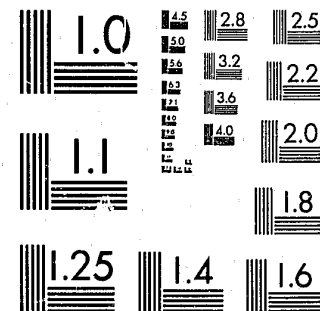


National Criminal Justice Reference Service

**ncjrs**

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



MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A

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

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

National Institute of Justice  
United States Department of Justice  
Washington, D. C. 20531

Date Filmed

3/05/81

74151

**cje**

CRIMINAL JUSTICE  
EVALUATION

**EVALUATION OF THE  
AUTOMATED REGIONAL JUSTICE  
INFORMATION SYSTEM (ARJIS)**

LEAA GRANT AWARD NO.  
A-2469-5-A-79

November, 1980

By  
Susan Pennell, Director, Criminal Justice Evaluation Unit  
Christine E. Curtis, Criminal Justice Evaluator

SAN DIEGO ASSOCIATION OF GOVERNMENTS

CRIMINAL JUSTICE EVALUATION UNIT  
Suite 524, Security Pacific Plaza  
1200 Third Avenue  
San Diego, California 92101  
(714) 236-5361

ACQUISITIONS

This report was financed with funds from the Law Enforcement Assistance Administration.

**PREFACE**

The Criminal Justice Evaluation Unit of the Comprehensive Planning Organization was authorized by the San Diego Regional Criminal Justice Planning Board to evaluate the Automated Regional Justice Information System (ARJIS). The development of ARJIS was funded by a five-year grant for \$2.4 million from the Law Enforcement Assistance Administration (LEAA).

The purpose of ARJIS is to provide San Diego County law enforcement personnel with regional information to assist in the identification of offenders who cross jurisdictional boundaries to commit crimes. Since the system is not completely operational, a full impact evaluation is not possible at this time. Therefore, this preliminary report is process-oriented, describing historical development and results of implementation to date. A second report (April 1981) will assess changes in project operations, system usage, effects on criminal activity and include procedures for measuring cost-effectiveness.

The Executive Summary of this report presents issues, conclusions and recommendations. An in-depth discussion of each issue follows the summary. This evaluation should be useful to: (1) local officials in making decisions regarding funding of ARJIS, (2) local law enforcement administrators in maximizing the effective use of ARJIS, and (3) ARJIS staff in directing post-grant operations (ARJIS II).

The assistance and cooperation of project staff, management committee members and local law enforcement personnel facilitated the preparation of this report, and their efforts are sincerely appreciated.

## TABLE OF CONTENTS

|  |    |
|--|----|
| EXECUTIVE SUMMARY .....                    | 3  |
| Narrative .....                            | 3  |
| Issues, Conclusions, Recommendations ..... | 3  |
| Chapter 1   SYSTEM DEVELOPMENT .....       | 11 |
| Chapter 2   USER SATISFACTION .....        | 21 |
| Chapter 3   EFFECTIVENESS OF ARJIS .....   | 43 |
| Chapter 4   COST OVERVIEW .....            | 53 |
| REFERENCES .....                           | 63 |
| APPENDICES .....                           | 67 |
| A. Organization Charts .....               | 67 |
| B. Components of ARJIS .....               | 69 |
| C. ARJIS Objectives .....                  | 71 |
| D. Methodology .....                       | 75 |
| E. Questionnaires and Forms .....          | 79 |
| F. Additional Tables .....                 | 97 |

## LIST OF TABLES

|          |   |    |
|----------|---|----|
| Table 1  | ARJIS Component Implementation, November, 1980 .....  | 13 |
| Table 2  | Prioritization and Implementation of ARJIS Components, 1976-1980 .....  | 23 |
| Table 3  | Training Received and Training Needed by Agency, User Survey, July, 1980 .....  | 27 |
| Table 4  | Data Entry Requirements for Field Interview, Crime Case and Arrest Components, Management Survey, September, 1980 ..... | 29 |
| Table 5  | Percent of Respondents Using ARJIS Components, by Agency, User Survey, July, 1980 .....                                 | 32 |
| Table 6  | Frequency of Use of Field Interview Component by Assignment, User Survey, July, 1980 .....                              | 35 |
| Table 7  | Percent of Respondents Indicating Present Advantages of ARJIS, Users and Administrators, 1980 .....                     | 38 |
| Table 8  | Percent of Respondents Indicating Disadvantages of ARJIS, Users and Administrators, 1980 .....                          | 39 |
| Table 9  | Impact of ARJIS on Patrol Arrests, User Survey, July, 1980 .....  | 44 |
| Table 10 | Impact of ARJIS on Case Closures, User Survey, July, 1980 .....   | 45 |
| Table 11 | Usefulness of ARJIS in Closing Cases by Agency, Study of Actual Cases Closed, July 28 - September 26, 1980 .....        | 47 |
| Table 12 | Usefulness of ARJIS in Closing Cases by Crime Type, Study of Actual Cases Closed, July 28 - September 26, 1980 .....    | 48 |
| Table 13 | Ways that ARJIS was Useful in Closing Cases, Study of Actual Cases Closed, July 28 - September 26, 1980 ...             | 49 |

|          |  |     |
|----------|--|-----|
| Table 14 | Estimated Administrative, User, and Equipment Costs of ARJIS by Agency, January - June, 1981 .....   | 55  |
| Table 15 | Estimated Data Entry Costs by Agency, January - June, 1981 .....   | 56  |
| Table 16 | Comparison of Projected ARJIS Fees, Annualized Cost for FY80-81 and FY81-82 Cost .....   | 57  |
| Table 17 | Achievement of ARJIS Objectives by Component, November, 1980 .....   | 71  |
| Table 18 | Advantages of ARJIS by Assignment, User Survey, July, 1980 .....   | 97  |
| Table 19 | Disadvantages of ARJIS by Assignment, User Survey, July, 1980 .....  | 98  |
| Table 20 | Number of Case Closures in Which ARJIS Provided Useful Information, by Agency, Study of Actual Cases Closed, July 28 - September 26, 1980 .....              | 99  |
| Table 21 | Number of Case Closures in Which ARJIS Provided Useful Information by Crime Type, Study of Actual Cases Closed, July 28 - September 26, 1980 .....           | 100 |
| Table 22 | ARJIS Components Used, Case Study of Actual Cases Closed, July 28 - September 26, 1980 .....   | 101 |
| Table 23 | Reported Crimes, Clearances & Clearances Countywide, San Diego Police and Other Agencies .....   | 102 |
| Table 24 | Projected JPA Base Costs and Proposed Member Assessment, Automated Regional Justice Information System, Joint Powers Agency .....                            | 103 |
| Table 25 | Estimated Systems Utilization and Projected Range of Computer Costs by User Agency, Automated Regional Justice Information System, Joint Powers Agency ..... | 104 |

## LIST OF FIGURES

|           |   |    |
|-----------|---|----|
| Figure 1  | ARJIS Workplan, December, 1980 to June, 1981 .....  | 15 |
| Figure 2  | Law Enforcement Computer Systems Available to<br>Local Agencies .....                                     | 17 |
| Figure 3  | Types of Regional Information that Is/Would be<br>Useful, User Survey, July, 1980 .....                   | 24 |
| Figure 4  | Percent of Officers Trained and in Need of Training<br>by Assignment, User Survey, July, 1980 .....       | 26 |
| Figure 5  | Percent of Officers Receiving Information from<br>ARJIS, User Survey, July, 1980 .....                    | 30 |
| Figure 6  | Percent of Officers Who Have Received ARJIS Infor-<br>mation by Assignment, User Survey, July, 1980 ..... | 30 |
| Figure 7  | Percent of Respondents Using ARJIS Components by<br>Assignment, User Survey, July, 1980 .....             | 33 |
| Figure 8  | Percent of Officers Who Use ARJIS Once a Week or<br>More by Component, User Survey, July, 1980 .....      | 34 |
| Figure 9  | Percent of Officers Requesting ARJIS Information<br>by Method of Access, User Survey, July, 1980 .....    | 36 |
| Figure 10 | Clearance Rate for the San Diego Region by 6-Month<br>Increments, January, 1975 to June, 1980 .....       | 50 |
| Figure 11 | Current Table of Organization, ARJIS .....  | 67 |
| Figure 12 | Proposed Table of Organization, ARJIS Joint Powers<br>Agreement .....                                     | 67 |

## EXECUTIVE SUMMARY

## Executive Summary

### NARRATIVE

In 1976, the Automated Regional Justice Information System (ARJIS) was funded by the Law Enforcement Assistance Administration (\$2.4 million) to increase the exchange of information among San Diego County law enforcement personnel. The system was designed to assist in the identification and apprehension of suspected criminals through automation of crime case, arrest, suspect and property files. Other features of ARJIS, as originally designed, are the Master Operations Index (MOI) which integrates the system, and the personnel, automated worthless document, crime analysis and manpower allocation components.

Administrative and organizational problems during the five years of development impeded progress toward the goal of complete implementation by the end of the grant period (December 1980). Consequently, the full impact of the ARJIS system cannot be measured at this time. This evaluation is process-oriented and focuses on the issues of system development, user satisfaction, benefits received from current components and a cost overview. A follow-up report (spring 1981) will assess changes in project operations and agencies' usage. Additionally, the extent to which the exchange of information contributes to law enforcement objectives will be examined and procedures for measuring cost-effectiveness will be presented.

### GENERAL CONCLUSIONS

Law enforcement administrators in the region support the ARJIS concept and have received some benefits in terms of arrests and crime cases cleared with ARJIS information. Administrators perceive that there is the potential for increased value of the system when all components are operational. However, the issue of whether the benefits justify the cost is not yet resolved and cannot be until the entire system is functioning, and actual usage is monitored and compared to results received.

ISSUE I: TO WHAT EXTENT DID THE ARJIS PROJECT ACHIEVE ITS STATED OBJECTIVES FOR DEVELOPMENT AND IMPLEMENTATION?

### Conclusion

To date (November 1980), six of the nine ARJIS components are operational, either totally or in part. Timely implementation was

hindered by problems in developing a system to meet all user needs, changing of component design during the development process, establishing an organizational structure with a single line of authority, and staff turnover.

#### Findings

1. Development of a system designed to meet the requirements of eleven law enforcement agencies was a time-consuming process which was negatively affected by turnover in user committee membership. In addition, changes in the approach to system design caused delays in implementation.
2. Three different project administrators during the grant period affected the continuity of ARJIS development.
3. Salary restraints imposed by the City of San Diego limited the ability to hire and retain qualified systems analysts.
4. The field interview component was the first to be completed in November, 1977. Since January, 1980, the field interview component has been integrated with the Master Operations Index (MOI) which allows a simultaneous search of four components through one inquiry.
5. The crime case, property and crime analysis components are operational, but do not contain all proposed capabilities.
6. The traffic portion of the arrest component and the automated worthless document index (AWDI) are still in the development stages, to be implemented in January and June of 1981, respectively.
7. The manpower allocation component has been postponed indefinitely.
8. Further refinements and enhancements are being made to existing components.

#### Recommendations

1. *ARJIS staff should continue development and enhancement of the ARJIS components as scheduled.*
2. *The following features should be considered in regard to ARJIS administration when grant funds terminate:*
  - a. *A single line of authority for management of project operations should be established.*
  - b. *A staff person should be responsible for liaison efforts between personnel in ARJIS management, San Diego Data Processing Corporation, law enforcement agencies and local officials responsible for funding.*

- c. *Personnel from all user agencies should have opportunities for input regarding ARJIS activities.*

#### ISSUE II: DOES ARJIS MEET THE NEEDS OF LAW ENFORCEMENT PERSONNEL IN THE SAN DIEGO REGION?

#### Conclusion

In general, ARJIS staff identified the information needs of law enforcement personnel. Usage of operational components and the perceived current and potential value of ARJIS are indicative of project efforts toward addressing information needs. However, the value of the system is influenced by the extent and quality of training received, the accuracy and amount of data compiled, and the availability of the information to users.

#### Findings

1. The majority of administrators, line supervisors, and police officers surveyed feel that the following types of information from other law enforcement agencies can be useful: field interview, stolen property, arrest, hotsheet and crime case.
2. ARJIS users feel that the system saves time, identifies possible suspects, provides information that was not previously available, provides data that assists in making arrests and increases "leads".
3. The primary disadvantages noted by users are that: training has been insufficient; it is difficult to obtain information while on patrol; and computer downtime is excessive.
4. Seventy-five percent (75%) of the officers surveyed have received ARJIS information at least once, but 73% are still in need of additional training in data access.
5. Approximately one-third of the officers express a need for training in report writing (i.e., regional field interview and crime reports).
6. Due to errors and omissions of information on documents, records supervisors state that data entry clerks need to be able to interpret the information on crime case and field interview reports.
7. Some agency administrators do not see a need for entering all field interviews (38%), crime cases (50%), and arrest reports (23%) into ARJIS.

#### Recommendations

1. *Agency administrators, with assistance from ARJIS, should encourage and provide thorough, ongoing training in data access to patrol, investigations and traffic officers. This training should include an overview of ARJIS and the interrelationship of the components.*



*Specific instructions regarding the uses of ARJIS for officers' specific assignments (e.g., homicide investigations, property crime cases, patrol, etc.) should be provided. Due to turnover in staff and changes in assignments, in-service training should be provided periodically.*

2. ARJIS staff should simplify the instructions for data access (1 to 2 page summary).
3. To enhance the accuracy of data, entry clerks should be trained to recognize errors and omissions in reports to be entered into ARJIS.
4. Line supervisors at all agencies should review procedures for crime incident and field interview report preparation at squad conference or line up. In addition, supervisors and data entry clerks should monitor these reports for completeness and accuracy and provide feedback to officers when errors are evident.
5. ARJIS information should be available on a 24-hour basis as soon as possible.
6. A policy decision should be made regarding the feasibility of entering all field interview and crime case documents into ARJIS. If they are to be entered selectively, standardized criteria should be established. Attention should be given to the potential value of the information to officers, the requirements for management information and/or state reporting, the accessibility of information not computerized and the cost of data entry.
7. Data for the Bureau of Criminal Statistics should be kept manually as a quality control measure until ARJIS provides reports that are accurate and complete.

ISSUE III: WHAT IS THE EFFECTIVENESS OF THE ARJIS SYSTEM BASED ON CURRENT OPERATIONS?

Conclusion

Survey data and a review of crime case clearances indicate that ARJIS has provided officers with useful information, but the impact varies by department. It is probable that when information is available regionally, the impact of ARJIS will increase. Responsibility for improving the effective use of ARJIS should be a joint responsibility of ARJIS staff and agency personnel.

Findings

1. Patrol officers estimate that in 5% of their arrests ARJIS provided useful information and that 4% of the arrests would not have been made without ARJIS.

2. Detectives surveyed estimate that: (a) 10% of all crime cases would have been unworkable without ARJIS (i.e., no leads); (b) in 13% of all case clearances, ARJIS provided useful information; and (c) 7% of the cases cleared would not have been closed without ARJIS.
3. In an additional study of actual Part I<sup>1</sup> crime cases closed, findings show that: (a) in 7%, ARJIS provided useful information; (b) the information received was most beneficial in burglary and grand theft investigations; (c) in Part I crime cases in which ARJIS was actually used, the information was of value in 31% of the cases; and (d) ARJIS was most useful in verifying previous knowledge about a case or providing "leads".
4. Agencies receiving the most benefits are those that have a strong administrative commitment to ARJIS, a high proportion of officers that are trained in data access and are actually using ARJIS. Additionally, these departments have maximized the availability of ARJIS information (e.g., through dispatch and/or a terminal operator).

Recommendations

Those agency personnel interested in continued participation in ARJIS should consider the following:

1. Agency administrators and supervisors should provide the opportunity for, and encourage the use of ARJIS by officers. (See Recommendations 1-4, pages 5 & 6, regarding training.)
2. The availability of ARJIS information should be increased through as many sources as feasible (e.g., dispatch, terminal operator and/or personal access to the terminal). This depends on agency size, level of use and terminal time required for data entry.
3. To determine the effectiveness of the system, personnel in each agency should continually monitor ARJIS operations using techniques similar to those developed for the evaluation. Information that could assist management decisions includes: (a) the number of inquiries made by each agency during a given time period, (b) the number of crime cases and arrests in which ARJIS provided useful information, (c) trends in reported crimes, arrests, clearances and property recovery, and (d) time saved/expended due to ARJIS.

<sup>1</sup>Rape, robbery, aggravated assault, burglary, grand theft and motor vehicle theft.



#### ISSUE IV: WHAT IS THE COST OF ARJIS TO USER AGENCIES?

##### Conclusion

The cost of ARJIS for the first six months of 1981 will be approximately \$905,000 (excluding data entry personnel costs). The cost per agency ranges from 1.1 to 3.1% of their total appropriations for law enforcement. The cost effectiveness of ARJIS cannot be determined until the system is fully operational. But agency administrators who are committed to ARJIS should begin to develop procedures for measuring benefits compared to costs.

##### Findings

1. Thirty-six percent (36%) of the agency administrators think that the usefulness of ARJIS, to date, justifies the cost after grant funding ends. The majority (55%) feel that the cost effectiveness of the system depends on future costs to each agency and/or the extent to which the remaining components are developed.
2. The base cost for ARJIS administration and user fees is estimated at \$804,318 for January through June, 1981, with costs ranging from \$8,406 for Coronado to \$442,132 for San Diego Police Department.
3. For the same period, equipment rental (terminals, printers, and telephone lines) represents an additional cost of \$100,700.
4. Personnel costs for data entry range from \$2,310 in Carlsbad to \$139,259 in San Diego Police Department.<sup>2</sup>
5. Seventy-nine percent (79%) of the records supervisors surveyed anticipate problems in data entry when additional components are operational. The major reason cited was lack of sufficient personnel to keep up with the workload.

##### Recommendations

1. *During the next several months, agency administrators should develop and implement procedures for measuring the impact of use of ARJIS in their agencies to be compared to cost (see Recommendation 3, page 7).*
2. *The Criminal Justice Evaluation Unit should provide technical assistance to agency personnel interested in assessing the cost-effectiveness of ARJIS.*

<sup>2</sup>Data entry personnel costs were computed for 9 of 11 agencies.

## CHAPTER 1 SYSTEM DEVELOPMENT

## System Development

ISSUE I: TO WHAT EXTENT DID THE ARJIS PROJECT ACHIEVE ITS STATED OBJECTIVES FOR DEVELOPMENT AND IMPLEMENTATION?

### SUMMARY

The complete implementation of ARJIS was delayed due to organizational and administrative problems. To date (November 1980), six of the nine ARJIS components have been implemented, either totally or in part. The field interview component was the first to be completed by ARJIS staff in November, 1977. Since January, 1980, the field interview component has been integrated with the Master Operations Index which allows a simultaneous search of four of the components through one inquiry. The personnel, crime case, property and crime analysis features have been instituted but they do not include all of the proposed capabilities.

The traffic portion of the arrest component and the automated worthless document index (AWDI) are still in the development process, with projected implementation dates of January and June, 1981, respectively. Due to problems inherent in creating an automated manpower allocation system for departments that do not have a computer-aided dispatch, the manpower allocation component has been postponed indefinitely.

As the system components become available, further refinements and enhancements are anticipated. The workplan for the completion of scheduled tasks for 1981 is on page 15.

### DISCUSSION

The region served by ARJIS has a population of 1,819,300 and covers 4,255 square miles. There are fourteen cities in the region, ten of which have their own police departments. The unincorporated areas and the remaining cities are within the jurisdiction of the Sheriff's Department. All local law enforcement jurisdictions, except one (Imperial Beach), have committed post-grant funds to ARJIS II through June, 1981. In addition, the District Attorney, U.S. Marshal, County Marshal, Harbor Police, and Fire Department will continue to have the capability of accessing the ARJIS computer. After grant funding ends in December, 1980, a Joint Powers Agreement (JPA) has been proposed by the ARJIS Management Committee to finance and administer ARJIS II. The JPA is being distributed to local jurisdictions for approval. The present and proposed organizational structures for ARJIS administration are presented on page 67.

The ARJIS system, as originally designed, contains the following components:

1. Field Interview
2. Crime Case
3. Property
4. Arrest
5. Master Operations Index (MOI)
6. Personnel
7. Automated Worthless Document Index (AWDI)
8. Crime Analysis
9. Manpower Allocation

(A detailed description of each component is on page 69)

Methodology

To address evaluation issues, data were collected through surveys of law enforcement personnel: patrol officers, line supervisors, records supervisors and administrators. Interviews were conducted with the ARJIS representative from each law enforcement agency; review was undertaken of actual crime cases closed by using ARJIS; progress reports were examined; system usage by agency was analyzed; and regional crime data were reviewed.

COMPONENT DEVELOPMENT

First year activities of the ARJIS grant were devoted to determining user needs for a regional law enforcement computer system and the documentation of existing sources of information (e.g., manual files, records, etc.). The result of the needs assessment was the proposed nine components. The "ideal" approach for developing each component was described in detail, based on input and decisions by the user committees (representatives of local law enforcement agencies).

The possibility of transferring systems developed in other jurisdictions was considered by ARJIS staff. This can be less costly and time consuming than developing an entirely new system, if the transfer system meets local needs. The field interview component was the only one found suitable for transfer, but when the Master Operations Index (MOI) became operational, the transferred system was replaced.

ARJIS had to be developed within the parameters of the San Diego City computer's capabilities. This affected the ability to transfer systems from other agencies, since other systems were not always compatible (i.e., computer language, etc.). All ARJIS components operate on an IBM 3031 with OS/VS and IMS/VS. Main memory is 4 million bytes and the ARJIS on-line programs operate in any one of four Message Processing Regions. All application programs are written in COBOL and the largest program is 185K bytes.

Table 1 presents the proposed components, and the present status (November 1980) of each. The degree of implementation is based on an

analysis of the stated objectives for each component. Since there is little consistency between objectives of components (i.e., some are very specific and detailed, whereas others are general statements), it is not possible to be more exact about the relative degree to which component activities were accomplished. A detailed listing of objectives by component is in Appendix C, page 71.

It should be noted that these objectives were developed in the first year of the grant and represent the original specifications for the system. A component was considered fully implemented only if all primary objectives were met. Partial implementation means either that an integral portion of a component (e.g., the pawn segment of the property component) or enhancements based on original objectives have not been completed.

TABLE 1  
ARJIS COMPONENT IMPLEMENTATION  
November, 1980

| Component                       | OPERATIONAL          |                          |                          | NOT<br>OPERATIONAL |
|---------------------------------|----------------------|--------------------------|--------------------------|--------------------|
|                                 | Fully<br>Implemented | Partially<br>Implemented | Minimally<br>Implemented |                    |
| MOI                             | X                    |                          |                          |                    |
| Field Interview                 |                      | X                        |                          |                    |
| Crime Case                      |                      | X                        |                          |                    |
| Property                        |                      | X                        |                          |                    |
| Personnel                       |                      |                          | X                        |                    |
| Crime Analysis                  |                      |                          | X                        |                    |
| Arrest                          |                      |                          |                          |                    |
| Automated Worthless<br>Document |                      |                          |                          | X                  |
| Manpower Allocation             |                      |                          |                          | X                  |

The Master Operations Index (MOI) is the only one which was fully implemented. This component integrates the entire system by allowing simultaneous inquiry into the field interview, crime case, property and arrest components.

The objectives of the field interview component that relate to user investigative information have been completed. But as yet, it does not provide management or supervisory reports. Field interviews have been entered into the system regionally since January, 1978.

The crime case component was completed in August, 1980. Since data entry training has not been completed in all agencies, the data base is currently limited. Therefore, the effectiveness of this component cannot yet be determined. Further enhancements to this system will

be implemented by December, 1980, and will address most of the component objectives.

The property component consists of three sub-components:

1. A glossary, for describing nonserialized property
2. Stolen property
3. Pawned property

The glossary was finished in January, 1980, and the stolen property component was able to accept data as of October, 1980. But due to data entry training needs, not all agencies are using this system as yet. The pawned property segment is still in the development stages and is scheduled for implementation in December, 1980.

Delays in implementing both the crime case and property components are in part due to problems associated with meeting state reporting requirements for the Bureau of Criminal Statistics (BCS). ARJIS staff had to categorize the crime and property data to conform with BCS needs to allow for computerized reporting (i.e., crime type, property type, etc.).

The personnel component was operationalized primarily to provide security clearance for ARJIS access. It now only provides minimal information on each employee compared to the proposed capabilities of the system.

The capabilities for performing crime analysis are present in ARJIS (i.e., crime cases are entered and data can be accessed geographically). The on-line and reporting capabilities have not been completed. ARJIS staff is working on report and screen formats for sophisticated crime analysis (e.g., mapping, graphing, etc.). Raw data can be accessed geographically, but must be compiled and presented manually. In addition, a "solvability factor", which evaluates the potential for solving a crime case, has been tested manually, but has not been implemented as part of ARJIS.

ARJIS personnel are now developing a portion of the arrest component consisting only of traffic information. The proposed completion date is January, 1981. It is unknown when the arrest component as described by project objectives will be developed.

Initial planning for the Automated Worthless Document Index (AWDI) has been accomplished, and the proposed date of implementation is June, 1981. Delays have resulted from uncertainty about the development of a statewide system which would make AWDI unnecessary, and differences of opinion regarding the method for developing AWDI.

The manpower allocation component has not been implemented. Programs available for transfer were not seen as adequate for local needs. In addition, problems in developing a computerized manpower allocation model for agencies without a computer-aided dispatch system to supply needed data affect the feasibility of development at this time.

FIGURE 1  
ARJIS WORKPLAN  
DECEMBER 1980 TO JUNE 1981

| Component            | 1980<br>Dec | 1981<br>Jan | Feb | Mar | Apr | May | June |
|----------------------|-------------|-------------|-----|-----|-----|-----|------|
| Pawned<br>Property   |             |             |     |     |     |     |      |
| Case<br>Enhancements |             |             |     |     |     |     |      |
| Crime<br>Analysis    |             |             |     |     |     |     |      |
| Traffic              |             |             |     |     |     |     |      |
| AWDI                 |             |             |     |     |     |     |      |

System Interface

In addition to the development of nine components, an objective of ARJIS was to interface with local (County), state (CLETS) and national (NCIC) computer systems. Through joint efforts of the City and County, this is to be completed in 1982. The County has budgeted a larger computer capable of storing the additional data, and County EDP<sup>3</sup> staff are modifying and testing the program (TCAM) which will allow the interface. The national and state interface with the County system will occur prior to combining ARJIS and the County computer. Figure 2 presents a diagram of all computerized systems currently available to law enforcement in the San Diego Region.

PROBLEMS IN ARJIS DEVELOPMENT

Organizational and administrative problems, and the inability to retain qualified staff, hindered the implementation of ARJIS components. Additional delays resulted from problems in obtaining agreement on a regional system to meet all user needs. Also, changes in the original system design approach during the development process led to unexpected slippages in the timetable for completion of ARJIS.

The original approach was to develop all nine components concurrently, with implementation occurring during the last year of the grant. This created dissatisfaction among some users because they were not receiving expected benefits, and there was minimal evidence of a product as a result of efforts expended by ARJIS staff.

San Diego Police Department as Administrator

The grant was initially administered by the City of San Diego (1976). A lack of coordination between City EDP and the San Diego Police Department precluded a single authority responsible for project activities. This affected projected completion of tasks. Through an intensive planning session conducted by Weber and Weber, Management Consultants, findings and recommendations were formulated and used as a basis for changes in grant operations and organizational structure. The two major revisions were the administration of the grant by the police department and the hiring of a technical director to provide expertise to the data processing staff.

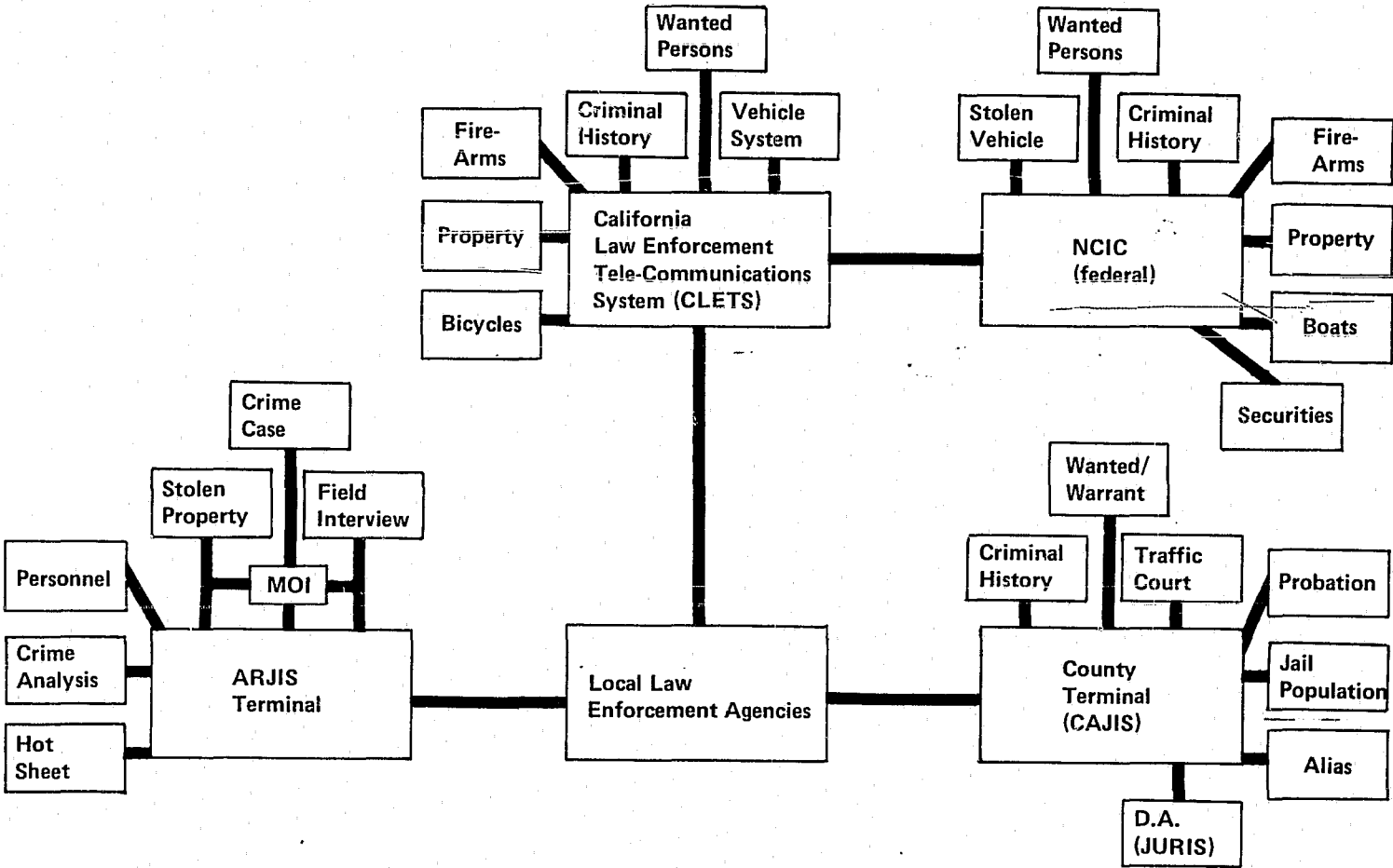
CPO Becomes Subgrantee

Retention of qualified systems analysts under the City's classification system and salary range was a continuing problem. But it became critical after the passage of Proposition 13 (1978) when salaries, promotions and hiring in the City of San Diego were frozen.<sup>4</sup> The salary of a city systems analyst at that time was from 10% to 30% below similar positions

<sup>3</sup>Electronic Data Processing.

<sup>4</sup>Proposition 13 decreased property taxes which reduced the revenue available to local governments.

FIGURE 2  
LAW ENFORCEMENT COMPUTER SYSTEMS  
AVAILABLE TO LOCAL AGENCIES



in private industry, making the City noncompetitive. By October, 1978, the ARJIS project was 8.5 positions under budget, which obviously influenced project activities. To overcome this problem, at the request of the City, the Comprehensive Planning Organization (CPO) became the subgrantee in March, 1979. CPO was able to contract with the systems analysts at a more competitive rate since it is not restrained by civil service policies. By May, 1979, the grant was fully staffed.

## CHAPTER 2 USER SATISFACTION

## User Satisfaction

### ISSUE II: DOES ARJIS MEET THE NEEDS OF LAW ENFORCEMENT AGENCIES IN THE SAN DIEGO REGION?

#### SUMMARY

Law enforcement personnel are supportive of the regional concept of ARJIS and perceive current and potential benefits of the system. Seventy-five percent (75%) of the officers surveyed have used ARJIS and the majority indicate benefits including: (1) it saves time that would have been spent searching files manually, (2) it identifies possible suspects, (3) it provides information not previously available, and (4) it provides information that assists in making arrests.

Despite these advantages, the effectiveness of the system is seriously affected by insufficient training of officers and the quantity and quality of data placed in the system. A majority of officers expressed a need for training in data access and approximately one-third require training in preparation of regional crime reports. Although agency administrators have agreed to share the responsibility for in-service training, this has not occurred to the extent necessary. Obviously, without knowledge of how the system works, officers cannot take advantage of it. Also, inadequate training of officers and data entry clerks contribute to errors, omissions, and/or inconsistencies in data entered into field interview and crime case components. Inaccurate and incomplete data in ARJIS affects the utility of the system for all users.

Agency administrators disagree regarding the number and nature of documents to be entered. Presently, selective entry is occurring in some agencies. Without a policy decision which reflects consistent standardization, the State guidelines for reporting crime and arrest information will not be met, and accurate assessments of regional crime trends will not be available.

#### DISCUSSION

To address the issue of user satisfaction, information and opinions were obtained from law enforcement personnel involved in all phases of the development and use of ARJIS. Surveys were distributed to the following three groups:

1. Patrol officers, detectives and line supervisors (User Survey)
2. Chiefs of Police and the Sheriff (Management Survey)
3. Records Supervisors and staff (Records Survey)



The User Survey was distributed to all patrol officers, detectives, agents, corporals and sergeants during line up or squad conference and included all shifts. A total of 1,060 questionnaires were returned from the ten law enforcement agencies participating in ARJIS. This is approximately a 55% response rate. Management and Records Surveys were completed by personnel in each agency. In addition to the ten local agencies, the management survey was completed by the Harbor Patrol, U.S. Marshal, and County Marshal. (See Methodology, page 76, and questionnaires, page 79, for additional information.)

In general, the surveys addressed the following questions:

1. Does/will ARJIS meet the information needs of law enforcement?
2. Were law enforcement personnel adequately trained in all phases of ARJIS?
3. To what extent do law enforcement officers use ARJIS?
4. What are the benefits and disadvantages of ARJIS?

Since San Diego Police Department (SDPD) has had extensive involvement in ARJIS and also accounts for a greater volume and variety of ARJIS data, the survey findings for SDPD are presented separately in some instances.

#### INFORMATION NEEDS

The nine ARJIS components were prioritized during the first grant year, based on input from local enforcement personnel. As the composition of the management and user committees changed, the perceived needs changed as well. Despite attempts by ARJIS staff to discourage changes, actual implementation did not directly coincide with original priorities. Table 2 presents the original priorities in 1976, the order of implementation and the priorities as perceived by agency administrators in 1980.

The field interview component was the first implemented, as planned. But the second priority, the arrest component, has yet to be completed. Crime case (priority 3) was instituted in September, 1980, but does not have all the proposed capabilities (see Table 2). The Master Operations Index (MOI) was developed sooner than originally planned because it integrates all components and its design affected all other systems.

In an attempt to meet grant objectives, the remaining components were again prioritized by the management committee in July, 1980, based on the feasibility of implementation within the grant period and by June, 1981. The emphasis is now being placed on enhancement of crime case, property, crime analysis, and development of arrest and AWDI. This is consistent with the priorities mentioned by administrators in the management surveys, except that the arrest component is limited to traffic arrests at this time (see Table 2). Figure 1, page 15, reflects the proposed workplan for the remainder of FY1980-81.

TABLE 2  
PRIORITIZATION AND IMPLEMENTATION  
OF ARJIS COMPONENTS  
1976-1980

| Original Priority 1976 | Order of Implementation* | Management Survey Priority in 1980 |
|------------------------|--------------------------|------------------------------------|
| 1) Field Interview     | 1) Field Interview       | 1) Field Interview                 |
| 2) Arrest              | 2) Personnel             | 2) Crime Case                      |
| 3) Crime Case          | 3) MOI                   | 3) MOI                             |
| 4) Property            | 4) Crime Case            | 4) Property                        |
| 5) Personnel           | 5) Crime Analysis        | 5) Arrest                          |
| 6) MOI                 | 6) Property              | 6) Crime Analysis                  |
| 7) AWDI                |                          | 7) AWDI                            |
| 8) Crime Analysis      |                          | 8) Personnel                       |
| 9) Manpower Allocation |                          | 9) Manpower Allocation             |

\*The degree of implementation varies (see Table 1).

#### Regional Information

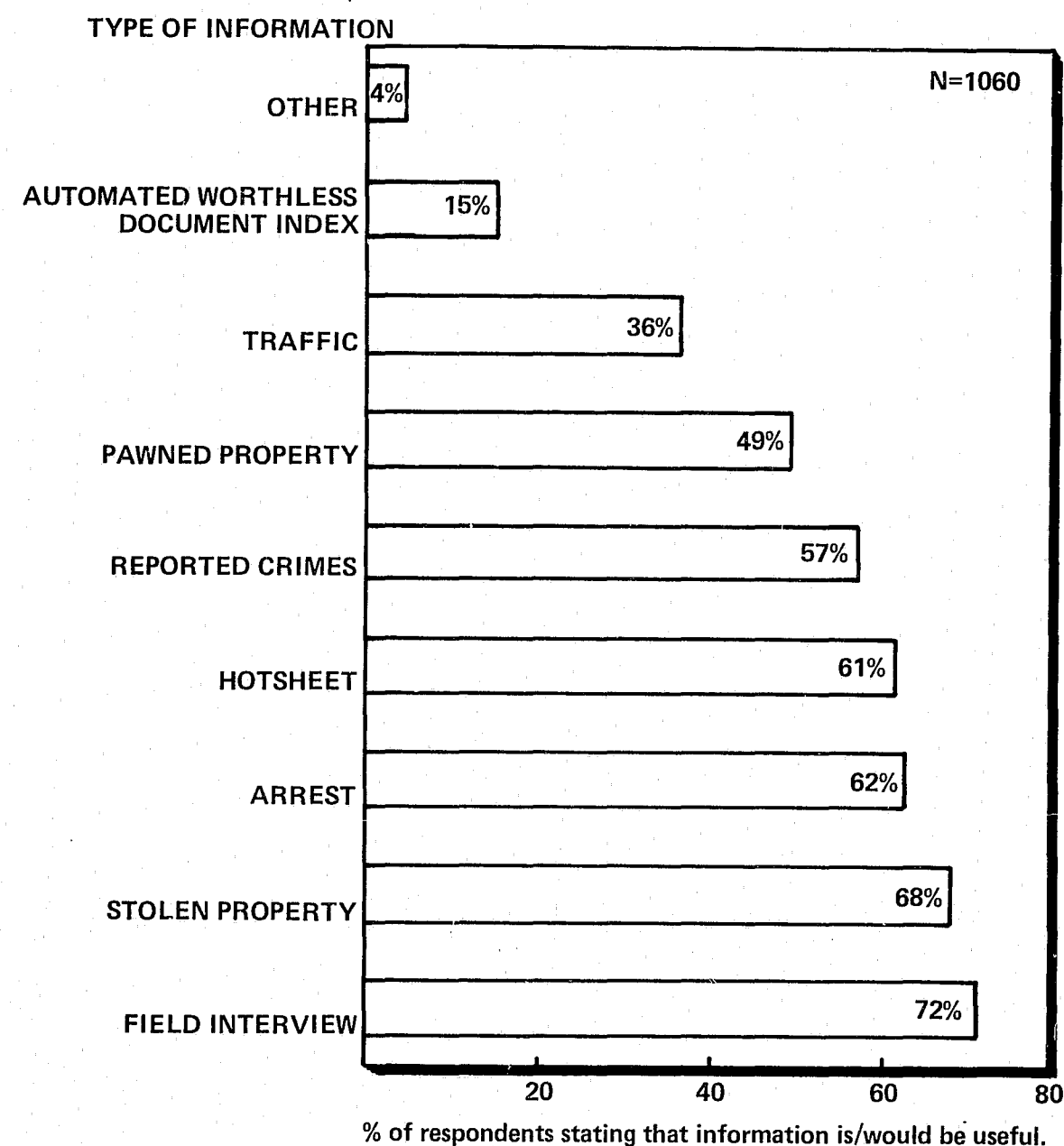
One of the original goals of ARJIS was to provide law enforcement with regional information to assist in the apprehension of criminals who cross jurisdictional boundaries. This is another aspect of information needs which relates to the types of data from other jurisdictions that can be of assistance. To determine if users perceive a need for a regional data base, they were asked what types of information is, or would be, useful. Figure 3 shows that the majority of the respondents felt that field interview (72%), stolen property (68%), arrest (62%), hotsheet (61%) and reported crime information (57%) is needed on a regional basis. Traffic and worthless document information may have been mentioned less often because a smaller proportion of officers would have the potential for using the information.

In answering the same question, law enforcement managers were very supportive of the need for regional information. All thirteen mentioned field interview and stolen property information as useful information from other agencies. In rank order, they also listed pawned property (12), arrest (11), crime case (10), worthless document (10), hotsheet (9), personnel (1), crime analysis (1) and vehicle information (1).

#### TRAINING

The actual use and effectiveness of ARJIS is dependent upon the extent and quality of training received by law enforcement personnel in data access, report writing and data entry. Survey responses indicate a need for additional training, most particularly in the area of accessing information from the ARJIS terminal. Forty-seven percent (47%) of the

FIGURE 3  
TYPES OF REGIONAL INFORMATION  
THAT IS/WOULD BE USEFUL  
USER SURVEY- JULY, 1980



user survey respondents have received training in data access, but 73% either have not received, or are in need of additional training.

The approach has been to train key personnel at each agency who would, in turn, train the staff. The majority of agency administrators feel this method is appropriate and have conceptually accepted their share of responsibility. In fact, all but one agency have provided in-service training. However, survey findings indicate that sufficient training has not occurred.

Since changes and additions are being made in components, entry codes and formats, training in data access must be ongoing to maintain or increase usage. Also, a turnover in staff and transfers to other units/divisions create a need for additional training. Officers should be trained in the use of ARJIS as it relates to their specific functions (i.e., patrol, homicide investigations, property recovery, etc.).

Administrators seem to be aware of the need for training in this area, with 77% stating that their officers require training in accessing data. (Additional training has taken place in some agencies since the user survey was completed.)

There are other factors which affect training and the use of ARJIS by individual officers. Some departments have policies about who can access the terminal. For example, in one department, patrol officers are not allowed to access ARJIS personally. Other agencies have a terminal operator who obtains the information on request of the officers, limiting the perceived need for training.

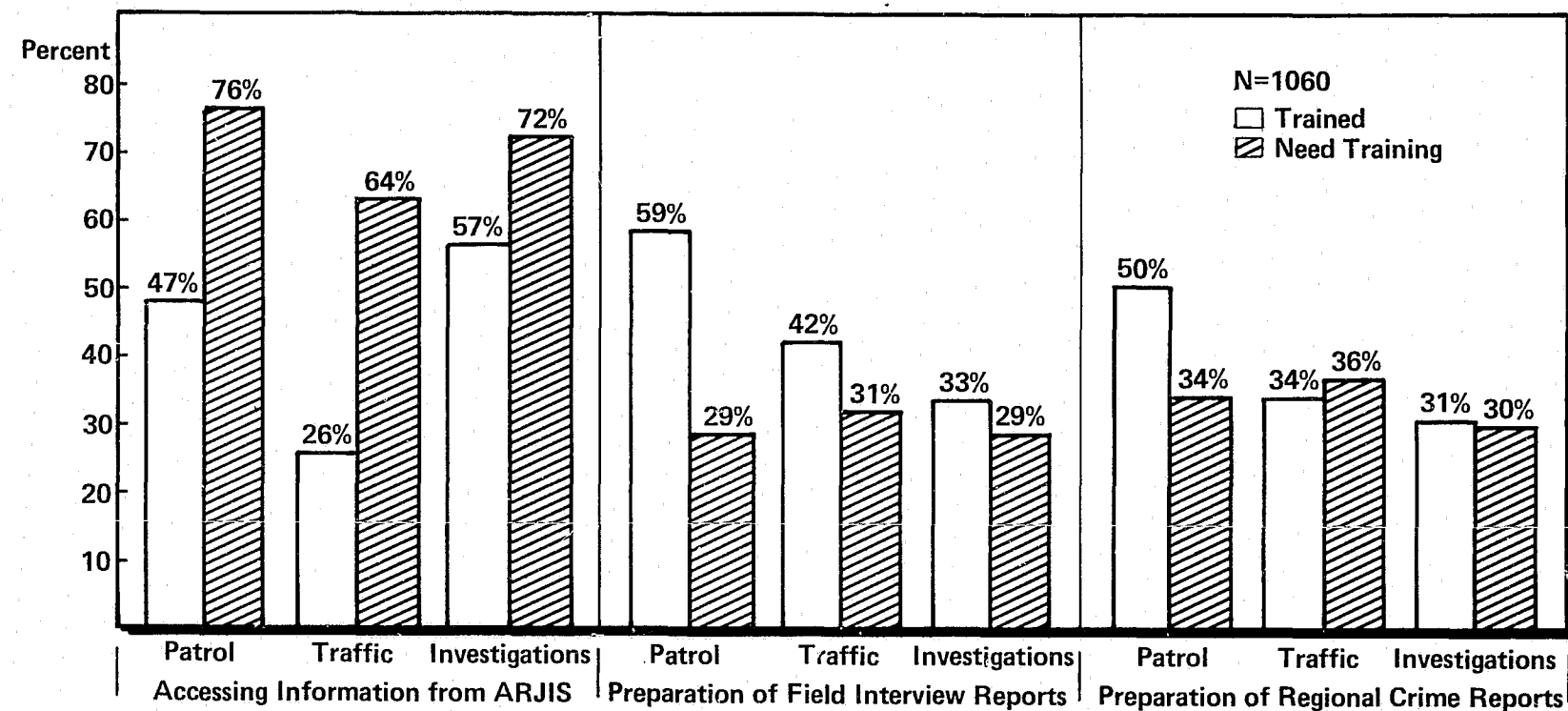
The data in Table 3 show that a higher proportion of officers in San Diego Police Department have received training to access ARJIS compared to other agencies (50% and 42%, respectively). Conversely, 71% of the San Diego officers need training, whereas 77% of the officers at other agencies do. Since SDPD has had data in the City computer for an extended period of time, officers may be more familiar with the use of the City terminal.

Staff in investigations divisions have received more training in data access (57%) than patrol (47%) or traffic officers (26%) when the data are examined by officer assignment (Figure 4). The training needs are similar though, ranging from 64% to 74% of the officers stating that additional training is required.

#### User Manuals

All but two of the administrators (85%) indicate that the user manuals for data access provided by ARJIS are satisfactory. But several agencies have developed a more simplified, one or two page, summary of instructions for accessing the various components. This has proved useful, and is suggested for all agencies to increase the likelihood that officers will make ARJIS inquiries.

FIGURE 4  
PERCENT OF OFFICERS TRAINED;  
AND IN NEED OF TRAINING\*  
BY ASSIGNMENT  
USER SURVEY  
JULY, 1980



\*In need of training means that no training has been received or additional training is necessary.

TABLE 3  
TRAINING RECEIVED AND TRAINING  
NEEDED\* BY AGENCY  
USER SURVEY  
July, 1980

| Activity                         | San Diego Police  |               | Other Agencies    |               | All Agencies      |               |
|----------------------------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|
|                                  | Received Training | Need Training | Received Training | Need Training | Received Training | Need Training |
| Accessing Information            | 50%               | 71%           | 42%               | 77%           | 47%               | 73%           |
| Preparing FI Reports             | 46%               | 34%           | 56%               | 23%           | 50%               | 29%           |
| Preparing Regional Crime Reports | 40%               | 39%           | 47%               | 25%           | 23%               | 33%           |
| Number of Respondents            | 613               | 613           | 447               | 447           | 1,060             | 1,060         |

\*Refers to training needed and/or additional training needed.

#### Report Writing

To ensure comparability of the data entered into ARJIS by each agency, regional field interview and crime incident reports were developed. Approximately one-third of the officers feel they still need training in how to complete these reports (see Table 3). The regional crime report was not being used at two agencies at the time of the survey, which accounts for part of the training needs. The survey data is supported by the fact that clerical and supervisory staff at some agencies have noted errors and/or omissions in the completed forms.

Fewer San Diego Police Department officers have received training in report preparation than other agencies, and they express a greater need (see Table 3). Since the forms were modeled after SDPD reports, training in use of the forms was not as extensive at this department.

Since they initiate the reports, it is not surprising that a higher proportion of patrol officers have received some training in preparing field interview (59%) and crime incident forms (50%) compared to other divisions. But training needs do not vary greatly between patrol, traffic and investigative officers.

Data Entry Training

The accuracy of the information in ARJIS depends on the extent and quality of training for data entry clerks. Records supervisors from ten law enforcement agencies report that 51 data entry clerks were trained by ARJIS staff, receiving an average of 9.7 hours of training. In addition, seven agencies have provided in-service training to 36 clerks in data entry and retrieval for the field interview, crime case and/or hotsheet components. This training averaged 5 hours per clerk. The other three agencies intend to provide in-service training in data entry in the future.

The records supervisors were, for the most part, satisfied with the ARJIS training process (77%). Those who were not (3) gave the following reasons:

- 1. All clerks were not trained by ARJIS staff.
- 2. All components were not covered.
- 3. It is difficult to schedule training in a 24-hour operation.
- 4. Data entry training manuals were not adequate.

Their suggestions for improving data entry training include:

- 1. All data entry personnel should be trained by ARJIS staff.
- 2. To account for staff rotation, ongoing training should occur for an extended period.
- 3. Training should include an explanation of the overall ARJIS system and how the components interrelate.
- 4. Data entry clerks should be trained in how to interpret the documents so the quality of data entered can be ensured.
- 5. The data entry training manual should be simplified.

When asked specifically about the training manual, 71% of the records supervisors stated that it was satisfactory, while the others felt that it was incomplete or could be simplified.

All the respondents believe that data entry clerks need to be able to interpret the information on the forms (i.e., crime incident and field interview) as a quality control to increase the accuracy of data in ARJIS. For example, when more than one crime appears on an incident report, officers do not always list the correct crime type based on Bureau of Criminal Statistics (BCS) reporting requirements. Other officers have listed the dollar amount of property damage occurring during a burglary in the stolen property section. Therefore, data entry clerks need to be aware of how the reports should be completed in order to correct such errors. This, in addition to report review and monitoring by line supervisors, should help to preserve the quality of BCS reporting, management information, and information provided to officers.

Sufficiency of the Data Base

The usefulness of an automated regional law enforcement information network is limited if complete data is not in the system. This can result from either delays in entering data or selected entry of only a portion of the documents. Approximately one-third of the users and administrators surveyed feel that there are problems in entering information into ARJIS in a timely manner. For example, after a field interview is taken, it takes from two hours to five days before it is entered into ARJIS, depending on the agency.

Another limitation arises when agencies selectively enter documents. Currently, seven agencies in San Diego County are putting all field interviews into ARJIS. Sixty-two percent (62%) of the agency administrators think that all field interviews should be entered, stating that the utility cannot be determined in advance and that these documents provide information on possible suspects with no prior record (see Table 4). On the other hand, a few respondents noted that some field interviews are of no value and should not be entered.

The majority of the respondents (77%) felt that all arrests should be entered into ARJIS. Discrepancies are most evident in regard to the benefit of entering all crime cases, with 50% of the administrators in favor and 50% opposed. There is a concern as to the value of entering less serious crimes to be in the system. Any policy decision to limit the entry of data, whether it be field interview, arrest or crime case information, may affect the ultimate utility of ARJIS.

In addition, for computerized reporting of crime, arrest and property statistics to the Bureau of Criminal Statistics, all related documents must be in the data base. Criteria for data entry must be consistent and standardized for each member agency. Without this, the accuracy of crime trend data, and subsequently crime analysis, will be seriously affected.

TABLE 4  
DATA ENTRY FOR FIELD INTERVIEW,  
CRIME CASE AND ARREST COMPONENTS  
MANAGEMENT SURVEY  
September, 1980  
N = 13

|                  | Enter all<br>Reports* | Enter<br>Selected<br>Reports* |
|------------------|-----------------------|-------------------------------|
| Field Interviews | 62%                   | 38%                           |
| Crime Cases      | 50%                   | 50%                           |
| Arrests          | 77%                   | 23%                           |

\*Percent of respondents.

FIGURE 5  
PERCENT OF OFFICERS RECEIVING INFORMATION  
FROM ARJIS  
USER SURVEY  
JULY, 1980

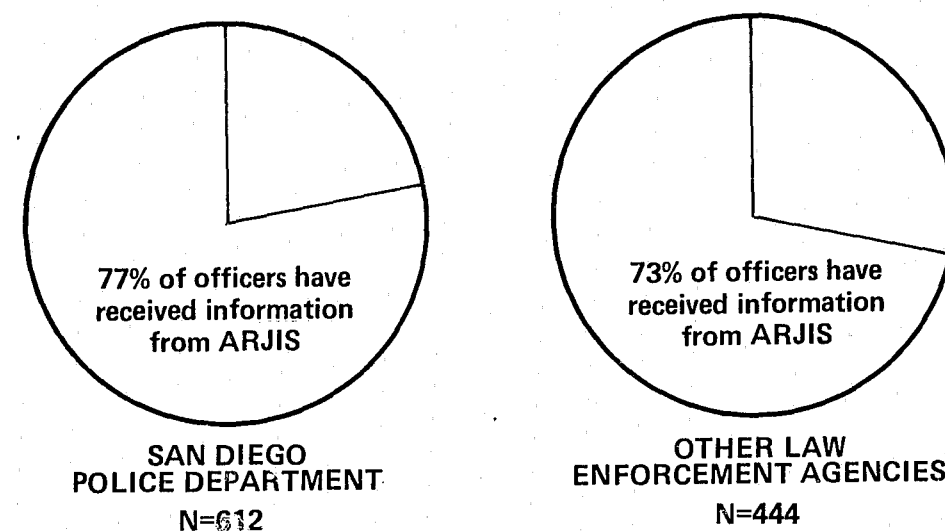
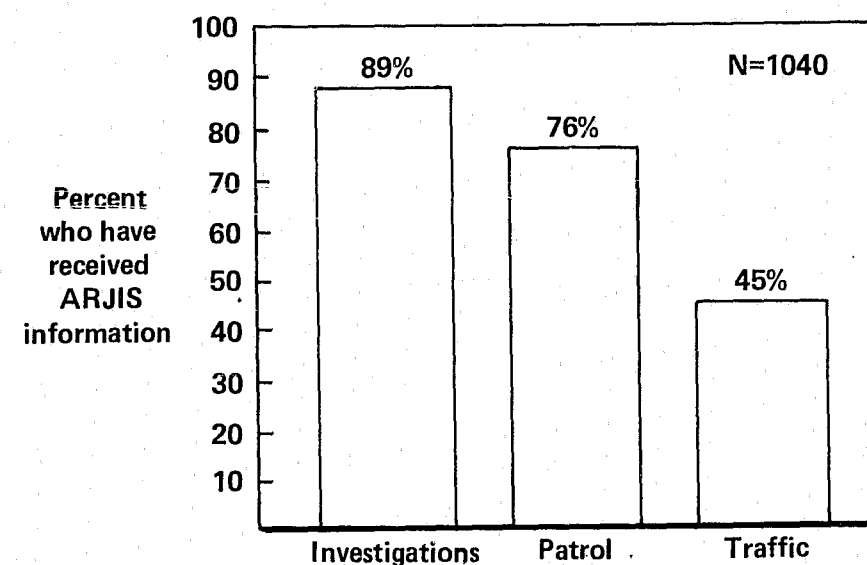


FIGURE 6  
PERCENT OF OFFICERS WHO HAVE RECEIVED ARJIS  
INFORMATION BY ASSIGNMENT  
USER SURVEY  
JULY, 1980



#### SYSTEM USAGE

Most of the law enforcement officers in the San Diego Region are aware of ARJIS (93%), and they know where the computer terminal is located in their agency (89%). In addition, a substantial proportion (75%) of the officers have at one time received information from ARJIS. A slightly higher percentage of SDPD officers (77%) have received ARJIS information than officers at other agencies (73%), but the difference is not significant.

Investigative officers are the most likely to receive ARJIS information (89%), followed by patrol (76%) and traffic officers (45%). This could be related to a higher training rate for investigators as well as access to computer terminals. Many investigative units throughout the region have their own terminal. In addition, computer downtime is less during the day shift worked by most investigators. During the early morning hours the computer is routinely down for maintenance, data entry and batch reporting.

Patrol and traffic officer access is limited in some departments because dispatchers do not have a terminal, or the terminal is not available for officers to personally access information during the evening or graveyard shifts.

#### Use of Components

At the time of the user survey, data were available through ARJIS to all local law enforcement jurisdictions in the field interview, hotsheet, geographic, and personnel components. But officers also had access to the crime case, property and traffic data for the San Diego Police Department, contained in the City Computer system developed prior to the ARJIS grant.<sup>5</sup>

Table 5 shows the proportion of officers who have used each of the components. Field interview data has been obtained by the majority of the officers surveyed (69%) and is used almost equally by SDPD and other agencies. The field interview component use is highest because it provides regional data, and has been operational for an extended period of time.

As would be expected, the crime case and property components are used by a higher percentage of SDPD officers since they contain information from San Diego cases. The San Diego property system is used more often by other agencies (24%) than is crime case (11%). The fact that other agencies do access San Diego information lends credence to the assumption that additional regional data will be useful when it is available.

It is interesting to note that only 20% of the officers have searched ARJIS using the master operations index (MOI). This could be due to

<sup>5</sup>ARJIS staff have developed and implemented new crime case and property components and are expected to implement a revised traffic component by January, 1981. (See page 13)

insufficient training in the use of MOI. At the time of the survey, only field interview data could be obtained through MOI. It is possible that MOI will be used more extensively when other components are available, and the capabilities are more apparent, i.e., simultaneous search of field interviews, crime case, arrest and property components. Users need to understand this feature to maximize effective use of ARJIS; therefore, training should include an overview of the entire network.

TABLE 5  
PERCENT OF RESPONDENTS USING  
ARJIS COMPONENTS, BY AGENCY,  
USER SURVEY  
July, 1980

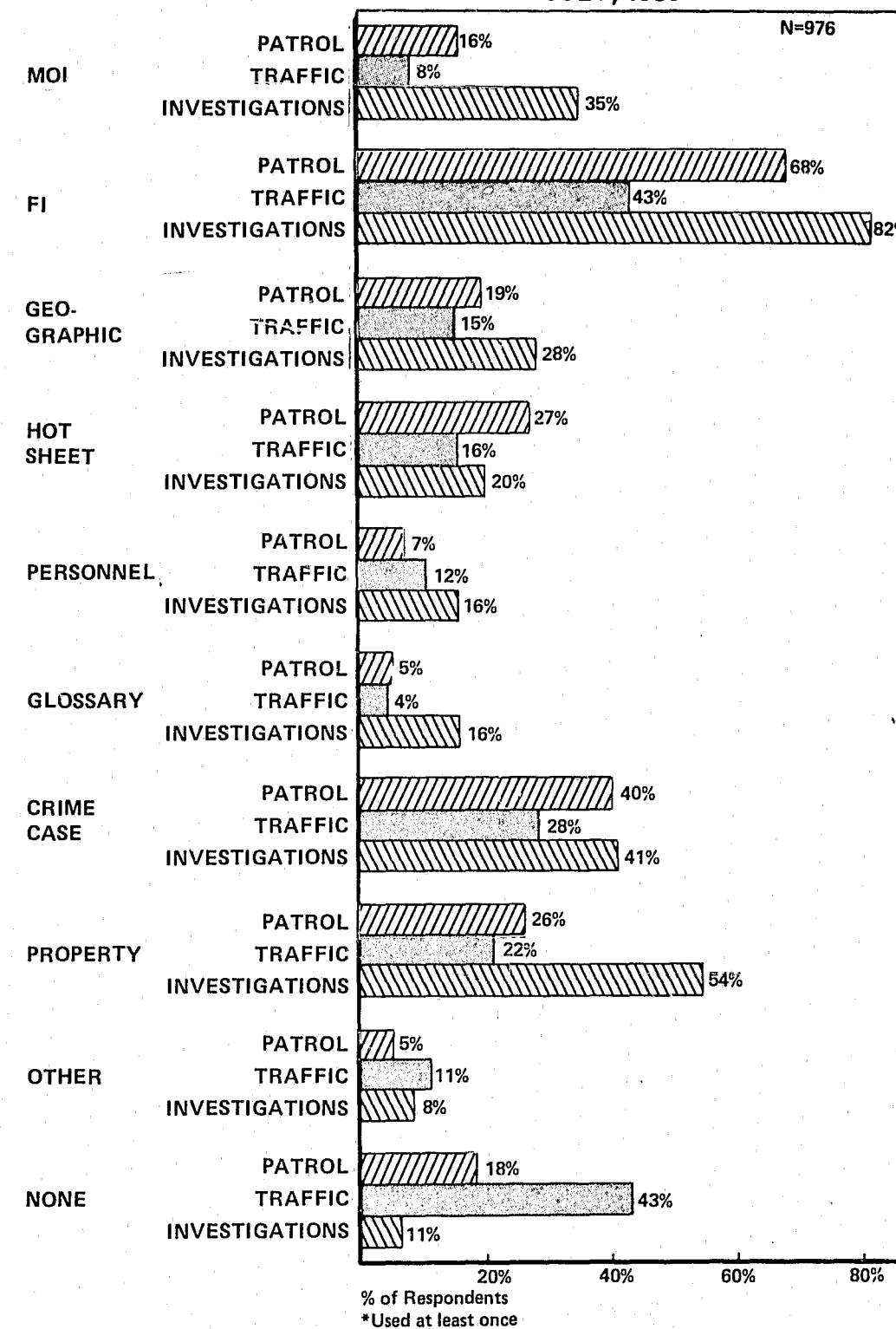
|                         | SDPD | Other Agencies | Total |
|-------------------------|------|----------------|-------|
| Field Interview         | 69%  | 68%            | 69%   |
| Crime Case              | 58   | 11             | 38    |
| Property                | 38   | 24             | 32    |
| Hotsheet                | 31   | 16             | 25    |
| Geographic Inquiry*     | 26   | 14             | 21    |
| MOI                     | 21   | 19             | 20    |
| Personnel               | 9    | 12             | 10    |
| Glossary                | 10   | 4              | 7     |
| Traffic                 | 4    | 4              | 4     |
| Other                   | 2    | 2              | 2     |
| None                    | 15   | 26             | 20    |
| Number of Respondents** | 582  | 425            | 1,007 |

\*Officers may have confused geographic inquiry with a search of crime case by area, leading to a higher than expected usage of geographic inquiry.

\*\*The number of respondents is based on responses to a specific question; therefore, the number may vary.

The use of each component varies by the officers assignment (see Figure 7). Investigative officers are more likely to have used MOI, field interview, property, glossary and personnel components; whereas more patrol officers have used the regional hotsheet. The hotsheet is not a component, but an added table in ARJIS which displays current information on criminal activity from all San Diego County law enforcement agencies. Crime case has been used almost equally by patrol and investigative officers. As expected, traffic officers are more inclined to have used the SDPD traffic information.

FIGURE 7  
PERCENT OF RESPONDENTS  
USING ARJIS COMPONENTS,\* BY  
ASSIGNMENT, USER SURVEY,  
JULY, 1980





### Frequency of Use

The field interview component is used by a higher proportion of officers, and it is used more frequently. Thirty-six percent (36%) of the respondents access field interview files once a week or more (see Figure 8). This also varies by assignment. Fifty-three percent (53%) of the investigators access field interview files once a week or more, compared to 32% of the patrol officers and 20% of the traffic officers (see Table 6).

Direct use of the hotsheet and personnel information is limited to supervisors for security reasons. The hotsheet information is printed and distributed to officers in some departments, which may account for the fact that 17% of the respondents use the hotsheet once a week or more.

The MOI is used most often by investigations divisions, with 28% of the detectives using it once a week or more. This is compared to 10.6% of patrol officers and 8.6% of traffic officers.

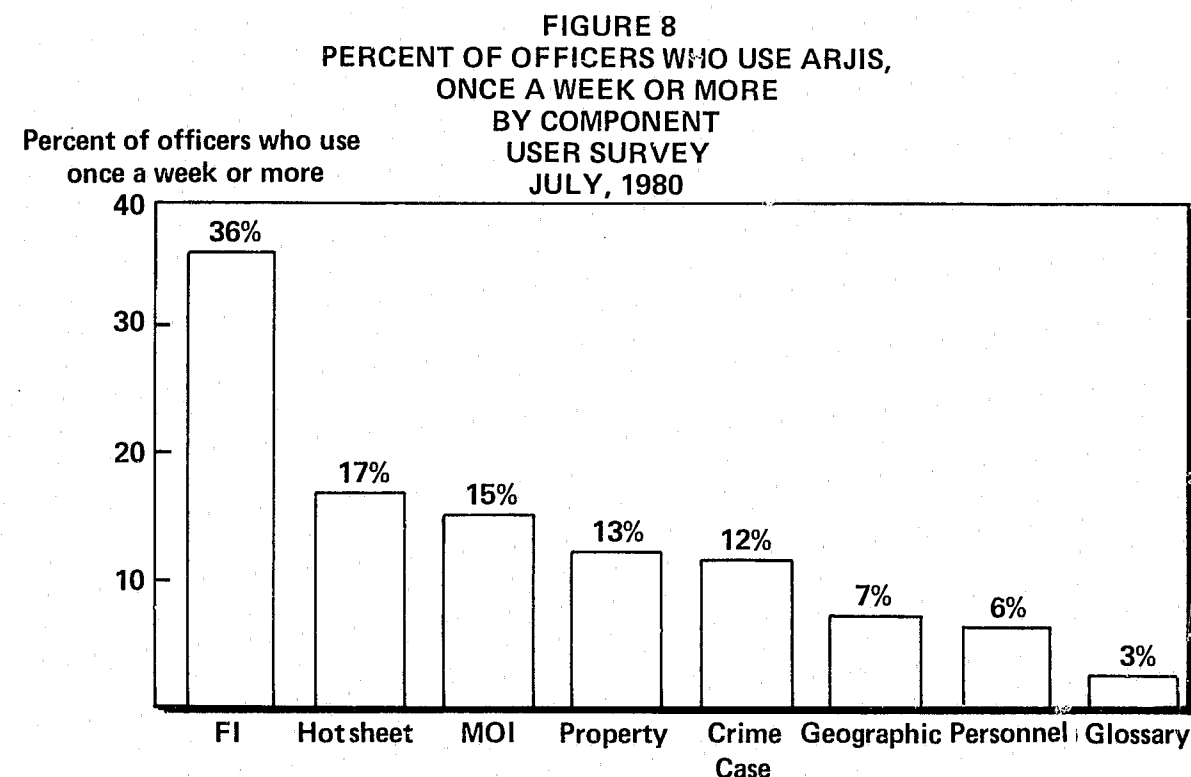


TABLE 6

**FREQUENCY OF USE OF FIELD INTERVIEW**  
**COMPONENT BY ASSIGNMENT**  
**USER SURVEY**  
**July, 1980**

N = 859

|                       | Patrol* | Traffic* | Investigations* |
|-----------------------|---------|----------|-----------------|
| Once a Week or More   | 32%     | 20%      | 53%             |
| Less Than Once a Week | 43%     | 33%      | 32%             |
| Never                 | 26%     | 47%      | 16%             |

NOTE: Percentages may not equal 100 due to rounding.

\*Percent of Respondents

### Method of Access

The method of accessing ARJIS information is related to department policy, location of terminals, availability of terminal operators and training. Of those who have requested ARJIS information, 36% primarily access the terminal personally, 28% request information from an operator, 12% request information from dispatch, and 20% use more than one method. Agencies that provide access to ARJIS to patrol and investigative officers through more than one source have received greater benefits from the system (see page 45).

### Use by Clerical/Records Staff

Records supervisors (14) rated the ease of data entry and retrieval for ARJIS compared to other computer systems. Forty-three percent (43%) feel that data entry into ARJIS is more complicated, with 29% stating that it was about the same and 14% that it was easier. The remaining indicated a don't know response. This may, in part, reflect unfamiliarity with ARJIS which could change with increased training and use.

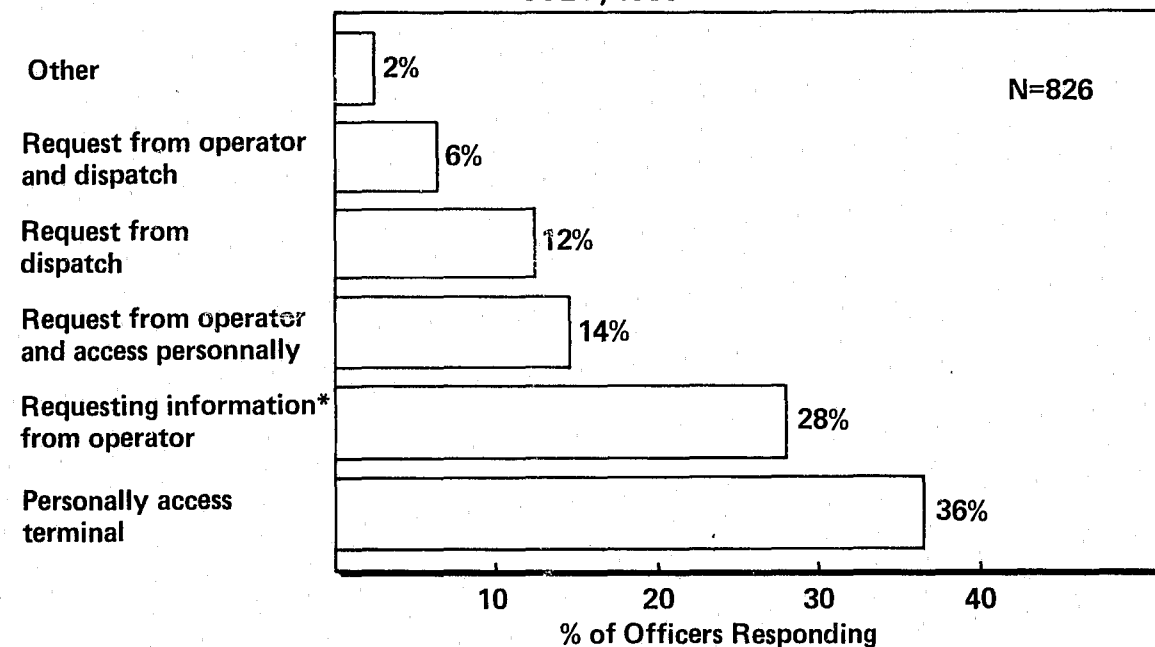
Fifty percent (50%) of the respondents think that data retrieval from ARJIS is about as difficult as other computers, with 20% saying that it was easier and 20% that it was more difficult.

### System Usage by Agency

The evaluators intended to present data on system usage by agency, but the measure available was not adequate. The computer measures transactions by agency, which include both inquiry and entry functions. Therefore, it is not possible to determine the number of inquiries each department makes to the system. This is an important indicator



**FIGURE 9**  
**PERCENT OF OFFICERS**  
**REQUESTING ARJIS INFORMATION**  
**BY METHOD OF ACCESS USER SURVEY**  
**JULY, 1980**



\*18% of SDPD officers request information primarily from Integrated Criminal Apprehension Project (ICAP) staff.

of officer use. The problem is being rectified by San Diego Data Processing Corporation staff and data on inquiries should be available in December, 1980 or January, 1981. This information can be used by ARJIS staff and/or individual agencies to determine changes in usage which could affect the benefits received.

#### BENEFITS AND DISADVANTAGES

The majority of the officers surveyed feel that there are advantages to ARJIS, both present and potential. The most frequently mentioned benefits are time savings (77%), identification of possible suspects (71%) and provision of information that was not previously available (71%). These benefits are also noted most often by administrators (see Table 7).

Insufficient training is a problem, according to 63% of the officers. Also, 40% of the officers expressed concern about the difficulty in obtaining information while on patrol and when the computer is down. In addition to these factors, 33% of the administrators feel that information in ARJIS is not complete, and there are delays in entering data into the system after the report has been submitted (see Table 8).

TABLE 7  
PERCENT OF RESPONDENTS INDICATING  
PRESENT ADVANTAGES OF ARJIS  
USERS AND ADMINISTRATORS  
1980

|   | <u>Officers &amp; Line<br/>Supervisors</u> | <u>Administrators</u> |
|---|--|-----------------------|
| 1) Saves time that would have been spent searching files manually   | 77%  | 77%                   |
| 2) Identifies possible suspects                                     | 72%  | 77%                   |
| 3) Provides information not previously available                    | 71%  | 85%                   |
| 4) Provides information that assists in making arrests              | 62%  | 54%                   |
| 5) Increases leads  | 58%  | 69%                   |
| 6) Provides information that assists in recovery of stolen property | 54%  | 31%                   |
| 7) Provides information that assists in closing crime cases         | 48%  | 38%                   |
| 8) Provides evidence that strengthens cases                         | 40%  | 23%                   |
|   | N = 972                                    | 13                    |

TABLE 8  
PERCENT OF RESPONDENTS INDICATING  
DISADVANTAGES OF ARJIS  
USERS AND ADMINISTRATORS  
1980

|   | <u>Officers &amp; Line<br/>Supervisors</u> | <u>Administrators</u> |
|---|--|-----------------------|
| 1) Insufficient training in use of terminals              | 63%  | 25%                   |
| 2) Difficult to get information while on patrol           | 40%  | 33%                   |
| 3) Excessive downtime                                     | 40%  | 25%                   |
| 4) Delays in entering data                                | 31%  | 33%                   |
| 5) Complicated to query                                   | 21%  | 17%                   |
| 6) Terminals are not easily accessible                    | 19%  | 0                     |
| 7) Information not accurate or complete                   | 11%  | 33%                   |
| 8) Provides too much information per inquiry to be useful | 2%   | 0                     |
| 9) Does not provide useful information                    | 2%   | 0                     |
| 10) It is not cost-effective                              | N/A  | 25%                   |
|   | N = 926                                    | 12                    |

## CHAPTER 3 EFFECTIVENESS OF ARJIS

Preceding page blank

## Effectiveness of ARJIS

### ISSUE III: WHAT IS THE EFFECTIVENESS OF THE ARJIS SYSTEM BASED ON CURRENT OPERATIONS?

#### SUMMARY

Survey data and a review of crime case clearances indicate that ARJIS has provided useful information to officers, but the impact varies by department. Agencies receiving the most benefits are those that have a strong administrative commitment to ARJIS, a high proportion of officers trained in data access, and are actually using ARJIS. Additionally, these departments have maximized the availability of ARJIS information (e.g., through dispatch and/or a terminal operator). It is probable that when information in other components is available regionally, the impact of ARJIS will increase the exchange of regional crime information and result in increased identification and apprehension of suspects.

#### DISCUSSION

As stated previously, it is not possible to measure the full impact of ARJIS until all components are operational. The information presented indicates the effectiveness of ARJIS to date, and also provides a framework for evaluating future impact when additional features are available.

One of the expected outcomes of the ARJIS project is the provision of useful information for identifying suspects, making arrests, canceling crime cases, and recovering stolen property. The usefulness of such information can vary, ranging from providing leads to direct responsibility for an arrest or case closure. For the most part, ARJIS information is used in conjunction with other evidence to establish probable cause for an arrest or in closing a crime case.

The procedures for examining the impact of ARJIS included:

1. Questionnaire responses of officers estimating the utility of ARJIS in contributing to their last ten arrests or case closures.
2. A two-month study of specific Part I crime cases closed by investigators.
3. A trend analysis of clearance rates.

Preceding page blank

SURVEY RESULTS

Patrol officers indicate that in 5% of their arrests, ARJIS provided useful information. Additionally, in 4% of all patrol arrests, officers estimate that the arrests would not have been made without ARJIS<sup>6</sup> (see Table 9). The figures are somewhat higher for San Diego Police Department. Other agencies may show an increase in effective use of ARJIS when all agencies are entering crime case, property and traffic information into ARJIS.

It should be noted that the use of ARJIS is not necessary in all arrests. For example, a patrol officer may arrest a suspect based on observed behavior, or a witness may provide sufficient information regarding a suspect to make an arrest. In addition, other sources of information can be used as a basis for arrest, such as want/warrant inquiries. In these instances, it may not be necessary to make an ARJIS inquiry.

Also, ARJIS may be more useful in certain types of crimes. The survey questions do not differentiate between seriousness of crimes; therefore, misdemeanors and felonies are included in the estimate.

The fact that 69% of the agency administrators surveyed view investigators as the primary user of ARJIS may affect the use of ARJIS by patrol. Field officers can also benefit from ARJIS, and should be trained in how they can effectively use the system.

TABLE 9  
IMPACT OF ARJIS ON PATROL ARRESTS\*  
USER SURVEY  
July, 1980

| Of the Last Ten Arrests:  | SDPD | Other Agencies | All Agencies |
|---|------|----------------|--------------|
| % of patrol arrests in which ARJIS was useful                   | 7%   | 2%             | 5%           |
| % of patrol arrests that would not have been made without ARJIS | 6%   | 2%             | 4%           |

\*Based on estimates made by patrol officers.

<sup>6</sup>Officers were asked to estimate the number of their last ten arrests/clearances in which ARJIS provided useful information, and how many of their last ten arrests/clearances would not have been made without ARJIS.

Case Clearances

Detectives surveyed were also asked to make estimates regarding the value of ARJIS in closing crime cases, regardless of the crime type. Countywide, detectives indicate that: (1) 10% of all crime cases assigned would have been unworkable<sup>7</sup> without ARJIS information, (2) in 13% of all case clearances ARJIS provided useful information, and (3) 7% of the cases cleared would not have been closed without ARJIS (see Table 10).

San Diego Police Department detectives have received more benefits from ARJIS than other agencies combined. For example, ARJIS provided valuable information in 14% of the SDPD cases cleared.

TABLE 10  
IMPACT OF ARJIS ON CASE CLOSURES\*  
USER SURVEY  
July, 1980

| Of the Last Ten Case Clearances:                               | SDPD | Other Agencies | All Agencies |
|--|------|----------------|--------------|
| % of cases that would have been unworkable without ARJIS       | 12%  | 5%             | 10%          |
| % of case closures in which ARJIS was useful                   | 14%  | 10%            | 13%          |
| % of case closures that would not have been made without ARJIS | 9%   | 5%             | 7%           |

\*Based on estimates made by detectives.

Agency Features

There are certain factors which are common to the three agencies that exhibit the most effective use of ARJIS by both patrol and investigative officers. These suggest ways to increase the utility of ARJIS.

1. The departments have a strong administrative commitment to ARJIS.

<sup>7</sup>Detectives are unable to investigate cases where there is no evidence (i.e., leads, suspect, information, witnesses). These cases are considered unworkable.

2. A higher proportion of officers have been trained in how to access ARJIS information.
3. A higher than average percentage of officers have used ARJIS.
4. The agencies have ARJIS information available for field officers through radio-dispatch and terminals accessible to officers.
5. Two of the three departments have full-time terminal operators/analysts who retrieve ARJIS information for officers.
6. Two agencies are in close proximity to San Diego Police Department and use their crime case and/or property information more frequently than other agencies.

One factor, in itself, may not lead to effective use of ARJIS, but there seems to be a combined effect in agencies meeting most or all of these criteria.

#### CASE STUDY

To further evaluate the impact of ARJIS, a study was conducted of Part I crime<sup>8</sup> case clearances in four law enforcement jurisdictions: San Diego, Chula Vista, La Mesa, and the Sheriff's Department. The results are not directly comparable to the survey responses presented in the previous section, because that questionnaire asked about all crime cases closed.

In this study, detectives were asked to complete an ARJIS feedback form for each Part I crime case closed, indicating which ARJIS components were used, if ARJIS provided useful information and how ARJIS was useful. (See Methodology, page 75) The data allow analysis of the utility of ARJIS by agency and specific crime types.

#### Findings

In a two-month study, 869 forms were returned. Results indicate that ARJIS information was useful in 7% of the sample Part I crime cases (60 of 869). The agencies in which ARJIS was used more often also show a higher level of usefulness of the ARJIS information (see Table 11). In addition, in 31% of the cases in which ARJIS was actually searched (60 of 193), the information received was beneficial. This substantiates the survey data and suggests the hypothesis that if investigators use ARJIS more extensively, the overall impact would be greater.

<sup>8</sup>Rape, robbery, aggravated assault, burglary, grand theft, and auto theft.

TABLE 11  
USEFULNESS OF ARJIS IN CLOSING CASES  
BY AGENCY, STUDY OF ACTUAL CASES CLOSED  
July 28 - September 26, 1980

|   | SDPD | Sheriff* | Chula Vista | La Mesa | Total          |
|---|------|----------|-------------|---------|----------------|
| Number of sample cases                        | 615  | 173      | 40          | 41      | 869            |
| % of cases closed in which ARJIS was used**   | 19%  | 19%      | 38%         | 66%     | 22%<br>N = 193 |
| % of cases closed in which ARJIS was useful** | 5%   | 5%       | 20%         | 32%     | 7%<br>N = 60   |

\*Vista, Santee, and Encinitas stations.

\*\*Frequencies can be found in Table 20, page 99.

#### Value by Crime Type

When analyzed by crime type, data show that ARJIS was of more value in burglary and grand theft case investigations. ARJIS provided useful information in 14% of the burglary and 10% of the grand theft cases. ARJIS was also used in a relatively high proportion of these cases (41% and 31%, respectively). The property involved in these crimes may partially account for these results, especially at the San Diego Police Department where stolen and pawned property are computerized. It is also possible that additional training in the use of ARJIS for investigators in "crimes against persons" and "auto theft" divisions would increase the use and, therefore, the benefits received. The fact that ARJIS was used in a high proportion of rape cases (30%), with useful information received in only 2% of the cases, indicates that additional training directed specifically at rape case investigations may be of value.

TABLE 12  
USEFULNESS OF ARJIS IN CLOSING CASES BY CRIME TYPE  
STUDY OF ACTUAL CASES CLOSED  
July 28 - September 26, 1980

|  | Rape | Robbery | Aggravated<br>Assault | Burglary | Grand<br>Theft | Auto<br>Theft | Total          |
|--|------|---------|-----------------------|----------|----------------|---------------|----------------|
| Number of sample cases                       | 44   | 103     | 191                   | 254      | 103            | 174           | 869            |
| % of cases closed in which ARJIS was used*   | 30%  | 21%     | 8%                    | 41%      | 31%            | 5%            | 22%<br>N = 193 |
| % of cases closed in which ARJIS was useful* | 2%   | 7%      | 2%                    | 14%      | 10%            | 2%            | 7%<br>N = 60   |

\*Frequencies can be found in Table 21, page 100.

#### How ARJIS Was Useful

Of those cases in which ARJIS information was useful (60), the inquiry most often verified previous knowledge about a case (47%) or provided "leads" (45%).<sup>9</sup> In a smaller proportion of cases, an arrest was made (17%) or a case was closed by exceptional means (5%), directly as a result of ARJIS (see Table 13). In 12% of the cases, ARJIS provided information that was responsible for the recovery of stolen property.

Supporting the benefits of regional information is the fact that in 23% of these cases (14), the useful information obtained through ARJIS was from other law enforcement agencies.

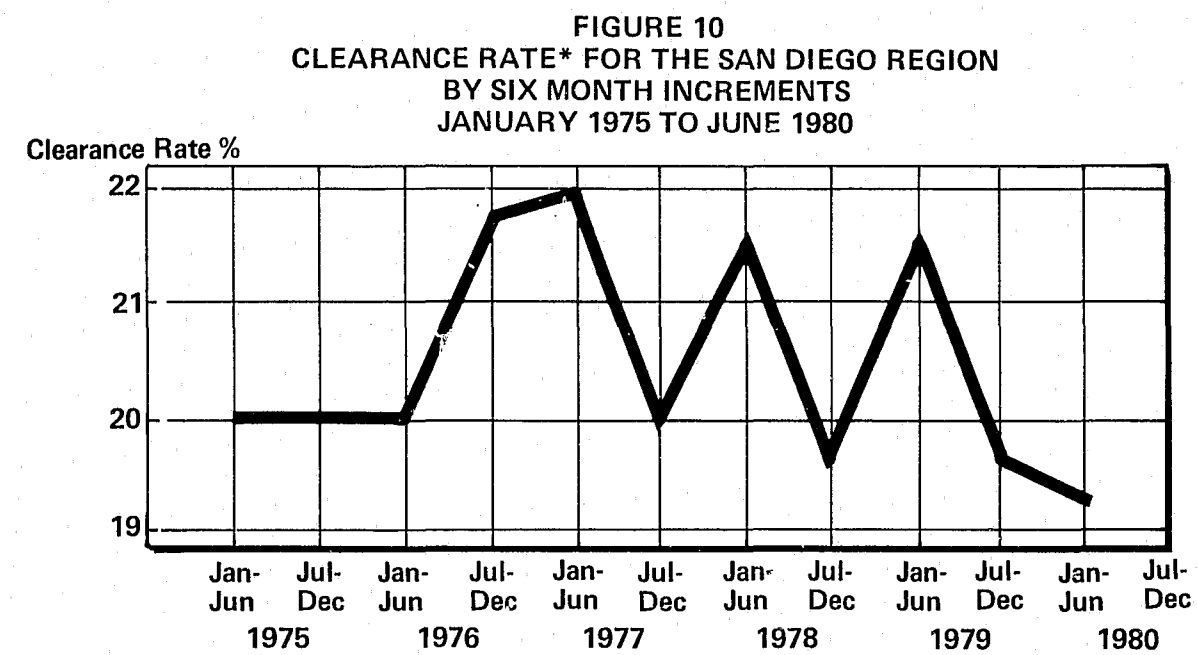
<sup>9</sup>Detectives could give more than one response.

TABLE 13  
WAYS THAT ARJIS WAS USEFUL IN CLOSING CASES  
STUDY OF ACTUAL CASES CLOSED  
July 28 - September 26, 1980  
N = 60

|   | Number<br>of Cases | % of<br>Cases |
|---|--------------------|---------------|
| Suspect was arrested  | 10                 | 17%           |
| Case was closed by exceptional means  | 3                  | 5%            |
| Suspect was eliminated  | 2                  | 3%            |
| Other cases in a series were canceled   | 6                  | 10%           |
| Provided new leads  | 27                 | 45%           |
| Verified previous knowledge   | 28                 | 47%           |
| Strengthened the case   | 12                 | 20%           |
| Property recovered  | 7                  | 12%           |
| Other (warrant issued, located address, suspect identification, saved phone calls, previous history of suspect) | 9                  | 15%           |

#### COUNTYWIDE TREND ANALYSIS

A measure of the effectiveness of law enforcement in addressing crime problems is the clearance rate. This is the number of Part I crime cases cleared by arrest or exceptional means during a given time period divided by the reported crimes. Figure 10 shows that there is a seasonal variance in the clearance rate, but the overall trend has been toward a decrease in the percent of cases cleared since June, 1977. This has not changed since the implementation of the ARJIS components that are operational, to date. Many variables affect reported crimes and case clearances, such as policy decisions, staffing, and the economy, to name a few. It is not expected that the regional effects of ARJIS would be apparent until the entire system is operational and has been used for an extended period of time. This data should be examined over the next five years to determine if ARJIS has impacted the ability of law enforcement to solve crime cases.



\*Clearance Rate is the number of crimes cleared by arrest or exception during a given time period, divided by the number of reported crimes.

## CHAPTER 4 COST OVERVIEW



## Cost Overview

### ISSUE IV: WHAT IS THE COST OF ARJIS TO USER AGENCIES?

#### SUMMARY

The cost of ARJIS for the first six months of 1981 will be approximately \$905,000, excluding cost for data entry personnel. This includes \$804,300 for administrative costs and user fees and an additional \$100,700 for equipment lease (displays, printers and telephone lines). The cost per agency ranges from 1.1% to 3.1% of their total appropriations for law enforcement.

The cost-effectiveness of ARJIS cannot be determined until the system is fully operational. However, agency administrators who are committed to ARJIS should begin to develop procedures for measuring results of ARJIS use, to be compared to the cost.

#### DISCUSSION

Thirty-six percent (36%) of the agency administrators think that the usefulness of ARJIS, to date, justifies the cost after grant funding ends in December, 1980. The majority (55%) feel that the cost-effectiveness of the system depends on future costs to each agency and/or the extent to which the remaining components are developed.

The current cost estimates for ARJIS II consist of two elements:

- 1) Projected base costs and proposed member assessments.
- 2) Estimated system utilization costs.

The base costs include Board of Directors expense, the contracted services of San Diego Data Processing Corporation, computer costs for program development, testing, and storage and a project manager.<sup>10</sup> These costs have been apportioned to individual cities based on population as provided for in the Joint Powers Agreement (JPA).

<sup>10</sup> The project manager will be provided by the City of San Diego for the remainder of FY1980-81.

The utilization costs are projections based on actual use of the existing components and potential volume of transactions when additional components are on-line. These costs could vary because they are dependent on input and inquiry by each user agency. A range of costs has been established based on minimum and maximum projected usage (see page ), but for purposes of analysis, agency fees are based on the average amount.

The average estimated cost for ARJIS (base assessment and user fees) for the first six months of 1981 is \$804,318, with fees ranging from \$8,406 for Coronado to \$442,132 for San Diego Police Department (see Table 14). This is somewhat higher than estimates prepared in April, 1980, due to changes in projected utilization. These costs do not include the lease of equipment at each agency or the personnel costs for data entry.

The total cost for the lease of terminals, printers and telephone equipment is an additional \$100,700 for January through June, 1981. This ranges from \$2,617 in the smaller agencies to \$37,082 for San Diego Police Department (see Table 14, Column 2). Some agencies may need additional terminals or printers in the future which would increase equipment costs.

To place these costs in perspective in relation to the total law enforcement budget in each jurisdiction, the total cost for fees and equipment was annualized and is presented as a percent of the total appropriations for FY80-81. This percentage ranges from 1.1% for the Sheriff's jurisdiction to 3.1% for Imperial Beach.

55

TABLE 14  
ESTIMATED ADMINISTRATIVE, USER AND EQUIPMENT COST OF ARJIS, BY AGENCY  
January - June, 1981

|                  | 1981 ARJIS<br>Fees (6 months) | 1981 Equipment*<br>Cost (6 months) | Total 1981<br>ARJIS Cost<br>(6 months) | Annualized<br>ARJIS Cost<br>(12 months) | FY80-81 Law<br>Enforcement<br>Budget | % of Budget |
|------------------|-------------------------------|------------------------------------|--|---|--------------------------------------|-------------|
| Carlsbad         | \$ 10,662                     | \$ 2,617                           | \$ 13,279                              | \$ 26,558                               | \$ 1,814,502                         | 1.5%        |
| Chula Vista      | 28,286                        | 4,169                              | 32,455                                 | 64,910                                  | 4,059,890                            | 1.6         |
| Coronado         | 8,406                         | 3,730                              | 12,136                                 | 24,272                                  | 1,111,043                            | 2.2         |
| El Cajon         | 26,728                        | 2,617                              | 29,345                                 | 58,690                                  | 3,133,531                            | 1.9         |
| Escondido        | 30,462                        | 3,730                              | 34,192                                 | 68,384                                  | 3,293,299                            | 2.1         |
| Imperial Beach** | 8,465                         | 1,892                              | 10,357                                 | 20,714                                  | 669,299                              | 3.1         |
| La Mesa          | 23,446                        | 2,617                              | 26,063                                 | 52,126                                  | 2,342,330                            | 2.2         |
| National City    | 22,861                        | 3,730                              | 26,591                                 | 53,182                                  | 2,873,330                            | 1.9         |
| Oceanside        | 32,798                        | 4,169                              | 36,967                                 | 73,934                                  | 4,829,324                            | 1.5         |
| San Diego        | 442,132                       | 37,082                             | 479,214                                | 958,428                                 | 52,097,449                           | 1.8         |
| Sheriff          | 159,652                       | 25,882                             | 185,534                                | 371,068                                 | 34,950,000                           | 1.1         |
| Other Agencies   | 10,420                        | 8,465                              | 18,885                                 | 37,770                                  | —                                    | —           |
| TOTAL            | \$804,318                     | \$100,700                          | \$905,018                              | \$1,810,036                             | —                                    | —           |

\*Includes displays, printers and telephone equipment. These figures could increase due to rate changes occurring after September, 1980.

\*\*Although Imperial Beach is not currently participating in ARJIS, cost figures are included because they have the opportunity to join the JPA.

### Data Entry Costs

Data entry personnel costs were computed based on estimates made by law enforcement personnel regarding the amount of time that will be spent entering field interviews, crime cases, property and hotsheet information. For agencies that have had little or no experience in entering all types of documents, an estimate could not be made.

The range of data entry costs is from \$2,310 in Carlsbad to \$139,259 in San Diego Police Department. It should be noted that these figures reflect the projected time actually available to clerks for entering data. This may not be sufficient time to enter all related documents.

Seventy-nine percent (79%) of the records supervisors surveyed anticipate that there will be problems with data entry when additional components are operational. The major reason cited is the lack of personnel to keep up with the workload. This implies that agencies can expect additional data entry personnel costs in the future.

There is a potential for clerks to save some time due to computerization of tasks currently performed manually, such as state reporting, compiling alpha files on victims and suspects, data entry into local computer files, modus operandi (M.O.) files and crime logs. These potential time savings will be examined further after agency personnel have had additional experience with the components that are/will be operational.

TABLE 15

#### ESTIMATED DATA ENTRY COST BY AGENCY January - June, 1981

| <u>Agency</u>  | <u>Data Entry Cost<br/>Projection (6 months)</u> |
|----------------|--|
| Carlsbad       | \$ 2,310   |
| Chula Vista    | 11,780   |
| Coronado       | 2,817  |
| El Cajon       | 7,474  |
| Escondido      | 25,587   |
| Imperial Beach | Unknown  |
| La Mesa        | 5,790  |
| National City  | Unknown  |
| Oceanside      | 16,166   |
| San Diego*     | 139,259  |
| Sheriff        | 46,666   |
| TOTAL          | \$257,849  |

\*Assuming all data entry clerks are hired by  
January 1, 1981.

TABLE 16

#### COMPARISON OF PROJECTED ARJIS FEES\* ANNUALIZED COST FOR FY80-81 and FY81-82 COST

|                | <u>Annualized<br/>FY1980-81</u> | <u>Projected Fees<br/>FY1981-82</u> | <u>% Increase</u> |
|----------------|---------------------------------|-------------------------------------|-------------------|
| Carlsbad       | \$ 21,323.00                    | \$ 24,037.00                        | 12.7%             |
| Chula Vista    | 56,571.00                       | 65,086.00                           | 15.1%             |
| Coronado       | 16,817.00                       | 19,758.00                           | 17.5%             |
| El Cajon       | 53,455.00                       | 62,127.00                           | 16.2%             |
| Escondido      | 60,924.00                       | 73,010.50                           | 19.8%             |
| Imperial Beach | 16,929.00                       | 19,864.00                           | 17.3%             |
| La Mesa        | 46,891.00                       | 55,894.00                           | 19.2%             |
| National City  | 45,721.00                       | 54,785.00                           | 19.8%             |
| Oceanside      | 65,596.00                       | 77,447.50                           | 18.1%             |
| San Diego      | 884,266.00                      | 1,067,053.50                        | 20.7%             |
| Sheriff        | 319,303.00                      | 363,831.50                          | 13.9%             |
| Other Agencies | 20,839.00                       | 27,367.00                           | 31.3%             |
| TOTAL          | \$1,608,635.00                  | \$1,910,261.00                      | 18.8%             |

\*Administrative Assessment and User Fees (excludes equipment and data entry personnel costs).

#### Fiscal Year 1981-82

Projected annual base and user fees for FY1980-81 and 1981-82 are compared in Table 16.<sup>11</sup> Figures for terminals and data entry personnel costs for FY1981-82 are not available, but will be for the follow-up report. Overall, there is an estimated 18.8% increase in ARJIS fees. This is primarily due to the anticipated availability of the traffic system and the automated worthless document index. The charges to individual agencies are dependent on use and, therefore, could vary.

#### Alternative Funding Sources

Preliminary findings indicate that law enforcement agencies that continue to participate in ARJIS will expend approximately 1% to 3% of their total budgets on ARJIS. In light of continually shrinking resources, other sources of funding should be explored. Each jurisdiction can examine their total revenues received as a result of enforcement activities (e.g., traffic citations, charges for copying reports, etc.). Increasing or diverting some of these funds to assist with the costs of ARJIS may be an option in some jurisdictions. Such use, of course, would be affected by state restrictions and local ordinances mandating how the revenues are appropriated.

#### Measuring Cost-Effectiveness of ARJIS

The question of whether or not ARJIS is cost-effective cannot be answered until all components are operational for an extended period of time. But preliminary cost-benefit studies should be carried out by individual agencies as components become available. The ARJIS computer will provide information on frequency and nature of transactions (inquiries and entries) by component. But the effectiveness of the information accessed and entered must be monitored by police agencies within a framework that takes into account the crime-fighting objectives of law enforcement, e.g., identification and apprehension of suspects, property recovery, etc. Without documentation of benefits received from ARJIS, agency administrators may be confronted with difficulty at yearly budget hearings to justify their continued participation in ARJIS.

The question to be answered for elected officials is, what are the outcomes/benefits of maximum usage? For example, what are the results of entering 12,000 field interrogation reports per month (as SDPD currently does)? Are there more investigative leads? More arrests? More case closures? A decrease in the crime rate? To date, this kind of information has not been documented.

Some of the evaluation techniques used in this report could be adopted by agency personnel interested in the "success" of ARJIS. In addition,

<sup>11</sup>Average projected cost for utilization was used.

the following procedures could be used either singularly or in combination:

1. The usefulness of ARJIS could be measured for a sample of crime cases (e.g., 100 cases) by indicating either on the report itself, or a separate case closure form:

|                  | Patrol     |           | Investigations |           |
|------------------|------------|-----------|----------------|-----------|
| ARJIS was used   | <u>Yes</u> | <u>No</u> | <u>Yes</u>     | <u>No</u> |
| ARJIS was useful | <u>Yes</u> | <u>No</u> | <u>Yes</u>     | <u>No</u> |

If a police department generates 1,000 crime reports, this sampling procedure would provide information on 10% of the reports written.

2. Another possibility is to have a form next to the terminal(s) which officers check-off each time they access the terminal.

| Date    | Officer | Component Queried |            |     |          | Useful | Not Useful |
|---------|---------|-------------------|------------|-----|----------|--------|------------|
|         |         | F.I.              | Crime Case | MOI | Property |        |            |
| 1) 12-3 | Smith   |                   | X          | X   |          | X      |            |
| 2) 12-5 | Jones   | X                 |            |     | X        |        | X          |
| 3)      |         |                   |            |     |          |        |            |
| 4)      |         |                   |            |     |          |        |            |
| 5)      |         |                   |            |     |          |        |            |
| 6) etc. |         |                   |            |     |          |        |            |

A similar process could be used by the dispatcher in those agencies in which information is available via dispatch, although a feedback mechanism would have to be developed to determine whether information was useful. A more critical analysis could refine the degree of usefulness. A scale could be used:

| <u>1</u>       | <u>2</u> | <u>3</u> | <u>4</u> | <u>5</u>    |
|----------------|----------|----------|----------|-------------|
| Provided leads |          |          |          | Closed case |

3. As components become operational, agency personnel can examine their reported crime, arrest, case clearance and property recovery statistics in an attempt to link the use of ARJIS information with fluctuations in crime data. For example, as the stolen/pawned property component is used, is there a rise in the amount of property recovered? How much of the property recovered is a result of using the pawned property file? Prior to full implementation of the property component, agency personnel could sample

a number of cases in which property was recovered and determine how it was recovered. A similar study subsequent to implementation of the ARJIS component would assess changes in the nature of property recovery.

4. During the next few months, agency personnel can examine their investigative caseloads compared to number of officers, average amount of time expended from case assignment to case closure, and number of cases closed. Similar data can be compiled 3-6 months later to determine whether a time savings and subsequent cost savings have occurred, using a unit cost-per-case.

These suggestions represent options agency personnel could take to determine the value of ARJIS to their agency. Unfortunately, any procedures used require additional "paperwork" by officers. Yet they represent the actual users of the system and are in the best position to make judgments regarding the usefulness of ARJIS in specific cases. The amount of "extra" work required can be limited in several ways:

1. Conduct survey or have forms completed for brief periods, e.g., 2 week increments.
2. Focus on a particular crime, e.g., burglary, and only collect ARJIS data relative to that crime.
3. Select a specified number of patrol officers and investigators (10% of agency) to complete forms or participate in cost-per-case study.
4. Choose one shift on which access of ARJIS information will be monitored.

From a research perspective, use of any of these procedures can bias results. If agency personnel use these, they should exercise caution in generalizing results as reflecting department-wide experience with ARJIS. Notwithstanding this qualification, for those administrators who are interested in linking costs of ARJIS with benefits received, this section may be helpful. Evaluation unit staff can provide technical assistance in developing procedures and analyzing results.

## REFERENCES

## References

1. Block, Peter and Donald Weidman, Managing Criminal Investigations - Prescriptive Package, U.S. Department of Justice, 1975.
2. Boydstun, John, San Diego Field Interrogation, System Development Corporation, 1975.
3. Boydstun, John, et. al., San Diego Police Department Versus Post Experimental Data, System Development Corporation, 1979.
4. Comprehensive Planning Organization, Applications of the DIME/GBF for Criminal Justice Planning, California, June, 1977.
5. Cox, Lyle A., et al., "Crime Analysis and Manpower Allocation Through Computer Pattern Recognition," The Police Chief, October, 1977.
6. Huff, Richard, Automated Regional Justice Information System (ARJIS) Law Enforcement Component, Fifth Year Grant Application, Comprehensive Planning Organization, 1979.
7. Kolender, W. B. and J. A. McQueeney, "An Integrated Approach to Police Information," unpublished.
8. Kraemer, Kenneth, et. al., The Management of Information Systems: Implementation Policy for Computing in American Local Government, Public Policy Research Organization, University of California, Irvine, 1978.
9. McQueeney, J. A., "The Automated Regional Justice Information System in San Diego County", unpublished.
10. Mid-Willamette Valley Council of Governments, Criminal Justice Information Systems District III - Final Report - Findings and Recommendations, Salem, Oregon, June, 1973.
11. National Clearinghouse for Criminal Justice Information Systems, Evaluating Donor Systems - A Software Transfer Technique, Search Group, Inc., California, February, 1980.
12. National Computer Management, Inc., Comparative Cost-Effectiveness and Integration Analysis of Five Information Systems, Los Angeles Police Department, 1976.

13. Public Systems, Inc., and Institute for Police Studies, Final Report on the Feasibility of a Coordinated Records and Communications System for Region XI, County of San Diego, Volume 1, California Council on Criminal Justice, June, 1971.
14. Stewart, M. R., Alaska - Study of State Information Systems - PTAR, National Criminal Justice Reference Service, 1973.
15. Stubblefield, Keith A., Regional Automated Information Network (RAIN) Phase I Report, Oregon Law Enforcement Council, March, 1978.
16. Weber, Jan and Paul Weber, Intensive Planning Session - Consultants Summary, 1977.

In addition, Search Group, Inc., conducted a computer inquiry for information on known regional systems in the country according to scope and function.

## APPENDICES



FIGURE 11  
CURRENT TABLE OF ORGANIZATION  
ARJIS

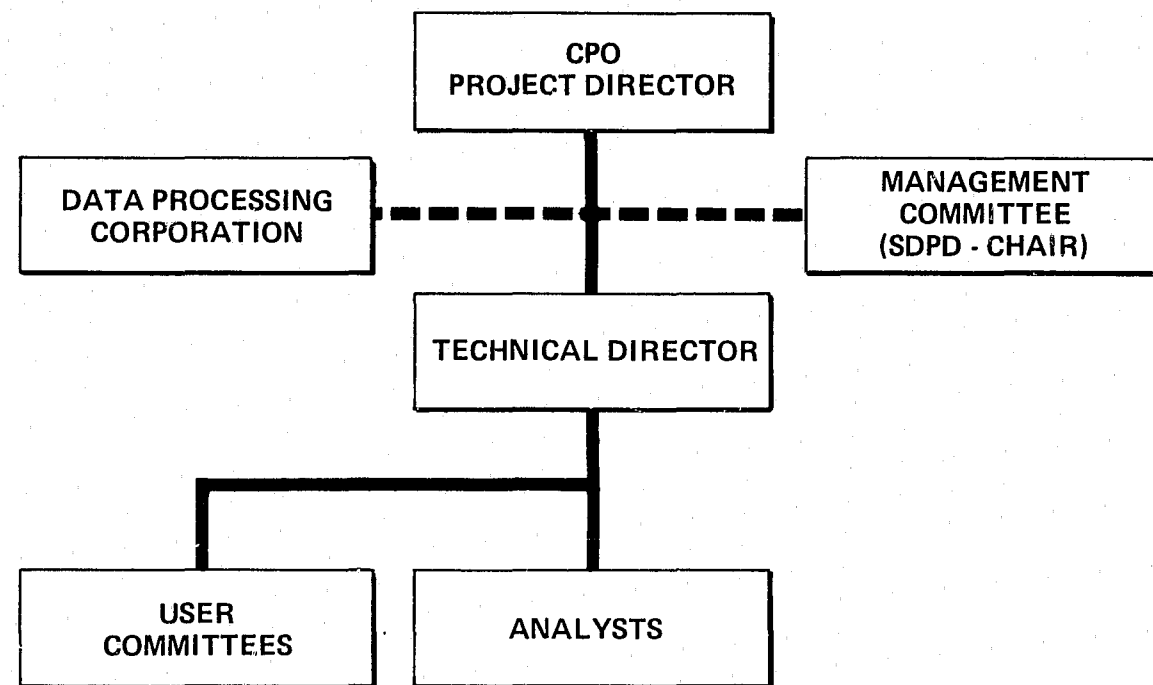
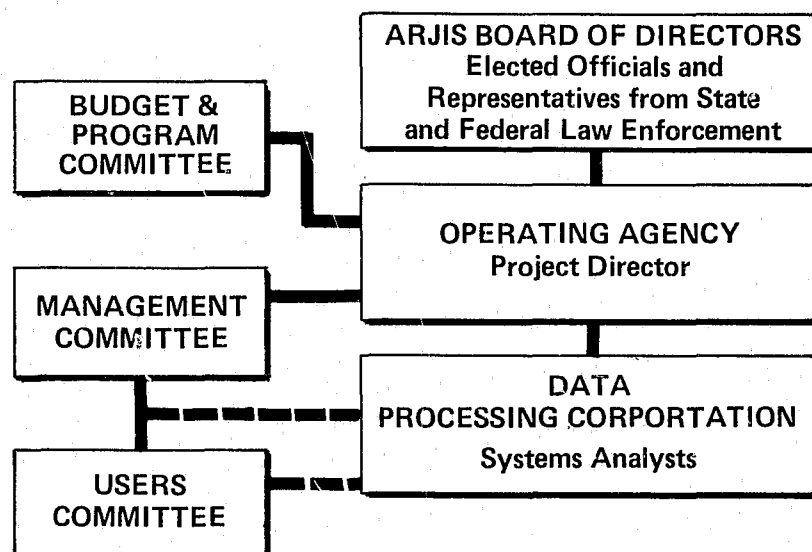


FIGURE 12  
PROPOSED TABLE OF ORGANIZATION  
ARJIS JOINT POWERS AGREEMENT



## APPENDIX B

### COMPONENTS OF ARJIS

The following is a brief description of each component:

#### Field Interview

When a beat officer stops a person he or she thinks could be involved in illegal activity and there are insufficient grounds to make an arrest, the officer may choose to complete a "field interview" report. The FI report consists of pertinent information such as the person's name, address, physical description, location of the contact, type of activity, the time, and a description of any vehicles involved.

While such reports have been routinely collected by most law enforcement agencies in the past, they were manually filed and retrieved only in each agency's jurisdiction. By using a standard FI form for all agencies in the region, the information is easily accessible by computer and is also available to all agencies when information is needed in locating a victim, suspect or witness to a crime.

#### Crime Case Component

The crime case component records incidents of crime by address, geographic area and case number. An officer can go to the ARJIS computer and single out a geographic area to find out how many cases of commercial burglaries, for example, occurred for a specific span of time. By reviewing cases this way, it is possible to connect common elements in each case which can lead to a suspect.

#### Property Component

The San Diego Police Department has a serialized property records system, but only about 12% of stolen property can be identified by a serial number. The property component is designed to describe the other 88% of stolen property using identifying terms which will be standardized for use by all law enforcement agencies. This component will also contain information on property pawned throughout the region, thus enabling investigators to trace stolen property by matching it with property which has been pawned, even if the property is pawned outside the city in which it was stolen.

#### Arrest Component

This part of ARJIS will enable any law enforcement agency to trace an individual from initial contact through booking in County Jail, through final disposition in the courts.

### Master Operations Index

This component allows an officer, using a name and physical description, to find out whether an individual is known to the ARJIS system. For example, through one inquiry, it may be learned that a person is known to be: (1) a victim of an incident in Chula Vista, (2) a burglary suspect in National City, (3) a field interviewee in San Diego, and (4) a witness in Escondido. If the individual is known, the officer can then use detailed information within the computer.

A user can also enter locations (street addresses, street range, block, beat, etc.) and review activities at those locations. The master operations index will tie all the other ARJIS components together.

### Personnel Component

The personnel component has two major functions. First, it serves to maintain security of data in the files so that no individual at any law enforcement agency will be allowed access without clearance through the personnel component. Second, the personnel component may also be used to prepare personnel rosters and other management reports, and to use listings of special skills possessed by individuals within each department such as second languages, marksman or paramedic skills. Not all capabilities are available as yet.

### Automated Worthless Document Index

This component will assist investigators in the area of credit card, forgery and non-sufficient fund crimes. The component compiles multiple indices regarding victims and suspects involved in worthless document crimes and compares these indices against jail bookings.

### Crime Analysis

This component will aid in the allocation of manpower and resources. It will produce both statistical analyses of crime reports and graphic displays of types of crimes (for example, burglaries in certain neighborhoods). Increased understanding of regional crime patterns could lead to more effective use of patrols and surveillance in suppressing particular crimes.

### Manpower Allocation

This component was to include a series of programs to aid in designing patrol beats and assigning personnel to an area. It is not being implemented at this time.

## APPENDIX C

TABLE 17  
ACHIEVEMENT OF ARJIS OBJECTIVES BY COMPONENT  
November, 1980

|   | Fully Implemented | Partially Implemented | Not Implemented |
|---|-------------------|-----------------------|-----------------|
| <b>A. FIELD INTERVIEW (FI)</b>  |                   |                       |                 |
| <u>Priority 1</u>   |                   |                       |                 |
| 1. Field Interrogation Document (Regional)  | X                 |                       |                 |
| 2. On-Line Data Entry   | X                 |                       |                 |
| 3. Field Interrogation Search   | X*                |                       |                 |
| 4. Audit Trail, Reorganization and Purge of Data Base                                   | X                 |                       |                 |
| 5. Standardized Routing Procedure for FI Forms  |                   |                       | X               |
| 6. Contingency Plan for Back-up of Computer System                                      |                   |                       | X               |
| <u>Priority 2</u>   |                   |                       |                 |
| 1. Centralized Filing of FI Documents   | X                 |                       |                 |
| 2. Supervisory Information  |                   |                       | X               |
| 3. Management Information   |                   |                       | X               |
| 4. Meet Field Officer Information Needs   | X                 |                       |                 |
| 5. FI Submittal Notification  |                   |                       | X               |
| 6. Police Unit Coordination in Use of FI Information                                    | X                 |                       |                 |
| 7. Law Enforcement Agency Interface   | X                 |                       |                 |
| 8. Interface to Other ARJIS Systems Through MOI   |                   | X                     |                 |
| <b>B. PERSONNEL</b>   |                   |                       |                 |
| <u>Priority 1</u>   |                   |                       |                 |
| 1. Skills Index   |                   |                       | X               |
| 2. Current Assignment   |                   |                       | X               |
| 3. Manpower Status  |                   |                       | X               |
| 4. Personnel Information Maintenance  |                   | X                     |                 |
| 5. Training   |                   |                       | X               |
| 6. Activity Measures  |                   |                       | X               |
| <u>Priority 2</u>   |                   |                       |                 |
| 1. Medical Information Processing   |                   |                       | X               |
| 2. Court Subpoena System  |                   |                       | X               |
| <u>Priority 3</u>   |                   |                       |                 |
| 1. Employee Restricted Information  |                   |                       | X               |
| 2. Career Development   |                   |                       | X               |
| <b>C. MASTER OPERATION INDEX**</b>  |                   |                       |                 |
| 1. Automated regional cross-correlation on how individuals are known to law enforcement |                   | X                     |                 |
| 2. Reduce manual activities   | X                 |                       |                 |
| 3. Increase accuracy and timeliness of data   | X                 |                       |                 |
| 4. Reduce need for multiple files   | X                 |                       |                 |
| 5. Reduce need for varied terminal equipment  |                   |                       | X               |
| 6. Provide effective method to control data entry and access                            | X                 |                       |                 |
| 7. Improved base of information   | X                 |                       |                 |
| 8. Geographic correlations  | X                 |                       |                 |
| 9. More effective and efficient means of obtaining data                                 | X                 |                       |                 |
| 10. Updating and security functions   | X                 |                       |                 |

\*With the exception that a search cannot be made by the Investigative Unit and FI document number.

\*\*Revised.

|  | Fully<br>Implemented | Partially<br>Implemented | Not<br>Implemented |
|--|----------------------|--------------------------|--------------------|
| <b>D. CRIME CASE</b>   |                      |                          |                    |
| <u>Priority 1</u>  |                      |                          |                    |
| 1. Victim Data Base  | X                    |                          |                    |
| 2. MOI Interface   | X                    |                          |                    |
| 3. Logical Relations with Other Components                                 |                      | X                        |                    |
| 4. Regional Interface between City and County                              |                      |                          | X                  |
| 5. Reduce Data Entry Delay   | X                    |                          |                    |
| 6. Reduce Delays in Routing Cases  |                      | X                        |                    |
| 7. On-line Inquiry Retrieval Time  |                      | X                        |                    |
| 8. Data Security   | X                    |                          |                    |
| 9. Back-up and Recovery  | X                    |                          |                    |
| 10. Allowable Downtime   | UNK                  |                          |                    |
| <u>Priority 2</u>  |                      |                          |                    |
| 1. Data Integrity  | X                    |                          |                    |
| 2. Geobase Interface   | X                    |                          |                    |
| 3. State and Federal Interface   |                      |                          | X                  |
| 4. On-line Update  | X                    |                          |                    |
| 5. On-line Training  |                      |                          | X                  |
| 6. Officer Feedback  |                      |                          | X                  |
| 7. Court Dispositions  |                      |                          | X                  |
| 8. Managerial Reporting  | X                    |                          |                    |
| 9. Growth  | UNK                  |                          |                    |
| <u>Priority 3</u>  |                      |                          |                    |
| 1. Full Data Sharing   |                      |                          | X                  |
| 2. On-line Update Speed  |                      |                          | X                  |
| 3. CAD Case No. Assignment   |                      |                          | X                  |
| 4. Victim Notification   |                      |                          | X                  |
| 5. Elimination of Source Document  |                      |                          | X                  |
| 6. 24-hour Availability  |                      |                          | X                  |
| <b>E. CRIME ANALYSIS</b>   |                      |                          |                    |
| <u>Priority 1</u>  |                      |                          |                    |
| 1. Method for Determining Case Susceptibility to Closure On-line           |                      |                          | X                  |
| 2. Crime Prediction  |                      |                          | X                  |
| 3. Technique for Series Detection  |                      |                          | X                  |
| 4. Method for Gathering Data   | X                    |                          |                    |
| <u>Priority 2</u>  |                      |                          |                    |
| 1. Geographically Oriented Crime Statistics Method                         | X                    |                          |                    |
| 2. a. Method for Comparing Areas of Responsibility                         | X                    |                          |                    |
| b. Means for Alerting Patrol of Abnormal Activity                          |                      |                          | X                  |
| <b>F. PROPERTY</b>   |                      |                          |                    |
| 1. Revise Crime Case and Pawn Documents                                    | X                    |                          |                    |
| 2. Improve Manner in which Reports Are Completed                           |                      | X                        |                    |
| 3. Complete and Accurate Description of Property by Victim                 |                      | X                        |                    |
| 4. Record Unserialized Property  |                      | X                        |                    |
| 5. Include Information Re: Crime Case                                      | X                    |                          |                    |
| 6. Interface with County, State and City Computers                         |                      |                          | X                  |
| 7. Reports - Statistical   |                      |                          | X                  |
| <b>G. ARREST</b>   |                      |                          |                    |
| <u>Priority 1</u>  |                      |                          |                    |
| 1. Data Base of Who, When, Where Detained, What Property and What Happened |                      |                          | X                  |
| 2. Detention Document Data Entry   |                      |                          | X                  |
| 3. Back-Up - Recovery  |                      |                          | X                  |

|   | Fully<br>Implemented | Partially<br>Implemented | Not<br>Implemented |
|---|----------------------|--------------------------|--------------------|
| 4. GTR Interface  |                      |                          | X                  |
| 5. Security Provisions  |                      |                          | X                  |
| 6. Personnel Locator Table  | X                    |                          |                    |
| 7. Violation/Unit Correlation Table   |                      |                          | X                  |
| 8. Geographic Inocding  |                      |                          | X                  |
| <u>Priority 2</u>   |                      |                          |                    |
| 1. Online Data Retrieval  |                      |                          | X                  |
| 2. Document Control Facility  |                      |                          | X                  |
| 3. County System Interface  |                      |                          | X                  |
| 4. Alternate Batch Retrievals   |                      |                          | X                  |
| 5. Statistical/Summary Reporting  |                      |                          | X                  |
| 6. Daily Log  |                      |                          | X                  |
| 7. Investigator Notification  |                      |                          | X                  |
| 8. Automatic Want/Warrant Check   |                      |                          | X                  |
| 9. Sound Alike Names  |                      |                          | X                  |
| 10. Geographical Location Retrieval   |                      |                          | X                  |
| 11. File Initialization   |                      |                          | X                  |
| 12. Data Maintenance Capability   |                      |                          | X                  |
| 13. Interface to Other ARJIS systems  |                      |                          | X                  |
| 14. Assist/Non-Assist Retrieval   |                      |                          | X                  |
| <u>Priority 3</u>   |                      |                          |                    |
| 1. Investigative Follow-up Control  |                      |                          | X                  |
| 2. Disposition Control  |                      |                          | X                  |
| 3. Automated Disposition Update   |                      |                          | X                  |
| 4. CAD Interface  |                      |                          | X                  |
| <b>H. AUTOMATED WORTHLESS DOCUMENT INDEX</b>  |                      |                          |                    |
| 1. Provide Forgery/Fraud with Computerized Index Containing Pertinent Information Regarding Fraudulent and Stolen Documents |                      |                          | X                  |
| 2. Interface with Other ARJIS Components  |                      |                          | X                  |
| 3. Officer Notification   |                      | X                        |                    |
| 4. Batch Reporting  |                      |                          | X                  |

## APPENDIX D

### METHODOLOGY

#### Case Study

To determine the degree to which ARJIS was used in investigating reported crimes, detectives at six law enforcement agencies were asked to provide feedback on the usefulness of information received. In addition to area of the county, five variables were considered in soliciting the agencies for the sample: crime rate, arrests, property stolen, population and number of sworn officers. The sample jurisdictions represent agencies ranking in the high, middle and low range on these factors. Of the six agencies, sufficient information was received from four agencies.

1. San Diego Police Department (downtown)
2. San Diego County Sheriff's Department
3. La Mesa Police Department
4. Chula Vista Police Department

During a two-month period (July 28 - September 26, 1980), detectives completed an ARJIS Feedback Form for Part I crime cases cancelled (i.e., rape, robbery, aggravated assault, burglary, grand theft and motor vehicle theft). A study of this nature creates additional paperwork for officers; therefore, the scope had to be limited to minimize interference with job performance. For this reason, misdemeanor and other felony cases were not included. Part I crimes do represent a substantial proportion of an investigator's workload (i.e., workable cases), so the sample is considered to be adequate for purposes of this evaluation.

A cancelled case is one closed by arrest or exception (suspect is known, but cannot be arrested).\* The officers indicated which ARJIS component was used for each case and in what way the information was useful (provided leads, verified information, etc.). In addition, they provided information on other manual or computer files that were used in the investigation and if information was obtained from other law enforcement agencies (see form, pages 95 and 96).

The results may slightly underrepresent the use of ARJIS in cases where a patrol officer searched the system prior to submitting a case to detectives. The survey of patrol officers gives information regarding their use of ARJIS in making arrest which augment the case study results.

\*Auto theft investigators in some departments consider a case closed if the property was recovered, and these were included in the study.

User Surveys

Patrol officers, detectives and line supervisors in the 10 local law enforcement agencies participating in ARJIS completed surveys which dealt with the following issues:

- 1. The present and potential value of ARJIS components
- 2. The value and impact of the project to date
- 3. Training needs
- 4. Problems regarding use of ARJIS
- 5. The types of information necessary for law enforcement operations

The survey was to include all patrol officers, detectives, agents, corporals and sergeants. The officers were asked to complete the questionnaires at line-up or squad conference during a three to four day period to allow for sick leave and days off. The response rate was approximately 55%, with 1,060 forms returned. This provides a sufficient number to evaluate the situation at each agency as well as regionwide.

Factors specific to certain agencies which could influence results were considered in analyzing the survey data such as the availability of in-house computers and the methods available for accessing ARJIS information.

The survey responses break down by law enforcement agency as follows:

|                  | # of Surveys Returned |
|------------------|-----------------------|
| Carlsbad         | 31                    |
| Chula Vista      | 59                    |
| Coronado         | 16                    |
| El Cajon         | 40                    |
| Escondido        | 52                    |
| La Mesa          | 31                    |
| National City    | 28                    |
| Oceanside        | 67                    |
| San Diego Police | 613                   |
| Sheriff          | 123                   |
| TOTAL            | 1,060                 |

The responses to the questionnaire are presented on page 80.

Management Survey

In addition to the opinions and comments of ARJIS users, it was necessary to obtain information on each agency's policies and procedures regarding ARJIS (i.e., the administrative perspective). The Chiefs and Sheriff,

or their representatives, completed surveys addressing the department's involvement in ARJIS development, training procedures, benefits and disadvantages of the system, and future concerns about ARJIS. Complete compilation is on page 84.

Records Survey

Record keeping is an area in which ARJIS has the potential to substantially impact workload, time expenditures and cost. No quantitative data is available which reflects the actual effects of ARJIS on clerical personnel when the system is fully operational. Therefore, records supervisors were asked, through a survey, to make estimates of current and future time expenditure on ARJIS data entry, record keeping and statistical reporting based on their present experience. In addition, information was provided on training, data entry procedures, additional equipment needed, problems and suggestions for improvement. Surveys were completed by all of the ten local law enforcement agencies participating in ARJIS. (See questionnaire and responses, page 90.)

APPENDIX E

USER SURVEY

Do not write in this space.

ID Number: 1 2 3 4 5 6

July 1980

ARJIS QUESTIONNAIRE

N = 1060

The Criminal Justice Evaluation Unit of the Comprehensive Planning Organization is evaluating the Automated Regional Justice Information System (ARJIS). To do this, it is essential that we obtain the comments and opinions of the users of the system: patrol, traffic and investigative officers and their supervisors.

Your responses will be confidential. The information provided will be presented in statistical form and will not be identified by name.

After you have completed the questionnaire, please return it to your patrol supervisor/investigations supervisor.

Do Not Write  
in this space

1. Do you know about the Automated Regional Justice Information System (ARJIS), the computer that presently contains field interview data, hotsheet information, etc?

982 Yes 76 No

7

2. Do you know where the ARJIS terminal is located in your agency?

941 Yes 116 No

8

Please specify the location: \_\_\_\_\_  
\_\_\_\_\_

9 10

3. Have you ever received information from ARJIS?

792 Yes 264 No

11

- 3a. How do you usually request this information? (Check only one)

300 query terminal personally

149 request given to terminal operator

106 request given to communications/dispatch over radio.

86 request given to ICAP/Crime Analysis (San Diego Police Dept. only)

184 Other (specify): \_\_\_\_\_

12

Do not write  
in this space

4. Have you been trained in how to: (Check all that apply)

- 133enter data into ARJIS  
493access information from the ARJIS terminal  
534prepare field interview reports  
453prepare regional crime incident reports?

5. Do you think you need (additional) training in: (Check all that apply)

- 628data entry  
778accessing information from the ARJIS terminal  
309preparation of field interview reports  
352preparation of regional crime incident reports?

6. The following is a list of ARJIS inquiries. Please indicate which ones you have used.

N = 1007

- 201Master Operations Index (MOI)  
691Field Interview  
214Geographic Inquiries (e.g., verification of an address)  
250Hotsheet  
102Personnel  
74Glossary (descriptive terms for property)  
383Crime Case  
323Property  
64Other (specify):  
197None (Skip Question 7)

7. How often do you request information from each of these components? (Indicate the letter of your response next to each component)

- | Responses                 | % who use component once a week or more (a-d) |
|---------------------------|---|
| a. more than once a day.  | 15% MOI                                       |
| b. once a day             | 36% Field Interview                           |
| c. 3-4 times a week       | 7% Geographic Inquiries                       |
| d. 1-2 times a week       | 17% Hotsheet                                  |
| e. Once every 2 weeks     | 6% Personnel                                  |
| f. Once a month           | 3% Glossary                                   |
| g. Less than once a month | 12% Crime Case                                |
| h. Never                  | 13% Property                                  |

Do not write  
in this space

Patrol Officers (Detectives: go to Question 11)

8. How many arrests were you credited with in the last month?

\_\_\_\_\_ arrests Mode = 0-9 arrests \_\_\_\_\_ none

9. Estimate the number of your last 10 arrests for which ARJIS provided useful information.\*

\_\_\_\_\_ arrests 4.8% \_\_\_\_\_ none

10. Estimate the number of your last 10 arrests which probably would not have been made without ARJIS information.\*

\_\_\_\_\_ arrests 1.7% \_\_\_\_\_ none

Detectives (Patrol Officers: go to Question 15)

11. How many crime cases were you assigned to investigate in the last month?

\_\_\_\_\_ cases Mode = 0-9 crime cases

12. Estimate the number of your last 10 actively investigated cases which would have been unworkable without the use of ARJIS information. \*

\_\_\_\_\_ cases 9.5% \_\_\_\_\_ none

13. Estimate the number of your last 10 crime case clearances (by arrest or exceptional means) in which ARJIS provided useful information.\*

\_\_\_\_\_ case clearances 12.5% \_\_\_\_\_ none

14. Estimate the number of your last 10 crime case clearances that probably would not have been cleared without ARJIS information.\*

\_\_\_\_\_ case clearances 7.2% \_\_\_\_\_ none

\*Percentage was computed based on the responses.



Do not write  
in this space

All Personnel

15. It is (would be) useful to me to have the following information available from other law enforcement agencies in San Diego County (Check all that apply). N = 995

659 arrests  
605 reported crimes  
767 field interview information  
722 stolen property  
160 worthless document index  
643 hotsheet information  
385 traffic  
518 pawned property  
42 other (specify): \_\_\_\_\_

16. Which of the following are benefits of ARJIS? (Check all that apply) N = 972

690 provides information that was not previously available to me  
695 identifies possible suspects  
752 saves time that would have been spent searching files manually  
563 increases leads  
391 provides evidence that strengthens cases  
604 provides information that assists in making arrests  
524 provides information that assists in recover of stolen property  
463 provides information that assists in closing crime cases  
4 other (specify): (1) Provides accomplice information; (2) hit  
and run information; (3) probable cause  
38 none

17. Which of the following are disadvantages of ARJIS? (Check all that apply) N = 926

99 information is not accurate or complete  
287 there are delays in entering data  
368 excessive down time  
15 does not provide useful information  
177 computer terminals are not easily accessible  
372 difficult to get information while on patrol  
587 insufficient training in use of terminals  
196 complicated to query  
17 provides too much information on one inquiry to be useful  
52 other (specify): (1) limited information available; (2) accessibility;  
(3) training problems; (4) inquiry problems; (5) cost; (6) downtime;  
88 none (7) information not useful

Do not write  
in this space

18. Have you had any problems in obtaining ARJIS information?

306 yes 693 no

If yes, please explain:

(1) training or instruction manual (96)  
(2) delays & downtime (75)  
(3) inquiry problems (34)  
(4) accessibility (25)  
(5) downtime/training (18)  
(6) downtime and access (14)  
(7) limited information available (9)  
(8) training and access (7) (9) other (8)

19. Do you have any suggestions for improving the ARJIS system, based on the components that are now operating?

222 yes 767 no

If yes, please explain:

(1) additional training (105)  
(2) improve access (29)  
(3) additional information in ARJIS (28)  
(4) decrease downtime (19)  
(5) simplify inquiry (16)  
(6) combine ARJIS and County (1)

20. Agency: \_\_\_\_\_

21. Present assignment: (Check only one)

648 Patrol  
129 Traffic  
247 Investigations  
Records  
Research & Planning  
20 Other (specify): Records, Research & Planning

22. Rank: 865 Patrol officer 3 Corporal 3 Lieutenant  
32 Agent 123 Sergeant 2 P.S.A.

23. Years with the agency: Mode = 0-5 years (53%)

499 Days 199 Graveyard  
277 Evenings 24 Varies

24. Working hours: (shift)

43 yes 177 no

25. Would you like more information about ARJIS?

Agency 13 agencies

ARJIS MANAGEMENT QUESTIONNAIRE  
SEPTEMBER, 1980

The Criminal Justice Evaluation Unit of the Comprehensive Planning Organization is evaluating the Automated Regional Justice Information System (ARJIS). To do this, it is essential that we obtain the comments and opinions of the administrators of the law enforcement agencies involved in ARJIS.

Your responses will be confidential. The information provided will be presented in statistical form and will not be identified by name or agency. If you have any questions, please call Chris Curtis at 236-5361.

TRAINING

1. Please estimate how many of your sworn officers have been trained to:  
(Please check the appropriate response for each item.)

|  | <u>All</u> | <u>Most</u> | <u>Some</u> | <u>Few</u> | <u>None</u> |
|--|------------|-------------|-------------|------------|-------------|
| a. Enter data into ARJIS?                      | <u>—</u>   | <u>—</u>    | <u>3</u>    | <u>7</u>   | <u>3</u>    |
| b. Access information from the ARJIS terminal? | <u>—</u>   | <u>3</u>    | <u>7</u>    | <u>3</u>   | <u>—</u>    |
| c. Prepare field interview reports?            | <u>7</u>   | <u>4</u>    | <u>—</u>    | <u>—</u>   | <u>2</u>    |
| d. Prepare regional crime incident reports?    | <u>6</u>   | <u>2</u>    | <u>1</u>    | <u>—</u>   | <u>3</u>    |

2. Do you think the ARJIS approach of training key personnel who would train other officers in each department has been effective?

11 Yes

2 No. Why not? (1) Hasn't been done yet; (2) Trainers are not doing necessary training

3. Was in-service training on the use of ARJIS provided to your officers?

12 Yes (Go to Question 3a and 3b)

1 No

- 3a. Was this training formal or informal on an "as needed" basis?

1 Formal

11 Informal

1 Both

- 3b. On the average, how many hours of in-service training did each officer receive?

1-10 hours

4. Do you think that the instruction manuals provided by ARJIS are satisfactory?

11 Yes

2 No. Why not? (1) Manuals are too thick and difficult to decipher; (2) Pocket guide that is brief and concise would be advantageous.

5. Do you think your officers need (additional) training in: (Check all that apply.)

3 data entry  
10 accessing information from the ARJIS terminal  
1 preparation of field interview reports  
5 preparation of regional crime incident reports  
3 none of the above

SYSTEM USE

6. Please rank from 1-9 the ARJIS components in order of their usefulness to this department, with 1 being the most useful. (Each component should be given a different number.)

1 Field Interview  
2 Crime Case  
4 Property  
5 Arrest  
3 Master Operations Index (MOI)  
8 Personnel  
7 Automated Worthless Document Index  
6 Crime Analysis  
9 Manpower Allocation

7. Which of the following types of information from other law enforcement agencies in San Diego is or would be useful to you or your officers? (Check all that apply.)

1 personnel information  
11 arrest information  
10 reported crimes  
13 field interview information  
13 stolen property  
10 worthless document index  
9 regional hotsheet information  
12 pawned property  
2 other (specify) (1) crime analysis; (2) vehicle

8. What division in this department is the primary user of ARJIS (excluding data entry functions). (Check only one unless usage is equal.)

3 Patrol  
- Traffic  
10 Investigations  
3 Other (specify) Warrants

DATA ENTRY

9. Are all field interviews from this department currently being entered into ARJIS?

No Response = 2

7 Yes  
4 No

10. Do you think all field interviews should be entered into ARJIS, or only selected ones?

8 All  
5 Selected ones  
(1) Some have no value; (2) not all valid; (3) some absurd  
Why? and should be screened; (4) some are incomplete or not  
valid; (5) some FI's are of no value.

11. Should all crime incidents be entered or only selected ones?

6 All  
6 Selected ones  
No Response = 1

Why? (1) Some are too minor; (2) too many misdemeanors; (3) only reportable Part 1 and/or 2; (4) major crime trends.

12. When the arrest component is operational, should all arrests be entered or only selected ones?

10 All  
3 Selected ones  
Why? (1) Minor arrests will overload system and have little value;  
(2) no need for some arrests.

13. Does this department need additional ARJIS terminals?

7 Yes. How many? 27 terminals.  
In what location(s)?

6 No Business office  
Detectives  
Dispatch  
Area commands  
Records

PATROL ACCESS

\*14. Do patrol officers have access to ARJIS terminals or ARJIS information 24 hours a day?

9 Yes  
1 No. Do you see this as a disadvantage?  
Yes. In what way?

1 No

\*15. Do patrol officers in this department investigate a crime case beyond the preliminary investigation?

6 Yes. Please explain:

4 No

BENEFITS AND DISADVANTAGES OF ARJIS

Since all components of ARJIS are not yet operational, we would like your opinion concerning present benefits as well as potential benefits of the system.

16. What are the benefits of ARJIS to date, if any? What are the potential benefits of ARJIS when the entire system is operational? (Check all that apply.)

| Present   | Potential |  |
|-----------|-----------|--|
| <u>11</u> | <u>4</u>  | provides information that was not previously available                                   |
| <u>10</u> | <u>6</u>  | identifies possible suspects   |
| <u>10</u> | <u>6</u>  | saves time that would have spent searching files manually                                |
| <u>9</u>  | <u>7</u>  | increases leads  |
| <u>3</u>  | <u>11</u> | provides evidence that strengthens cases   |
| <u>7</u>  | <u>9</u>  | provides information that assists in making arrests                                      |
| <u>5</u>  | <u>8</u>  | provides information that assists in recovery of stolen property                         |
| <u>5</u>  | <u>7</u>  | provides information that assists in closing crime cases                                 |
|           | <u>2</u>  | (1) provides regional fraud information;<br>other (specify): (2) management information. |
|           |           | none   |

\*Question was only asked at the ten local law enforcement agencies.

17. What are the disadvantages of ARJIS?  
(Check all that apply.)

- ☒ 3 it is not cost effective  
☒ 4 information is not complete  
☐ information is not accurate  
☒ 4 there are delays in entering data  
☒ 3 excessive down time  
☐ does not provide useful information  
☐ computer terminals are not easily accessible  
☒ 4 difficult to get information while on patrol  
☒ 3 insufficient training in use of terminals  
☒ 2 complicated to query  
☐ provides too much information on one inquiry to be useful  
☒ 4 other (specify): (1) components slow in developing; (2) delay in response  
☒ 1 none time; (3) excessive time in data entry.

18. Does the usefulness of ARJIS justify the potential cost to your agency after grant funding ends in December 1980?

- ☒ 4 Yes  
☒ 1 No )  
☒ 6 Depends ) Please explain: (1) remains to be seen; (2) not if costs increase

19. Does, or will, ARJIS duplicate any information already available to your department in any existing computer system?

- ☒ 7 Yes (Go to Questions 19a and 19b.)  
☒ 6 No

19a. What information?

19b. Will the existing system(s) be eliminated as a result of ARJIS?

- ☒ 3 Yes Maybe = 1  
☒ 3 No

#### DEVELOPMENT AND IMPLEMENTATION OF ARJIS

20. Was this department involved in any phase of the development of ARJIS?

- ☒ 9 Yes (Go to Questions 20a and 20b.)  
☒ 4 No

20a. Please explain this agency's involvement in the development of ARJIS.

Management/User Committees

20b. Were there any problems associated with this development process?

- (1) Communication problems with ARJIS staff;  
(2) Excessive number of people involved;  
(3) Political one-upmanship

21. What do you think your agency's role should be in the future development or enhancement of ARJIS beyond the grant period?

Management/User Committees

22. Has this agency had any problem in implementing ARJIS?

- ☒ 5 Yes. Please explain. (1) Uncertainty of local government support led to delays; (2) training staff; (3) hiring data entry staff;  
(4) phasing out current procedures; (5) resistance to change;  
☒ 8 No (6) not all systems are in operation.

23. Do you have any suggestions for improving the ARJIS system, based on the components that are now operating?

- ☒ 4 Yes. Please explain. (1) City/County interface; (2) make system cost-effective; (3) provide BCS reports;  
☒ 9 No (4) delays because SDFP enters our FI's.

**CONTINUED**

**1 OF 2**

ARJIS QUESTIONNAIRE

## Records Supervisors

The Criminal Justice Evaluation Unit of the Comprehensive Planning Organization is evaluating the Automated Regional Justice Information System (ARJIS). To do this, it is essential that we obtain the comments and opinions of the individuals responsible for supervision of crime data collection and record keeping.

Your responses will be confidential. The information will be presented in statistical form and will not be identified by name. If you have any questions or wish to discuss the survey, please call Chris Curtis at 236-5361.

1. Were you or any of your clerks trained by ARJIS staff in data entry or retrieval on any ARJIS components?

13 Yes      1 No (Go to Question 3)

(a) How many clerks were trained? 1-20 clerks

(b) How many training sessions were there? 1-5 sessions

(c) On the average, how many hours of training did each clerk receive? 2-24 hours

(d) What topics and/or components were covered in the training?  
Crime Case, FI, Geographic, Personnel Hotsheet

2. Do you think the ARJIS training process for data entry/retrieval was satisfactory?

10 Yes      3 No      1 Depends

(a) Why not? (1) Little training on other components; (2) having a 24-hour operation makes training difficult; (3) not all were trained.

(b) In what way could the ARJIS training process have been improved?  
(1) Offered more than once; (2) explain overall ARJIS system; (3) all records personnel should be trained by ARJIS staff; (4) manual simplified.

3. Was in-house training provided to clerks in data entry or retrieval?

9 Yes      5 No      Do you intend to? 4 Yes         No

(a) How many clerks received in-house training? 1-10 clerks

(b) How many hours of in-house training did each clerk receive? 1-16 hours

(c) What topics and/or components were covered in the in-house training?  
Crime case, FI, hotsheet, geocode

\*Supervisors at the four Sheriff substations and the downtown office completed a questionnaire.

4. Do you think that the instruction manuals provided by ARJIS are satisfactory?

10 Yes      3 No (Why not?)      1 Don't know

(1) Pawn Property section not covered satisfactorily; (2) not logically structured; (3) FI - hard to find what you are looking for; (4) needs to be simplified - brief explanation of formats.

5. Compared to other computer systems, data retrieval from ARJIS is:

3 Easier      7 About the same      3 More complicated      1 Don't know

6. Compared to other computer systems, data entry into ARJIS is:

2 Easier      4 About the same      6 More complicated      2 Don't know

7. Do dispatch clerks at this department make ARJIS inquiries for officers on patrol?

2 Yes      7 No      2 Sometimes (please explain)      3 Don't know

(1) Depending on traffic; (2) night shifts.

8. Who usually retrieves data for the officers? (CHECK ONLY ONE)

5 Officers themselves

9 A terminal operator

1 Dispatch/communications clerk

   ICAP/crime analysis (San Diego Police Department only)

1 Other (specify) Intermediate Typist/Clerk

   Don't know

9. For which of the ARJIS components is your department currently entering data?

FI, crime case, hotsheet, geocode

10. Does your department enter all field interviews taken by officers?

8 Yes      6 No (Approximately what percent of the field interviews do you enter? 20-95 %)

11. After a field interview is taken, how long does it take before it is entered into ARJIS? 2 hours to 5 days

12. Do you anticipate any problems with data entry when additional components are operational?

11 Yes (please explain)      3 No

9 Staffing

1 Training

1 Need additional terminals

1 Computer downtime

1 Errors in new forms

13. Is it necessary that data entry clerks be able to interpret the information on the forms (i.e., crime incident, FI, arrest) as a quality control to increase the accuracy of the data in ARJIS?

14 Yes      No

14. How many ARJIS terminals does this department have currently (includes those that are budgeted for FY80-81)? 1-13 terminals

15. Does or will this department need additional ARJIS terminals?

7 Yes 5 No 2 Don't Know

(a) How many? 1-2 terminals

(b) In what location(s)?

2 Detectives  
4 Business Office  
3 Dispatch  
1 Each Clerk

The following questions deal with the number of clerk positions needed for the ARJIS workload.

16. Please indicate how many clerk positions you currently have working on ARJIS?

     None

17. How many additional positions will be devoted to ARJIS when all components are implemented? (i.e., crime case, property and arrest)

     None

18. Has this department added any clerk positions in the budget directly as a result of ARJIS?

     None

| Job Classification | # of Positions | Person-Hours Per Month | Avg. Hourly Wage |
|--------------------|----------------|------------------------|------------------|
|                    |                |                        |                  |
|                    |                |                        |                  |
|                    |                |                        |                  |
|                    |                |                        |                  |
|                    |                |                        |                  |
|                    |                |                        |                  |
|                    |                |                        |                  |

19. As far as you know, once the ARJIS system is fully operational, will any files, records or forms be phased out?

6 Yes 5 No 3 Don't know

(a) Please explain:

3 Suspect/Victims file 2 BCS  
3 FI and/or Crime Case 1 M.O. file  
1 Alpha file 1 Property file modified  
1 Complaint log 1 Statistics files

(b) Will this result in a time savings for clerks?

5 Yes      No 1 Don't know

(c) How many person-hours per month would you estimate this would save?

25-237 person-hours per month 1 Don't know

20. In the future, will the ARJIS system result in a decrease in requests for manual files by officers?

2 Yes 4 No 8 Don't know

(a) How many clerical person-hours would be saved per month, on the average?

     person-hours per month 2 Don't know

21. If ARJIS prepares all BCS data for your department in the future, how much time would be saved each month?

0-320 person-hours per month

22. Other than any already mentioned, will any additional job tasks be eliminated by ARJIS?

     Yes 7 No 7 Don't know

(a) What tasks? (please be specific)

N/A

(b) Will this result in a time savings?      Yes      No N/A

(c) How many person-hours per month would be saved?

N/A person-hours per month



23. Do you have any suggestions for improving ARJIS, based on the components that are now operating?

4 Yes (please explain) 9 No 1 No Response

(1) Interface with CLETS; (2) more than one charge on arrest/crime case;  
(3) place on crime case to indicate outside agency; (4) burglary shouldn't  
require property taken; (5) expand personnel files so they can be accessed  
for specific information; (6) give agencies adequate training and follow-up;  
(7) improve downtime.

24. What is your job classification?

25. Agency:

Thank you for your time.

Please fill out a form for each case cancelled in the following crime categories:  
homicide, rape, robbery, aggravated assault, burglary, grand theft, & motor vehicle theft.

Name of Investigator \_\_\_\_\_ Dept. \_\_\_\_\_

Type of Crime: \_\_\_\_\_ Case No. \_\_\_\_\_

A. Check the inquiries you made to ARJIS related to this case.

Master Operations Index (MOI) Suspect \_\_\_\_\_ Location \_\_\_\_\_

\_\_\_\_\_ Field interview \_\_\_\_\_ Geographic  
\_\_\_\_\_ Property \_\_\_\_\_ Traffic  
\_\_\_\_\_ Crime Case \_\_\_\_\_ Other  
\_\_\_\_\_ Hotsheet \_\_\_\_\_ None (go to Question E)  
\_\_\_\_\_ Personnel

B. Did you request any of this information from ICAP (crime analysis)?

\_\_\_\_\_ Yes \_\_\_\_\_ No

C. Was the information useful?

\_\_\_\_\_ Yes \_\_\_\_\_ No

↓  
In what way? (Check all that apply)

\_\_\_\_\_ Suspect was arrested as a result of ARJIS (indicate number of arrests \_\_\_\_\_)  
\_\_\_\_\_ patrol arrest \_\_\_\_\_ Suspect: resident \_\_\_\_\_  
\_\_\_\_\_ detective arrest \_\_\_\_\_ non-resident \_\_\_\_\_

\_\_\_\_\_ case was closed by exceptional means as a result of ARJIS .

\_\_\_\_\_ suspect was eliminated

\_\_\_\_\_ other cases in a series were cancelled (indicate number \_\_\_\_\_)

\_\_\_\_\_ provided new leads

\_\_\_\_\_ verified previous knowledge about a case

\_\_\_\_\_ provided evidence that strengthened the case

\_\_\_\_\_ property recovered (\$ \_\_\_\_\_)

\_\_\_\_\_ other (specify) \_\_\_\_\_

D. Did you receive information through ARJIS from another law enforcement agency that was useful?

\_\_\_\_\_ Yes \_\_\_\_\_ No

E. What other files/computers did you search?

ARJIS FEEDBACK FORM

Please fill out a form for each case cancelled in the following crime categories:  
homicide, rape, robbery, aggravated assault, burglary, grand theft, & motor vehicle theft.

Name of Investigator \_\_\_\_\_ Dept. \_\_\_\_\_

Type of Crime: \_\_\_\_\_ Case No. \_\_\_\_\_

A. Check the inquiries you made to ARJIS related to this case.

Master Operations Index (MOI)      Suspect \_\_\_\_\_      Location \_\_\_\_\_  
  
\_\_\_\_ Field interview                      \_\_\_\_\_ Geographic  
\_\_\_\_ Property                              \_\_\_\_\_ Traffic  
\_\_\_\_ Crime Case                            \_\_\_\_\_ Other  
\_\_\_\_ Hotsheet                               \_\_\_\_\_ None (go to Question D)  
\_\_\_\_ Personnel

B. Was the information useful?

\_\_\_\_ Yes      \_\_\_\_ No

↓  
In what way? (Check all that apply)

\_\_\_\_ Suspect was arrested as a result of ARJIS (indicate number of arrests \_\_\_\_\_)  
    patrol arrest                      Suspect: resident \_\_\_\_\_  
    detective arrest \_\_\_\_\_                      non-resident \_\_\_\_\_

\_\_\_\_ case was closed by exceptional means as a result of ARJIS

\_\_\_\_ suspect was eliminated

\_\_\_\_ other cases in a series were cancelled (indicate number \_\_\_\_\_)

\_\_\_\_ provided new leads

\_\_\_\_ verified previous knowledge about a case

\_\_\_\_ provided evidence that strengthened the case

\_\_\_\_ property recovered (\$ \_\_\_\_\_)

\_\_\_\_ other (specify) \_\_\_\_\_

C. Did you receive information through ARJIS from another law enforcement agency that was useful?

\_\_\_\_ Yes      \_\_\_\_ No

D. What other files/computers did you search?

APPENDIX F

TABLE 18

ADVANTAGES OF ARJIS BY ASSIGNMENT  
USER SURVEY  
July, 1980

N = 972

|   | Patrol | Traffic | Investigations | All Assignments |
|---|--------|---------|----------------|-----------------|
| 1) Saves time that would have been spent searching files manually   | 77%    | 72%     | 83%            | 77%             |
| 2) Identifies possible suspects                                     | 76%    | 53%     | 69%            | 72%             |
| 3) Provides information not previously available                    | 73%    | 60%     | 70%            | 71%             |
| 4) Provides information that assists in making arrests              | 63%    | 52%     | 65%            | 62%             |
| 5) Increases leads  | 57%    | 49%     | 65%            | 58%             |
| 6) Provides information that assists in recovery of stolen property | 55%    | 39%     | 58%            | 54%             |
| 7) Provides information that assists in closing crime cases         | 46%    | 44%     | 54%            | 48%             |
| 8) Provides evidence that strengthens cases                         | 41%    | 30%     | 41%            | 40%             |
| 9) Other*   | <1%    | 1%      | <1%            | 1%              |
| 10) None  | 3%     | 7%      | 5%             | 4%              |

\*Other advantages include: provision of accomplice information, hit and run information and probable cause.

TABLE 19  
DISADVANTAGES OF ARJIS BY ASSIGNMENT  
USER SURVEY  
July, 1980

N = 926

|   | <u>Patrol</u> | <u>Traffic</u> | <u>Investigations</u> | <u>All Assignments</u> |
|---|---------------|----------------|-----------------------|------------------------|
| 1) Insufficient training in use of terminals              | 69%           | 44%            | 59%                   | 63%                    |
| 2) Difficult to get information while on patrol           | 53%           | 25%            | 11%                   | 40%                    |
| 3) Excessive downtime                                     | 47%           | 28%            | 25%                   | 40%                    |
| 4) Delays in entering data                                | 32%           | 20%            | 35%                   | 31%                    |
| 5) Complicated to query                                   | 20%           | 10%            | 32%                   | 21%                    |
| 6) Terminals are not easily accessible                    | 20%           | 20%            | 14%                   | 19%                    |
| 7) Information not accurate or complete                   | 8%            | 11%            | 17%                   | 11%                    |
| 8) Provides too much information per inquiry to be useful | 2%            | 1%             | 2%                    | 2%                     |
| 9) Does not provide useful information                    | 2%            | 1%             | 2%                    | 2%                     |
| 10) Other*  | 4%            | 1%             | 11%                   | 6%                     |
| 11) None  | 7%            | 15%            | 13%                   | 10%                    |

\*Other disadvantages include: training problems, inquiry problems, lack of accessibility, limited information available, and cost.

TABLE 20

NUMBER OF CASE CLOSURES IN WHICH ARJIS  
PROVIDED USEFUL INFORMATION BY AGENCY  
STUDY OF ACTUAL CASES CLOSED  
July 28 - September 26, 1980

|  | <u>SDPD</u> | <u>Sheriff</u> | <u>Chula Vista</u> | <u>La Mesa</u> | <u>Total</u> |
|--|-------------|----------------|--------------------|----------------|--------------|
| Number of Sample cases                           | 615         | 173            | 40                 | 41             | 869          |
| Number of cases closed in which ARJIS was used   | 118         | 33             | 15                 | 27             | 193          |
| Number of cases closed in which ARJIS was useful | 31          | 8              | 8                  | 13             | 60           |

TABLE 21

NUMBER OF CASE CLOSURES IN WHICH ARJIS  
PROVIDED USEFUL INFORMATION BY CRIME TYPE  
STUDY OF ACTUAL CASES CLOSED  
July 28 - September 26, 1980

|  | <u>Rape</u> | <u>Robbery</u> | <u>Aggravated<br/>Assault</u> | <u>Burglary</u> | <u>Grand<br/>Theft</u> | <u>Auto<br/>Theft</u> | <u>Total</u> |
|--|-------------|----------------|-------------------------------|-----------------|------------------------|-----------------------|--------------|
| Number of<br>sample cases                              | 44          | 103            | 191                           | 254             | 103                    | 174                   | 869          |
| Number of cases<br>closed in which<br>ARJIS was used   | 13          | 22             | 15                            | 100             | 32                     | 8                     | 193          |
| Number of cases<br>closed in which<br>ARJIS was useful | 1           | 7              | 3                             | 33              | 10                     | 3                     | 60           |

TABLE 22

ARJIS COMPONENTS USED  
CASE STUDY OF ACTUAL CASES CLOSED  
July 28 - September 26, 1980

N = 853

| <u>Component</u> | <u># of Cases</u> | <u>% of Cases</u> |
|------------------|-------------------|-------------------|
| Field Interview  | 164               | 19%               |
| MOI - Suspect    | 108               | 13%               |
| MOI - Location   | 7                 | 1%                |
| Property         | 81                | 9%                |
| Traffic          | 57                | 7%                |
| Crime Case       | 26                | 3%                |
| Hotsheet         | 3                 | <1%               |
| Personnel        | 8                 | 1%                |
| Geographic       | 8                 | 1%                |
| Other            | 4                 | <1%               |

**TABLE 23**  
**REPORTED CRIMES, CLEARANCES & CLEARANCE RATE COUNTYWIDE,**  
**SAN DIEGO POLICE AND OTHER AGENCIES**  
**1975 TO 1980**

|                        | 1975    |         | 1976    |         | 1977    |         | 1978    |         | 1979    |         | 1980    |         |
|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                        | Jan-Jun | Jul-Dec | Jan-Jun | Jul-Dec | Jan-Jun | Jul-Dec | Jan-Jun | Jul-Dec | Jan-Jun | Jul-Dec | Jan-Jun | Jul-Dec |
| <u>Reported Crimes</u> |         |         |         |         |         |         |         |         |         |         |         |         |
| Total County           | 51,733  | 51,529  | 54,624  | 53,755  | 55,651  | 56,707  | 56,302  | 58,975  | 60,997  | 63,161  | 62,444  |         |
| SDPD                   | 29,989  | 30,033  | 31,754  | 30,826  | 32,254  | 33,182  | 32,434  | 34,404  | 34,549  | 36,544  | 34,084  |         |
| Other Agencies         | 21,744  | 21,496  | 22,409  | 22,929  | 23,530  | 23,525  | 23,868  | 24,571  | 26,448  | 26,617  | 28,360  |         |
| <u>Clearances</u>      |         |         |         |         |         |         |         |         |         |         |         |         |
| Total County           | 10,630  | 10,501  | 11,141  | 11,673  | 12,310  | 11,491  | 12,141  | 11,586  | 13,148  | 12,315  | 12,004  |         |
| SDPD                   | 5,591   | 5,484   | 5,838   | 6,214   | 6,522   | 5,887   | 5,675   | 5,167   | 7,276   | 6,858   | 6,018   |         |
| Other Agencies         | 5,039   | 5,017   | 6,303   | 5,459   | 5,788   | 5,604   | 6,466   | 6,419   | 5,872   | 5,457   | 5,986   |         |
| <u>Clearance Rate</u>  |         |         |         |         |         |         |         |         |         |         |         |         |
| Total County           | 20.5%   | 20.4%   | 20.4%   | 21.7%   | 22.1%   | 20.3%   | 21.6%   | 19.6%   | 21.6%   | 19.5%   | 19.2%   |         |
| SDPD                   | 18.6    | 18.3    | 18.4    | 20.2    | 20.2    | 17.7    | 17.5    | 15.0    | 21.1    | 18.7    | 17.7%   |         |
| Other Agencies         | 23.2    | 23.3    | 28.1    | 23.8    | 24.6    | 23.8    | 27.1    | 26.0    | 22.2    | 20.5    | 21.1%   |         |

TABLE 24

AUTOMATED REGIONAL JUSTICE INFORMATION SYSTEM  
JOINT POWERS AGENCY

Projected JPA Base Costs and Proposed Member Assessment

| Agency   | Population       | % of<br>Region | FY 82<br>Projected<br>Annual<br>Assessment | FY 81<br>Proposed<br>6 Month<br>Assessment |
|--|------------------|----------------|--|--|
| Carlsbad   | 35,500           | 1.96%          | \$ 10,354                                  | \$ 5,452                                   |
| Chula Vista  | 82,200           | 4.55           | 24,036                                     | 12,657                                     |
| Coronado   | 20,750           | 1.15           | 6,075                                      | 3,199                                      |
| Del Mar  | 5,225            | .29            | 1,532                                      | 807  |
| El Cajon   | 72,100           | 3.99           | 21,077                                     | 11,099                                     |
| Escondido  | 62,500           | 3.46           | 18,278                                     | 9,625                                      |
| Imperial Beach   | 21,100           | 1.17           | 6,181                                      | 3,255                                      |
| La Mesa  | 50,900           | 2.81           | 14,844                                     | 7,817                                      |
| Lemon Grove  | 20,050           | 1.11           | 5,864                                      | 3,088                                      |
| National City  | 46,950           | 2.60           | 13,735                                     | 7,232                                      |
| Oceanside  | 77,800           | 4.30           | 22,715                                     | 11,961                                     |
| San Diego  | 842,200          | 46.58          | 246,062                                    | 129,571                                    |
| San Marcos   | 15,400           | .85            | 4,490                                      | 2,364                                      |
| Vista  | 35,150           | 1.94           | 10,248                                     | 5,396                                      |
| County   | 420,300          | 23.24          | 122,767                                    | 64,647                                     |
| Others:  |                  |                |  |  |
| FBI & U.S. Marshal   |                  |                | 13,684                                     | 5,210                                      |
| TOTAL  | <u>1,808,125</u> | <u>100.0%</u>  | <u>\$541,942</u>                           | <u>\$283,380</u>                           |
| <u>JPA Base Cost Items</u>                                   |                  |                |  |  |
| Board of Directors Expense .....                             |                  |                | \$ 4,000                                   | \$ 2,000                                   |
| Project Manager (including Benefits and Indirect Cost) ..... |                  |                | 56,000                                     | -0-  |
| Data Processing Corporation Personnel .....                  |                  |                | 423,878                                    | 190,080                                    |
| Computer Utilization (for Job Development and Testing) ..... |                  |                | 58,064                                     | 91,300                                     |
| TOTAL  |                  |                | <u>\$541,942</u>                           | <u>\$283,380</u>                           |

TABLE 25

AUTOMATED REGIONAL JUSTICE INFORMATION SYSTEM  
JOINT POWERS AGENCY

Estimated Systems Utilization and Projected Range  
of Computer Costs by User Agency

| Agency                                 | Estimated<br>Percent<br>of Systems<br>Utilization | Projected FY 82 User Cost |                        | Projected<br>FY 81 (6 Mo.) User Cost |                        |
|--|---|---------------------------|------------------------|--------------------------------------|------------------------|
|  |   | Maximum<br>Utilization    | Minimum<br>Utilization | Maximum<br>Utilization               | Minimum<br>Utilization |
| Carlsbad                               | 1%  | \$ 14,743                 | \$ 12,623              | \$ 6,066                             | \$ 4,353               |
| Chula Vista                            | 3   | 44,231                    | 37,869                 | 18,199                               | 13,058                 |
| Coronado                               | 1   | 14,743                    | 12,623                 | 6,066                                | 4,353                  |
| Del Mar                                | n/a   | -0-                       | -0-                    | -0-                                  | -0-                    |
| El Cajon                               | 3   | 44,231                    | 37,869                 | 18,199                               | 13,058                 |
| Escondido                              | 4   | 58,974                    | 50,491                 | 24,265                               | 17,409                 |
| Imperial Beach                         | 1   | 14,743                    | 12,623                 | 6,066                                | 4,353                  |
| La Mesa                                | 3   | 44,231                    | 37,869                 | 18,199                               | 13,058                 |
| Lemon Grove                            | n/a   | -0-                       | -0-                    | -0-                                  | -0-                    |
| National City                          | 3   | 44,231                    | 37,869                 | 18,199                               | 13,058                 |
| Oceanside                              | 4   | 58,974                    | 50,491                 | 24,265                               | 17,409                 |
| San Diego                              | 60  | 884,610                   | 757,373                | 363,970                              | 261,154                |
| San Marcos                             | n/a   | -0-                       | -0-                    | -0-                                  | -0-                    |
| Vista                                  | n/a   | -0-                       | -0-                    | -0-                                  | -0-                    |
| County                                 | 16  | 235,896                   | 201,965                | 97,059                               | 69,640                 |
| Others:                                |   |                           |                        |                                      |                        |
| FBI & U.S. Marshal                     | 1   | 14,743                    | 12,623                 | 6,066                                | 4,353                  |
| <b>TOTAL</b>                           | <b>100%</b>                                       | <b>\$1,474,350</b>        | <b>\$1,262,288</b>     | <b>\$606,619</b>                     | <b>\$435,256</b>       |
| <u>Computer Utilization Cost Items</u> |   |                           |                        |                                      |                        |
| Disk Storage .....                     |   | \$ 100,000                | \$ 100,000             | \$ 50,000                            | \$ 40,000              |
| Batch Processing .....                 |   | 613,218                   | 508,000                | 248,357                              | 176,358                |
| Data Entry/Update .....                |   | 301,195                   | 301,754                | 132,943                              | 113,001                |
| Inquiry .....                          |   | 459,937                   | 352,534                | 175,319                              | 105,897                |
| <b>TOTAL</b>                           |   | <b>\$1,474,350</b>        | <b>\$1,262,288</b>     | <b>\$606,619</b>                     | <b>\$435,256</b>       |



**END**