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UNITED STATES
GENERAL ACCOUNTING OFFICE



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The Program To Develop
Improved Law Enforcement
Equipment Needs To
Be Better Managed

Law Enforcement Assistance Administration
Department of Justice

To achieve an effective and efficient equipment systems improvement program, the Administration should address the following management problems:

- Poor management decisions in starting the program and in not obtaining data to justify later funding decisions for projects.
- Inadequate efforts to disseminate the information gained in the program to would-be users of such equipment or practices.
- Poor administrative practices in authorizing and supervising work performed under contract or interagency agreements.

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UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D.C. 20548

GENERAL GOVERNMENT
DIVISION

B-171019

The Honorable Richard W. Velde
Administrator, Law Enforcement
Assistance Administration
Department of Justice

Dear Mr. Velde:

This report discusses the equipment systems improvement program, which is carried out by LEAA's National Institute for Law Enforcement and Criminal Justice. The report cites management and administrative weaknesses that should be corrected to make the program efficient and effective. We have given LEAA officials an opportunity to review the report and have recognized their comments where applicable. We would appreciate being advised of the actions taken on our recommendations.

We wish to thank your staff for the cooperation received during the audit.

Sincerely yours,

A handwritten signature in cursive script that reads "Daniel F. Stanton".

Daniel F. Stanton
Associate Director

LEAA
LEADLE

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UNITED STATES GENERAL
ACCOUNTING OFFICE REPORT

THE PROGRAM TO DEVELOP
IMPROVED LAW ENFORCEMENT
EQUIPMENT NEEDS TO
BE BETTER MANAGED
Law Enforcement Assistance
Administration
Department of Justice

D I G E S T

Since 1972 the Law Enforcement Assistance Administration has committed over \$21 million to a program to develop new or improved equipment, procedures, and standards to help improve law enforcement and criminal justice activities in the U.S.

The program is carried out by the Administration's National Institute of Law Enforcement and Criminal Justice.

More than \$10 million has been applied to equipment development, with nine projects receiving the bulk of these funds. The projects are:

- Cost-effective security alarm.
- Citizens alarm system.
- Lightweight body armor.
- Speaker identification.
- Cargo security.
- Blood and bloodstain analyses.
- Explosives detection and identification.
- Detection of gunshot residue.
- Police car systems improvement.

These projects appear to have potential for improving criminal justice capabilities. However, program administration needs to be improved to obtain the best results from the projects funded. Because of inadequate management practices:

--Information had not been obtained to determine if projects were funded at proper levels to achieve results economically as soon as possible. (See pp. 5 and 6.)

--The information developed within the program was not being disseminated promptly to potential users. (See ch. 3.)

Some practices needing improvement relate to contract or interagency agreements used. For example:

--Several modifications of an existing interagency agreement have involved work unrelated to that authorized under the initial agreement.

--Administration and Institute officials have requested additional tasks under the development group's contract without notifying the project's monitors.

--Approval of some subcontracts has been considerably delayed, mainly because of Institute questions related to negotiations carried out without an Institute representative present. (See ch. 4.)

GAO is recommending several steps that the Administrator, Law Enforcement Assistance Administration, should consider to

--obtain the best results possible from the program (see p. 7),

--improve its capability to disseminate information developed to potential users more promptly (see p. 12), and

--strengthen administrative practices (see p. 18).

The Administration generally agreed with GAO's recommendations and pointed out certain actions already taken or anticipated that would correct some of the problems noted. (See pp. 7 and 19.)

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CHAPTER 1

INTRODUCTION

2. A major activity of the Law Enforcement Assistance Administration's (LEAA's) National Institute of Law Enforcement and Criminal Justice is the equipment systems improvement program (ESIP). 1/ ESIP's goal is to assist law enforcement and criminal justice activities by developing, demonstrating, and evaluating new or improved procedures and equipment systems. 187
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To achieve this goal, the Institute conceptualized a program with three components--the analysis group, the development group, and the standards group--each with specific tasks to perform.

3. The analysis group was to act mainly as the Institute's contact with users and report their equipment-related problems. It was also to provide operational requirements for equipment being developed and support for field testing and evaluation of the prototype equipment. The analysis group's tasks were awarded to the Mitre Corporation in June 1972 through an interagency agreement with the Air Force. PLS 00320

4. The development group's major tasks were to (1) propose solutions for the equipment problems identified by the analysis group and (2) develop the prototype equipment. In June 1972 the Aerospace Corporation was awarded the tasks of the development group through an interagency agreement with the Air Force. In July 1973 the interagency agreement was discontinued and LEAA contracted directly with the Aerospace Corporation. PLS 01095

The standards group was primarily to (1) develop voluntary standards detailing the performance which equipment should give and the test methods by which the actual performance is to be measured, (2) prepare guidelines in nontechnical language addressed to potential purchasers and users of the equipment, and (3) prepare technically oriented reports based on the group's work.

1/When first established, ESIP was carried out by the Institute's Research Administration Division. Because of restructuring within the Institute in fiscal year 1974, ESIP was transferred to the Advanced Technology Division. Although the division has other activities, this report discusses only ESIP.

5 The work of the standards group was originally performed by a unit in the National Bureau of Standards under an interagency agreement with LEAA. When ESIP was started, the responsibility for funding and monitoring the standards group was transferred to ESIP.

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PROGRAM FUNDING

The Institute was established within LEAA by the Omnibus Crime Control and Safe Streets Act of 1968 (42 U.S.C. 3701) to encourage research and development projects for improving and strengthening law enforcement capabilities. Appropriated funds available to the Institute through fiscal year 1975 totaled \$155.9 million. The following table shows the amount of funds awarded to the three ESIP groups.

<u>Group</u>	<u>Fiscal years</u>				<u>Total</u>
	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	
	----- (000 omitted) -----				
Analysis	\$ -	\$1,175	\$1,326	\$ 235	\$ 2,736
Development	-	1,850	3,200	5,185	10,235
Standards	<u>1,366</u>	<u>2,337</u>	<u>2,286</u>	<u>1,920</u>	<u>7,909</u>
Total	<u>\$1,366</u>	<u>\$5,362</u>	<u>\$6,812</u>	<u>\$7,340</u>	<u>\$20,880</u>

In addition to the funding awarded to the three groups, the Institute has awarded approximately \$1 million to another Federal agency for support work for the lightweight body armor project.

SCOPE OF REVIEW

Our review focused on the efficiency and effectiveness of the Institute's management of ESIP. We interviewed appropriate officials and reviewed documentation available in the LEAA offices in Washington, D.C., and in the offices of the three organizations involved in the program.

CHAPTER 2

MANAGEMENT IMPROVEMENTS NEEDED IN ESIP

Management decisions made in initiating ESIP prevented the concept of using three groups from becoming a viable reality. In practice, the analysis group was not effectively used since the Institute neither waited for its input before starting research projects nor initiated research in the areas it identified.

In addition, the Institute made funding decisions without determining what could be accomplished in each project at various funding levels to insure that the funds were used as effectively as possible. The following sections describe major problems that hindered ESIP's effectiveness.

IMPROPER TIMING REDUCED
NEED FOR ANALYSIS GROUP

The analysis group should have had effectively functioning field sites for a long enough period to identify major problems before the Institute selected research projects. As ESIP was conceptualized, the analysis group's work would insure that the Institute's research efforts focused on the problems having the highest priority to the criminal justice community.

However, the Institute failed to wait for the analysis group to complete its initial task. Instead, it authorized funding for both the analysis and development groups in June 1972 and approved the development group's initial research projects before the analysis group had any field sites functioning. Thus, Institute management virtually eliminated the need for the analysis group to identify problems at the beginning of the program. Institute officials said that when ESIP was started they expected a substantial future increase in program funding and, as a result, anticipated that sufficient funds would be available to develop projects identified by the analysis group. However, this substantial funding increase did not occur. (Although the standards lab was also funded at the beginning of ESIP, its work is based on existing equipment and, as such, its early start was not a deterrent to ESIP's functioning as planned.)

As previously noted, the analysis group was to be the principal contact between the Institute and users and was to identify equipment problems users experienced. Field

sites were to be established at law enforcement and criminal justice agencies. The agencies selected were to be representative of all such agencies in the United States so that their problems would be generally representative of the Nation as a whole. In early 1973 the Institute gave the analysis group the additional responsibility to evaluate selected areas of crime, criminal justice operations, and existing equipment.

The analysis group established and staffed eight field sites between October 1972 and August 1973. Of the eight sites, six were in police departments, one in a court activity, and one in a corrections facility. Six were staffed by two-person teams and two with one person each.

The Institute received the analysis group's first preliminary reports (problem statements) in June 1973. By December 1973 the group had submitted about 120 reports, which generally cited problems noted by the field sites. Although under the ESIP concept these reports were to identify significant problems, none of the problems identified were selected for research efforts. Apparently the Institute did not consider that the areas the analysis group identified had higher priority than the areas authorized for the development group's research and development.

Research and development requires considerable effort. It consists of four or five stages, namely:

- Problem assessment.
- Identification and evaluation of potential solutions.
- Prototype feasibility assessment.
- Hardware development.
- Field testing and evaluation, if needed.

This process can require funding for several years. The ability to start new projects is dependent on either (1) revising the present plan to use funds available through completion, cancellation, or reduction in the proposed level of effort of specific projects or (2) increasing the total amount of funds available to the program.

In its first year of funding, the development group started 10 research projects and allocated all available funds to carry out the initial research. The development group's plan for fiscal year 1974 as approved by the Institute continued five of the original projects and

started research in three new areas. The three new areas had not been identified in the analysis group's preliminary reports to the Institute before the approval of the development group's 1974 plan.

In a November 1973 memorandum, the cognizant director of research programs within the Institute stated:

"* * * In terms of output up to now, and the utility of any future potential output of the Analysis Group in the total ESIP context, that expenditure of manpower (approximately 38 persons), and the attendant \$2M of our funds which supports it, is categorically indefensible. The plain truth * * * is that with our present philosophical constraints as to the Institute's percentage equipment outlay, the Analysis Group cannot ever work effectively or efficiently. * * * the major portion of both the Mitre field site operation and its Washington support staff can be transferred from ESIP without affecting the efficiency of ESIP in any major respect. We recommend that action."

The Institute implemented this recommendation in December 1973, informing the analysis group that its initial task was being eliminated from ESIP. By April 1974 the field sites had either been closed or transferred to other Institute programs. However, funds were awarded in fiscal year 1975 to permit the group to finish ongoing ESIP activities. In our opinion, the ineffectiveness of the analysis group resulted from the Institute's funding the analysis and development groups simultaneously.

NEED TO OPTIMIZE RESULTS ACHIEVED

Researching and developing new or improved equipment can require several years. Since the selected areas supposedly represent national priority needs, the Institute should be striving to finalize its work in these areas as soon as possible. However, the Institute has not requested the development group to estimate completion dates of the various projects under different funding levels within the group's budget constraints.

As of March 1975 nine major research efforts were underway, as noted in the following table. Appendix I briefly describes each project.

<u>Projects</u>	<u>Fiscal year started</u>
Cost-effective security alarm	1973
Citizens alarm system	1973
Lightweight body armor	1973
Speaker identification	1973
Cargo security	1973
Blood and bloodstain analyses	1974
Explosives detection and identification	1974
Detection of gunshot residue	1974
Police car systems improvement	1975

The five projects started in fiscal year 1973 are still ongoing. As of March 1975, the development group estimated that it would complete work on these projects in fiscal years 1977 or 1978. Funding levels for the individual projects (excluding field-testing funding) have ranged from \$60,000 to \$500,000 annually, averaging about \$262,000.

Information from Institute and development group officials indicates that, for some projects, existing technology would permit research work to be done faster if funding were available. If the funding level is not adequate to permit the more concentrated effort, more time is required to complete the project.

We believe that the Institute should try to apply ESIP funds to achieve the quickest possible results. If some projects could be completed faster with increased funding, the Institute should consider this in justifying the level of funding ultimately approved. If funds available to ESIP can only maintain minimal levels of effort, the Institute should consider deferring lower priority projects to accelerate the completion of more important ones.

CONCLUSIONS

An early management decision to fund the development and the analysis groups simultaneously virtually eliminated any impact that the analysis group might have on the

program's direction. Management recognized this fact about 18 months later and dropped the analysis group from the program.

Other management weaknesses in ESIP have not been corrected. The Institute has not requested the development group to determine how long it would take to develop the various projects at various funding levels within its funding limitation. Without such information, the Institute cannot ascertain whether individual projects could be completed faster if higher funding were authorized. Institute management should have this information to evaluate the wisdom of stopping some ongoing projects or deferring the start of new projects to permit an earlier completion of vital projects.

RECOMMENDATIONS

We recommend that the Administrator, LEAA, optimize, within the current funding level, the efforts of the equipment development activities by

- obtaining data from the development group contractor indicating the time required for completing projects at various funding levels within the group's budget constraints and
- considering selecting fewer development projects if a higher level of funding would accelerate development of equipment needed by the criminal justice community.

AGENCY COMMENTS

During a November 11, 1975, meeting, LEAA officials generally agreed with these recommendations. They said they had discussed funding projects at different levels for their fiscal year 1976 program, although such discussions were not documented. They indicated that during a March 1975 discussion the decision was made to use 1976 funds tentatively scheduled for the gunshot residue project to instead accelerate the development of the low-cost burglar alarm system. The gunshot residue project will continue in fiscal year 1976, using funds carried over from its fiscal 1975 budget.

According to the officials, if considered desirable, such discussions could in the future be documented and thus be available for review. We believe that it is very desirable to document such data and discussions to permit the agency to compare the accomplishments to the projections

throughout the year. Only when such documentation is available can it be determined if accurate and comprehensive data was used in setting priorities (for example, deciding that (1) the low-cost burglar alarm system had higher priority than gunshot residue or (2) gunshot residue had lower priority than extensive field testing of lightweight body armor, the early development of an improved police car, or any other projects already underway.)

CHAPTER 3

NEED FOR EARLIER DISSEMINATION OF INFORMATION

Information developed under ESIP should be disseminated as soon as possible. Keeping the information on the state-of-the-art of law enforcement equipment development as current as possible is important to help would-be purchasers of such equipment and researchers in the same field. At least two factors prevented timely publication of information developed under ESIP.

LACK OF PERSONNEL

Material containing information for dissemination must undergo a time-consuming process of technical review and rewriting to insure that it is factually correct and understandable to intended readers. To achieve timely publication, the staff level must be sufficient to permit a smooth workflow. We were informed that the dissemination of ESIP material had been delayed because of a lack of personnel.

Standards group

The standards group's final task is to submit a proposed publication to the Institute for approval, publication, and dissemination. The group requires an average of 10 to 12 months to prepare a proposed publication, primarily because of its established procedures for internal and external reviews. However, according to standards group officials, some delay has been caused by a lack of a writer/editor to help the assigned staff with the writing and rewriting resulting from such reviews.

A standards group official indicated that he had tried for over a year to obtain the authority to hire a writer/editor because his group could not fully meet its commitments to LEAA on a timely basis with the existing staff. The ESIP project monitor for the standards group agreed that another staff member was needed, but the Institute had taken no formal action to support the group's request.

A standards group official indicated that the number of projects started in the future for the Institute would be reduced to permit the existing staff to effectively handle the workload. However, after our field work we were advised that a writer/editor had been temporarily assigned to the standards group to expedite report processing.

3. DOCUMENT AVAILABLE

Institute

The Institute must review and approve all documents developed under the ESIP program before publication. The publication of some material has been hindered by a lack of timely processing within the Institute. The ESIP director has stated that the ESIP staff was too small to effectively handle the monitoring workload and the processing of material for publication. As a result, the latter had not received adequate attention. The staff was generally made up of three professional people sharing responsibility for monitoring ESIP.

According to Institute policy, when a document is submitted for possible publication, it must first be reviewed by the project monitor to determine whether it is significant enough to publish, and if so, it must be reviewed by a person knowledgeable in the subject area. This second, detailed review can be performed by either other in-house or non-LEAA personnel.

Most documents delayed by the Institute's review process were prepared by the analysis group. In fiscal year 1974 that group submitted 20 documents to the Institute. According to the Institute's project monitor, although he considered many of the documents worthy of publication, his workload had prevented him from reviewing these documents or sending them out for review by persons knowledgeable in the subject area.

In June 1975 we were informed that a decision had been made not to publish these reports. Instead, the 20 documents received from the analysis group, along with a few reports from the development group or its subcontractors received during fiscal year 1974, are to be sent to LEAA's National Criminal Justice Reference Service in the format in which they were submitted to the Institute. These reports will be listed by the reference service and will be loaned on request.

Documents developed on ESIP work and submitted to the Institute during fiscal year 1975 will not be sent to the reference service unreviewed. The Institute has placed a temporary staff person in the ESIP area to process the reports that the project monitors consider of sufficient merit to be reviewed for publication. Because of the short time that the temporary employee has been available, we did not review the impact that that employee has had on report processing. However, LEAA officials stated that the report backlog has been reduced.

NEED TO USE FASTER METHODS
TO MEET CURRENT NEEDS

ESIP has funded research in the lightweight body armor area since fiscal year 1973. We discussed the body armor effort in a September 1974 letter to the LEAA Administrator and in subsequent meetings with Institute officials, citing the need for LEAA to quickly disseminate to potential users the information obtained from laboratory testing. As of March 1975 the standards group estimated that it would submit a guideline on body armor to the Institute in December 1975. Based on past experience, it will require approximately 10 months to get the document published after the Institute receives the guidelines.

At least five large police departments have shown interest in purchasing lightweight body armor without waiting for the Institute's field test to be completed. These police departments should have the Institute's information on testing methods used, the various areas to evaluate when testing the different garments offered on the market, and the results achieved with various material tested under ESIP.

Without this information, police departments desiring to evaluate available garments may use poor, even inappropriate, testing methods. For example, according to an ESIP official, one police department had used a metal backing when testing whether the garment would be penetrated by different caliber bullets. In the ESIP testing, gelatine backing and clay backing were used, although both were considered to have deficiencies.

Using a metal backing would make it more difficult to determine the amount of impact the body would absorb behind the armor at the point of impact (blunt trauma). This measurement is considered a key element in testing body armor. Testing performed for ESIP has indicated that, even though an armor might not be penetrated by certain types of bullets, the blunt trauma effect could be unacceptable. Rather than develop a way to expedite release of the information, the Institute chose to use the guideline as its method for wide dissemination even though the guideline normally requires considerable time to prepare and publish.

The Institute should have used a method to circulate the body armor information that would have reached potential users much sooner. Such methods as technical magazines or distribution of information to all State planning agencies for further dissemination to police departments should have been considered.

After our field work, the Institute awarded a grant to the International Association of Chiefs of Police for, among other things, a National Law Enforcement Equipment Information Center, which is to focus on the speedy dissemination of information on law enforcement products and equipment. The center is to publish a series of quarterly summaries, monthly bulletins, caution notices, and equipment directories written in nontechnical language. The material presented is to offer the criminal justice community pertinent, consumer-related information.

CONCLUSIONS

At the time of our review, the Institute was not adequately disseminating the results of its ESIP activities to potential users. However, it has since taken some actions that should cause its program results to reach potential users faster.

Criminal justice agencies will not receive the full benefit of ESIP's work until project results are disseminated. Because of this, we believe that the Institute should review the results achieved with its increased staffing of ESIP programs and the new methods used for disseminating information on its program results to insure that the changes have caused its research information to be disseminated in a timely manner.

RECOMMENDATIONS

We recommend that the Administrator, LEAA, review:

- The workload of the standards group in relation to staff capacity and either obtain an increase in staff or reduce the workload to minimize report preparation delays.
- The capability of the Institute's ESIP staff to perform timely reviews of material resulting from ESIP activities when the publication of such information would be useful to the criminal justice community.
- The results achieved with its in-house and contracted-for dissemination methods to insure that the basic information on project results is available to potential users as soon as possible.

CHAPTER 4

NEED TO IMPROVE CONTRACT AND OTHER

ADMINISTRATIVE PRACTICES

During our review of ESIP, we noted several LEAA practices that weakened program administration. We did not expand the scope of our review to determine if the practices were general throughout LEAA or were applicable to ESIP only. But regardless of how limited the following practices may have been, proper contract and other administrative practices should be followed to prevent any reoccurrences.

QUESTIONABLE USE OF EXISTING
INTERAGENCY AGREEMENT

The interagency agreement for the services of the analysis group was modified to include several unrelated tasks in addition to work performed for ESII. Failure to obtain competitive bids whenever possible may have weakened the Government's ability to obtain the best product at the lowest possible price.

The Institute modified the original agreement with the analysis group's parent organization (Mitre Corporation) by adding four unrelated tasks. These modifications increased the amount of the agreement by \$1,668,000. LEAA also assigned to Mitre another unrelated task amounting to about \$689,000 without modifying the interagency agreement. Briefly, the five new tasks and the funds involved were:

Forensic laboratory project	\$655,000
Provide administrative, technical, and logistical support for supplemental training of criminal justice personnel for the Office of Technology Transfer	396,000
Land vehicle locator and tracking system	300,000
Drug intercept program	317,000
Law enforcement science advisor program for the Office of Technology Transfer	689,000

We did not determine if Mitre was the only firm qualified to handle these tasks (as needed to justify sole-source procurement) or if the need for immediate

work was so great that the Institute was justified in foregoing the time-consuming competitive process. We did note that after the agreement was modified Mitre had to hire a person to manage the forensic assignment.

In April 1974 LEAA established a Non-Competitive Source Selection Review Board. This board was to review proposals for sole-source or noncompetitive procurement that exceeded \$10,000. Most of the previously cited modifications were made before this board was established. We have not attempted to evaluate the board's effectiveness in reducing undesirable contractual methods.

The poor practice of using existing agreements to obtain unrelated services was compounded in one instance when lack of communication between Institute staff and LEAA contracting personnel permitted ESIP funds to be applied to a non-ESIP activity that had not even been incorporated into a formal agreement. In fiscal year 1974 the Office of Technology Transfer, another group within the Institute, selected Mitre to conduct the Law Enforcement Science Advisor Program. This program basically located personnel in selected criminal justice agencies, including some sites formerly used for ESIP, to transfer technology from LEAA to local agencies.

Mitre did the work for the Office of Technology Transfer and received about \$689,000 of ESIP funds even though the work was not covered by a formal agreement. The interagency agreement was never modified to reflect the change in the scope of the work performed. About 6 months after the work was initiated, the interagency agreement was modified, transferring the costs (but not describing the work that was performed) to the Office of Technology Transfer. Good contract administration would require that, before new tasks are performed, the activity be authorized under a new or existing agreement with the contractor which properly identifies the Institute program to be charged.

DEVELOPMENT GROUP'S CONTRACT DID
NOT INCORPORATE AN LEAA DIRECTIVE

LEAA policy prohibits paying consultants at a rate higher than \$135 a day without prior approval from the LEAA Administrator. In a limited review of the development group's financial reports, we noted that the contractor had on 11 occasions hired consultants at a rate higher than \$135 a day without receiving LEAA's approval.

According to development group officials, their contract with LEAA did not require them to receive such approval before hiring a consultant at a rate higher than \$135 per day. They were paying the amount they considered reasonable, as allowed by the Federal Procurement Regulations.

LEAA contract personnel acknowledged that the contract with the development group did not require advance approval for the high consultant fees. They added, however, that the matter had been discussed during contract negotiations and that, therefore, the development group should have requested advance approval for such payments.

To rectify this situation and provide better assurance that this LEAA policy is properly followed, we recommended to the LEAA Administrator in a January 8, 1975, letter that LEAA take appropriate steps to implement the established policy governing the limitations on consultants' fee payments under this contract.

In response to our letter, the Administrator indicated that the contractor will be required to conform to the agency's policy in the future. In addition, the contractor was requested to submit justification for paying the consultants at the higher rate. The cost for those consultants paid more than \$135--approximately \$23,000--will not be allowable under the contract unless the contractor can show that this cost is justified.

In March 1975 the contractor submitted a justification which we rejected by the ESIP director as insufficient. Followup on this matter in June 1975 showed that the development group had not submitted an additional justification.

NEED TO KEEP PROJECT MONITORS INFORMED

Certain ESIP staff members have been designated as project monitors over all or part of one of the ESIP groups. The monitors should be the major contact between the groups and the Institute.

However, the ability of the development group monitor to handle his job properly was adversely affected by his not being advised of all agency requests to his group. LEAA and Institute officials have requested the development group to perform tasks without simultaneously informing the project's monitor. Such tasks have included doing work at the Institute itself, analyzing the results achieved by other laboratories, and accompanying an LEAA official to discuss a project related to ESIP. Although each task has generally required little effort, the practice of assigning

tasks without notifying project monitors reduces their ability to adequately oversee the contract. It has caused confusion and delay in verifying the validity of the development group's financial reports.

The development group is to inform the ESIP monitor when it has been requested to perform a task by an LEAA official outside of ESIP. According to a development group official, the director of ESIP is generally informed within a month after the group has received such a request.

We believe that this practice should be revised to permit the project monitor to adequately perform his responsibility. Proper procedures should call for (1) the assignment of all new tasks to be in writing and (2) all new tasks within the scope of the contract to be processed through the project monitor.

DELAYS EXPERIENCED IN APPROVING SUBCONTRACTS

The development group uses subcontractors to perform much of the development work for new or improved equipment. The Institute's reviews of proposed subcontracts have delayed the awarding of at least three subcontracts for more than 2 months. Since the development group usually has a person assigned to monitor the subcontract and the subcontractor is in a position to begin the work requested, the delay may result in assigning such persons to unrelated or low-priority jobs until the work is authorized.

The present procedure calls for the development group to draft a statement of work relating to the activity to be subcontracted. This statement is then submitted to an ESIP monitor for review. After the ESIP monitor approves the statement of work for the scheduled subcontract, the development group sends out requests for proposals, rates the bidders, and selects one based on price and capability. The group then negotiates a subcontract with the selected bidder. Before the group can award the subcontract as negotiated, the final version (which could have a modified statement of work) must be approved by LEAA (i.e., ESIP monitors and LEAA's contract organization).

Of 12 subcontracts we looked at, 9 had been approved by LEAA within 2 months. The approval for the remaining 3 subcontracts was delayed for from 2 months to more than 4 months because of questions LEAA raised. These questions could relate to the revisions to the statement of work. Since no LEAA official is present when the subcontract is negotiated, ESIP personnel usually question any negotiated

change in the statement of work originally approved in the request for proposals package.

ESIP personnel can spend considerable time discussing these changes with development group officials to satisfy themselves that all changes are acceptable. For example, the negotiated subcontract for the manufacture of the body armor was submitted by the development group in October 1974, but because the Institute determined that some negotiated modifications to the statement of work were unacceptable, the subcontract was reopened for bid and not approved until May 19, 1975.

According to an ESIP monitor, such a change in scope can come about because the area is technically complex or because the proposed task costs more than the amount budgeted for it by the development group. If cost is the problem, ESIP personnel may wish to either reduce the scope of work to fit the budgeted amount or reduce other work planned by the development group and apply the extra funds to the subcontract to achieve the original scope of work. If ESIP personnel were present during the subcontract negotiations, such questions could be resolved quickly.

Any delay in approving the subcontract not only delays the project but also usually costs the Government money because the development personnel assigned to the area cannot proceed with their work as planned although they will probably remain on the development group's payroll. The delay also causes the ESIP technical monitors to spend a considerable amount of time on procurement-related matters, thus possibly detracting from their technical monitoring of other activities under the contract.

Because of delays being experienced at LEAA in approving some subcontracts negotiated by the development group, LEAA should consider having a representative (contract officer or ESIP monitor) present at negotiations of major subcontracts.

FUNDS OBLIGATED BEYOND FISCAL YEAR NEEDS

Under LEAA's interagency agreement for the standards group, the annual LEAA allocation of funds to the group has been based on total estimated funding of some projects rather than on annual needs. Because of the procedures involved in developing standards and guidelines, most of the projects take longer than a year to complete. As a result, sizeable amounts of funds have been carried over from year to year. The carryover amounted to about

\$490,000 from fiscal year 1973 to fiscal year 1974 and about \$660,000 from fiscal year 1974 to fiscal year 1975.

The standards group, a part of the National Bureau of Standards, submits a work plan to ESIP showing the projects it proposes to start for ESIP during the coming fiscal year. The group's 1973 and 1974 plans show for some projects the estimated cost of the entire project, some of which required up to 2 years to complete. LEAA authorized funding the total projected cost of the projects from its current no-year funds.

Since the standards group is following procedures established by the National Bureau of Standards in performing its work for ESIP, the length of time to complete an ESIP project can probably be realistically estimated. The first 26 projects the group completed for ESIP took an average of 26 months to complete.

Although the Institute's funds are no-year appropriations, we believe funds LEAA allocates for the standards group should be based on the estimated needs for a fiscal year.

CONCLUSION

We believe the aforementioned weaknesses indicate that efforts are needed to strengthen the contract and administrative practices associated with ESIP.

RECOMMENDATIONS

We recommend that the Administrator, LEAA, improve internal practices as follows.

- Improve and enforce procedures to (1) require existing contracts and interagency agreements to be modified before services are performed and (2) insure that the project monitor is notified when an additional task is to be assigned under the current contract.
- Fund projects on the basis of annual requirements to avoid large carryovers of funds.
- Consider designating an appropriate official to attend the development contractor's negotiation with potential subcontractors to minimize delays.

AGENCY COMMENTS

LEAA officials agree that contractual modifications should be completed before services are performed and indicated that they will take steps to insure that this procedure is followed in the future.

LEAA officials also agreed that fiscal needs should be expressed in terms of those moneys that can be realistically obligated within a fiscal year. They stated that the internal practice we cited--the full funding of a project requiring more than one fiscal year to complete--is no longer followed. Projects will be funded only for costs anticipated during the funding year.

The officials also indicated that they would review their procedures relating to processing subcontracts with a view toward accelerating the process. They will seriously consider having an LEAA representative attend negotiation sessions involving major subcontracts.

DESCRIPTION OF MAJOR PROJECTS

A brief discussion of the nine ongoing development projects follows.

COST-EFFECTIVE SECURITY ALARM

This project was based on the apparent need for a low-cost, reliable burglar alarm system.

Installing the special wiring needed for transmission is a major element in the cost of traditional alarm systems. The system being developed under this program will use normal household wiring to transmit the alarm, thus lowering the cost considerably. The system is also designed to minimize the technical and human factors that lead to false alarms. The number of false alarms being transmitted by present systems detract from their effectiveness.

Formal field testing and evaluation are planned to start in late fiscal year 1977.

CITIZENS ALARM SYSTEM

This project was based on the concern over crimes involving personal attack (such as rape, robbery, murder, and assault). A miniaturized personal alarm was developed to be worn inconspicuously as a watch or pendant. When activated, it should emit a silent alarm, signaling police or security personnel that the wearer needs help. The transmitter should automatically identify the individual and pinpoint his location. Although the present system was designed for use within a very limited area, work has almost been completed to expand its range.

In late fiscal year 1976, the field demonstration is expected to begin to evaluate the equipment and assess both police and public response to it.

LIGHTWEIGHT BODY ARMOR

This program was initiated to develop flexible protective garments for public officials and law enforcement officers. The garments developed in the project are designed to stop handguns of 38 caliber and below.

SPEAKER IDENTIFICATION

This project was to develop equipment and techniques to identify an individual from his recorded voice and speech

in an objective, quantitative, and scientifically acceptable manner. The court acceptance of evidence based on current voice spectrogram equipment depends mainly upon the skill of the examiner interpreting the results.

A prototype semi-automatic speaker identification system is tentatively scheduled to be tested in a crime laboratory and formally field tested during fiscal year 1976.

CARGO SECURITY

The initial task under this project was development of a truck anti-hijacking system capable of detecting a hijacking and providing vehicle identification and location to a monitoring authority. During fiscal year 1974 the project was broadened to include the capability to detect all categories of vehicle-related cargo theft, including theft of parked cargo trailers.

Pilot field testing and evaluation are planned to start in late fiscal year 1976.

BLOOD AND BLOODSTAIN ANALYSES

In fiscal year 1974 the Institute authorized the development group to start a program to improve blood analysis methodology to insure its greater use in law enforcement. One program objective is the development of reliable, easy-to-use analysis procedures and equipment suitable for crime laboratory use.

Since human blood is a clue often found at the scene of the crime, relating the blood sample to an individual would be a valuable means of identification. In spite of this potential for individualization, a fully practical application of blood analysis to law enforcement has yet to be developed in the United States.

EXPLOSIVES DETECTION AND IDENTIFICATION

This project, a joint effort of LEAA and the Department of the Treasury, was started during fiscal year 1974 because of the increasing numbers of bomb threats and actual bombings. At that time the project initiated the following three efforts:

- *-Determining the feasibility of detecting explosives by sulfur hexafluoride vapors emanating from a "tag" of this compound added to the explosive during its manufacture.

APPENDIX I

APPENDIX I

--Investigating explosive taggants as a means of identifying the manufacturer of the explosive after detonation.

--Developing the capability for detecting explosives to which no taggant has been added.

DETECTION OF GUNSHOT RESIDUE

This project was initiated during fiscal year 1974 to develop fast, reliable, and inexpensive techniques and equipment for use by crime laboratories to detect gunshot residue on suspects' hands and around bullet wounds. Neutron activation analysis, the only currently acceptable method of detecting gunshot residue, is not widely used because sending samples to one of the few laboratories capable of providing this service is inconvenient.

POLICE CAR SYSTEMS IMPROVEMENT

This project was initiated in fiscal year 1975 basically to improve police vehicles. Items to be considered for adaptation to police vehicles include micro-computers, slow-scan video, in-car printer, and recorder. Ways to improve vehicle safety, fuel economy, and utility will also be considered.

PRINCIPAL LEAA OFFICIALS
RESPONSIBLE FOR ADMINISTERING ACTIVITIES
DISCUSSED IN THIS REPORT

	<u>Tenure of office</u>	
	<u>From</u>	<u>To</u>
ADMINISTRATOR, LAW ENFORCEMENT ASSISTANCE ADMINISTRATION:		
Richard W. Velde	Sept. 1974	Present
Donald E. Santarelli	Apr. 1973	Aug. 1974
Jerris Leonard	May 1971	Mar. 1973
Vacant	June 1970	May 1971
Charles H. Rogovin	Mar. 1969	June 1970
DIRECTOR, NATIONAL INSTITUTE OF LAW ENFORCEMENT AND CRIMINAL JUSTICE:		
Gerald M. Caplan	Oct. 1973	Present
Harry A. Scarr (acting)	July 1973	Oct. 1973
Martin B. Danziger	Feb. 1972	July 1973
Martin B. Danziger (acting)	Aug. 1971	Feb. 1972
Irving L. Slott (acting)	May 1970	Aug. 1971
Henry S. Ruth	July 1969	May 1970
Robert Emerich (acting)	Mar. 1969	July 1969
Ralph Siu	Oct. 1968	Mar. 1969