectiveness.

1. COMMUNITY SURVEY

Exhibit VII, following this page, depicts the proposed community survey form and instructions.^{1/} Individual surveys are discussed in some detail in each individual project summary under the heading "Perceived Effectiveness of Helicopter Patrol".

Two thousand questionnaires will be mailed to patrol area residents in each county. The survey instrument, as depicted, is designed to fit on a single three by five inch card. Actual card size within each community may be dependent upon the final mailing vehicle as envelope stuffing machines have varying requirements.

It is anticipated that approximately 50 percent of questionnaire recipients will respond to the survey. The responses will be mailed to the individual departments. The results will be key punched for machine tabulation.

^{1/} The San Diego survey was distributed on December 24. A slightly different format was required due to the requirements of the Water District providing the mailing vehicle.

V. DATA COLLECTION INSTRUMENTS AND METHODOLOGY

COMMUNITY SURVEY

Dear _____ County Resident:

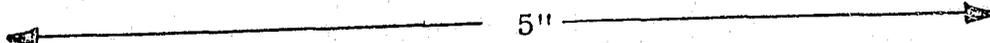
On the attached card are four questions concerning the _____ County Sheriff's Department helicopter program. As part of your Sheriff's Department efforts to provide better law enforcement, we are evaluating this program. I would appreciate your taking a few moments to answer the brief questions and drop the return postage paid card in the mail.

Sincerely,

County Sheriff

POSTAGE AND
FEES PAID

COUNTY SHERIFF
MUNICIPAL BUILDING
COUNTY, CALIFORNIA 99999



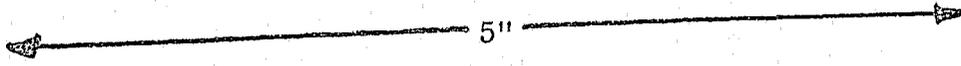
COMMUNITY SURVEY

Please complete the bottom portion of this card. Detach and drop in the mail.

NO POSTAGE IS REQUIRED

1. Have you heard of the Sheriff's Department helicopter program?
YES NO
2. Have you personally observed the activities of the Sheriff's helicopter?
YES NO
3. Are you in favor of continuing the helicopter program?
YES NO
4. Do you feel more secure as a result of the program?
YES NO

5. Comments: _____



2. SWORN OFFICERS SURVEY

Exhibit VIII, following this page, provides the format for the sworn officers survey. The questionnaire is designed to be completed by all Sheriff's Department sworn officers in each jurisdiction. The questionnaire is self explanatory. Each Department will distribute the survey. Individual responses will be returned in sealed envelopes, and, hence, are confidential. The survey results will be key punched for machine tabulation

HELICOPTER PROGRAM SURVEY

Sir:

For some period of time your Department has utilized the helicopter in a program designed to aid the law enforcement function in a variety of ways. This program is now being studied for evaluation.

Comprehensive evaluations of projects which effect Departmental service must consider factual/objective "in-put" from each member of the Department.

Because you, as a Police Officer, are both a user and a beneficiary of the helicopter program, your cooperation in completing this questionnaire will be of immeasurable assistance in assuring an effective evaluation.

Thank you.

1. Which one of the following best describes your current primary job function?

- | | |
|------------------------------|--------------------------|
| 1. Field Patrol | <input type="checkbox"/> |
| 2. Investigation (Detective) | <input type="checkbox"/> |
| 3. Prisoner Detention (Jail) | <input type="checkbox"/> |
| 4. Traffic Control | <input type="checkbox"/> |
| 5. Supervisor/Administrator | <input type="checkbox"/> |
| 6. Technical Services | <input type="checkbox"/> |

2. Do you consider the crime problem existing within the jurisdiction of your Department a serious one? Yes No

3. In your opinion, has the helicopter aided in deterring criminal activity within your Department's jurisdiction? Yes No

4. Do you consider Crime Reduction as a most important function of the law enforcement helicopter? Yes No

5. Do you believe the effectiveness of your Department's basic police function, "Protection of Life and Property" has been improved by application of the helicopter?
1. Considerably
 2. Slightly
 3. Not at all
 4. Effectiveness has decreased
6. Do you believe the helicopter is of value to you in your particular job function? Yes No
7. In your opinion, have the following (listed below) accepted your Department's helicopter program as an effective law enforcement tool?
1. The general public Yes No
 2. Fellow department officers Yes No
 3. Other agency officers in your area Yes No
8. Do you feel the helicopter program has caused any degree of personnel problem in your Department (i.e., "elite" air crew vs ground troops type of situation)? Yes No
9. In your opinion, do you feel that services provided by your helicopter have been effective enough to merit continuation, or even increase of, the helicopter program?
1. Increase
 2. Continue about the same
 3. Decrease or eliminate
10. Have you been involved personally with the utilization of the helicopter in a field function? Yes No
11. Have you been involved personally with the utilization of the helicopter on any case assigned to you? Yes No

12. Have you been involved with utilization of the helicopter as a Supervisor/Administrator of units/personnel which have worked directly with the helicopter? Yes No

NOTE: If you have answered "yes" to any of the above three questions concerning "personal" involvement, please complete any of the following which apply, (if not, skip to suggestions).

Do you, as a field officer, feel more secure while performing certain hazardous field functions if the helicopter is present? Yes No

As a supervisor/administrator, have you observed that field officers display an increased sense of security if the helicopter is present in certain field functions? Yes No

While working jointly with air crews, have you found the overall tactics, coordination and cooperation to be generally satisfactory? Yes No

As an investigator, supervisor or administrator have you observed, overall, that air-ground, and/or air tactics, coordination and cooperation have been generally satisfactory? Yes No

SUGGESTIONS

The aerial support concept - helicopter of fixed wing - is the tool of the functioning officer. How well a tool does a job depends on how well the tool is being used. You are the user. As the user, and no matter how minor it may seem to you, what suggestions would you offer which you feel could make the helicopter program more efficient? (Suggestions might include tactics, availability, type equipment used, support equipment, more helicopters required, etc.)

3. OTHER GOVERNMENTAL AGENCY STRUCTURED INTERVIEW FORMAT

The questionnaire to be used in surveying county agencies which have utilized or have been involved in operations with the helicopter is provided in Exhibit IX, following this page. In the individual project summaries the agencies to be contacted in each county were identified.

For the most part, the agency interviews are to be on-site personal contacts. As can be seen, the format provides for a brief introductory discussion. Following this discussion, five attitudinal questions are asked followed by suggestions for program modification. The responses and suggestions will be hand tabulated by the consultant. Individual agency responses will not be divulged.

OTHER GOVERNMENTAL AGENCY
STRUCTURED INTERVIEW FORMAT

AGENCY _____

NAME OF INTERVIEWEE _____

I. Introductory Topics

1. Description of purpose of visit
 - . Independent evaluation of Sheriff's Department helicopter program.
 - . Confidential nature of interview
 - . Interview format
2. Role of interviewed agency
3. Role of interviewee in agency

II. Specific Attitudinal Questions

1. In your position have you been involved in a liaison capacity with the Sheriff's helicopter program?

Yes _____

No _____

Explain _____

2. Are the procedures by which your agency can receive the services of the Sheriff's helicopter:

Well defined _____

Poorly defined _____

Explain _____

3. In your opinion, are the services of the Sheriff's helicopter available to your agency when needed?

Always _____

Usually _____

Seldom _____

Explain _____

4. How would you characterize the contribution received by your agency for missions which involved the Sheriff's helicopter?

Very significant _____

Moderately significant _____

Slightly significant _____

Not significant _____

5. Do you believe the Sheriff's helicopter program as it relates to your agency should be:

Expanded _____

Curtailed _____

Remain about the same _____

III. Interview Conclusion

1. Suggestions for helicopter program modifications.

4. SPECIAL INCIDENT DATA FORM

Exhibit X, following this page, provides the Special Incident Data Form to be used in obtaining information in each of the counties on search and rescue, medical evacuation, fire support operations, etc. As pointed out in the individual project summaries, the number of incidents, type of incidents, and the availability of data related to individual incidents varies widely among projects. For this reason complete standardization in this line of analysis is not possible.

SPECIAL INCIDENT DATA FORM

COUNTY: _____
TYPE OF INCIDENT: _____
DATE OF INCIDENT: _____

Brief description of incident (attach detailed description on separate sheet, if available): _____

Time advised of incident: _____ Means _____

Time deployed: _____

Duration (deployment to completion): _____

List other Sheriff's Department units participating: _____

List other agency units participating: _____

What was principal contribution of helicopter? _____

What was the primary result of the incident, i.e., lost person found, body removed, fire extinguished: _____

Was the same result possible without helicopter: Yes ___ No ___

If yes, explain how and in what manner, i.e., recreate incident without helicopter: _____

SUMMARY:	WITH HELICOPTER	WITHOUT HELICOPTER
Time Utilized		
Manpower Utilized		
Operation Cost		
Other:		
Source of information:		

5. COMPARATIVE COST EFFECTIVENESS

In this sub-section the procedure and the data collection instruments to be used in determining comparative cost effectiveness are presented. The discussion is included in this section for two reasons, (1) the procedure is essentially common to all counties, and (2) the detailed discussion required to explain the system would result in excessive redundancy if included in the individual project summaries.

The comparative cost effectiveness technique provides the basis for obtaining a numerical comparison between the two activities, helicopter patrol operating in its regular mode, and strictly patrol car patrol. The concept of cost is introduced by comparing equal amount of service from a cost standpoint.

It must be stressed that this formulation is comparative cost effectiveness and not cost effectiveness in terms of cost expenditures measured against a flow of benefit and/or service returns. The formulation measures how well the helicopter accomplishes the objectives set forth in comparison to what patrol units alone could do. Previously, the term "helicopter operating in its regular mode" was used. By this we mean the helicopter operating with patrol units, special units, a chase car, etc. That is to say, we are comparing the helicopter as it is operating at present in an individual county with a situation where helicopters are not available and the same objectives were to be accomplished.

The following equation summarizes the computation:

$$A_1 \cdot W_{H1} + A_2 \cdot W_{H2} \dots A_N \cdot W_{HN} = \text{Helicopter Operating Effectiveness}$$

Where:

$A_1 - A_N$ = Activity importance rating, i.e., crime incidence, response time, community attitudes, etc.

$W_{H1} - W_{HN}$ = Weighted relative effectiveness of helicopter patrol activities ($A_1 - A_N$)

$W_{P1} - W_{PN}$ = Weighted relative effectiveness of patrol car patrol activities ($A_1 - A_N$)

In order to implement the above formula three important pieces of information are required. These are:

- . Activity importance ratings
- . Equivalent patrol car units which could be supplied for the cost of normal helicopter operations.
- . Relative effectiveness ratings.

(1) Activity Importance Ratings

Activity importance ratings for each project will be based upon the following:

- . Helicopter Project Objectives Questionnaire, to be administered to department and program officials
- . Original project goals
- . Qualitative judgement of the consultant.

The proposed Helicopter Project Objectives Questionnaire is included as Exhibit XI, following this page. The questionnaire will be completed by about ten representative individuals in each department. The respondent list will be similar to the following:

- . Sheriff and/or Undersheriff
- . Departmental Planning Bureau
- . Patrol Bureau Chief and Officer Representative (non helicopter)
- . Project Director
- . Helicopter Pilot
- . Frequently Assisted Other Agency

From the list of activities contained in Exhibit X a maximum of eight will be selected. A total of 40 points will be distributed over the eight or less activities in each county. The distribution of weights to be determined by:

- . Scored rankings obtained in survey
- . Project objectives
- . Qualitative judgement.

HELICOPTER PROJECT OBJECTIVES QUESTIONNAIRE

Dear Sir:

As you are aware the _____ County Sheriff's Department helicopter patrol project is being evaluated by an outside consultant. Because of your knowledge of the helicopter program you are being asked to take a few minutes to complete the following form.

The list following this instruction provides functions of the law enforcement helicopter. While there may be other functions of a helicopter program we have listed 15 of the most important. We would appreciate your reviewing the entire list and then ranking all functions 1 through 15. The rankings represent your opinion.

Example:

Rank 1 = most important function

Rank 2 = second most important function

Rank 15 = least important function

All functions should be ranked, and all numbers 1 through 15 used.

Thank you for your cooperation.

<u>FUNCTION</u>	<u>RANK</u>
Increase the effectiveness of search and rescue operations in remote areas	_____
Reduce or slow the rate of growth in the crime rate	_____
Reduce time to locate lost persons in metropolitan areas	_____
Enhance officer safety	_____
Improve response time to crimes in progress	_____
Increase apprehension of criminal suspects	_____
Provide medical aid and evacuation services	_____

FUNCTION

RANK

Provide medical service to remote areas	_____
Assist other law enforcement agencies	_____
Assist other non law enforcement agencies in the County.	_____
Reduce seriousness of civil disorders	_____
Increase surveillance effectiveness in specified areas and for specific offenses	_____
Aid in natural disasters	_____
Provide the public with a greater sense of security	_____
Enhance the public image of the law enforcement agency	_____

It is important to note that the full 40 activity points will be allocated in each county. This procedure will facilitate inter-county comparisons.

(2) Cost

As indicated, it is necessary to determine the helicopter program cost and patrol car cost. This is necessary in order to determine the number of patrol units which could be provided with the equivalent expenditure as the helicopter program.

Helicopter program costs will be extracted based upon the experience of the individual county. The following format will apply:

HELICOPTER PROGRAM COSTS

Fixed Costs

Personnel	\$
Services/supplies	
Other (Rent, etc.)	_____
TOTAL FIXED COSTS	\$ _____

Variable Costs

Fuel, oil, etc.	\$
Maintenance	
Routine and Overhaul Parts	
Time Life Retirement Parts	_____
TOTAL VARIABLE COSTS	\$ _____

Using the above data, hourly and monthly operating costs for each program will be calculated.

Patrol car costs will be based upon established contract city cost arrangements. San Diego and San Bernardino Counties have supplied their respective contract cost figures. If

contract costs are not available in Kern and/or Ventura Counties, an average of the available counties contract prices will be used.

As a final result, the number of patrol cars which can be supplied for the cost of the helicopter program will be calculated.

(3) Relative Effectiveness Ratings

The final numeric index required is the weighted relative effectiveness rating. For each selected activity, the helicopter (with patrol car, etc.) and the calculated additional patrol cars deployable will receive a relative effectiveness rating. The following ratings will apply:

- . Very effective (point score 4)
- . Effective (point score 3)
- . Moderately effective (point score 2)
- . Slightly effective (point score 1)
- . Not effective (point score 0)

The determination of the effectiveness rating will result from the previous evaluation components as interpreted by the consultant and reviewed with project personnel.^{1/}

(4) Summary

The comparative cost effectiveness procedure provides a logical framework within which to provide a quantifiable comparison between helicopter teams and additional patrol cars operating alone. The procedure will also provide for numeric comparisons among cluster counties.

In the preceding text, the weaknesses of the formulation have been identified, i.e., use of judgemental qualification.

^{1/} In this system if the helicopter patrol car team were ranked very effective for all activity categories, the total point score would be 160 i.e., very effective (4) X total activity points (40) = 160.

Despite this weakness, we believe the procedure as described has considerable merit. We only wish to caution that the user should not impute a meaning to the final numbers beyond what can legitimately be implied.

VI. WORK PLAN AND STAFFING SCHEDULE

VI. WORK PLAN AND STAFFING SCHEDULE

Exhibit XII, following this page, provides an updated Work Plan and Staffing Schedule for the Helicopter Patrol Project Cluster Evaluation. The updated schedule provides for somewhat more time in Phase II than did the original Work Plan and Staffing Schedule (Exhibit II - Arthur Young and Company proposal). The total man-hours estimated for the project remains the same.

The schedule anticipates commencement of Phase II in mid-January following review of the Phase I Report. Assuming this date is met, we anticipate project completion on schedule.

UPDATED WORK PLAN AND STAFFING SCHEDULE
HELICOPTER PATROL PROJECTS

TASK	1973			1974				AY & CO.	SUB-CONTRACTOR
	OCT	NOV	DEC	JAN	FEB	MAR	APR		
1. INITIATE PROJECT AND SUBMIT PROGRESS REPORT	COMPLETED								
2. DEVELOP PROCEDURES TO BE USED IN EVALUATION	COMPLETED								
3. ASSESS THE PROJECT EVALUATION COMPONENTS	COMPLETED								
4. PREPARE PHASE I REPORT			SUBMITTED FOR REVIEW	JANUARY, 1974					
5. COLLECT DATA FOR PROJECT AND CLUSTER EVALUATION				—————				94	100
6. EVALUATE INDIVIDUAL HELICOPTER PATROL PROJECTS AND HELICOPTER PATROL PROJECT CLUSTER					—————			98	32
7. DEVELOP RECOMMENDATIONS REGARDING CURRENT AND FUTURE HELICOPTER PROGRAMS						—————		40	16
8. PREPARE FINAL REPORT							—————	48	16

END