**UNITED STATES GENERAL ACCOUNTING OFFICE**
WASHINGTON, D.C. 20548

PROCUREMENT, LOGISTICS,
AND READINESS DIVISION

B-209637

NOVEMBER 10, 1982

The Honorable Caspar W. Weinberger
The Secretary of Defense

    Attention:  Director, GAO Affairs

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Dear Mr. Secretary:

    Subject: Logistics Support Analysis:  Progress Has Been
             Made but More Emphasis Is Needed (GAO/PLRD-83-10)

    We reviewed Department of Defense (DOD) efforts to improve
implementation of the Logistics Support Analysis (LSA) process
used in acquiring military weapon systems.  The importance of LSA
to successful integrated logistics support (ILS) planning has been
recognized during the past 10 years in DOD policies and regula-
tions.  As a result, DOD and the services have placed increased
emphasis on implementing the LSA process and have instituted a
number of actions to improve the use of the concept.  However, we
identified the following areas where further improvements could
be made.

    --Actions to correct problems, such as eliminating duplicate
      data requirements in contracts and establishing data report-
      ing systems, have progressed slowly.

    --The development and presentation of LSA training courses
      have been delayed and limited.

    --Technical support groups formed to help program offices
      apply LSA have been generally understaffed and their use
      is not mandatory.

    --LSA funding continues to be a low priority.

Because of insufficient management attention in these areas,
opportunities to reduce support costs are being missed.

    Our objective was to identify problems that impede implemen-
tation of the LSA process during weapon system acquisition.  We
examined DOD's policy guidance and the military services' imple-
menting regulations and procedures.  We interviewed DOD, Army,

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Navy, and Air Force officials at the headquarters level and at selected field activities. These officials were responsible for developing LSA policies and procedures, implementing the process on specific material acquisition programs, and developing training programs. We also interviewed several industry representatives to obtain their views on the LSA process. Additionally, we reviewed specific documents, studies, and records which addressed program implementation. Our review was made in accordance with generally accepted Government audit standards.

## LSA--AN INTEGRAL PART
## OF ILS PLANNING

DOD Directive 5000.39 provides overall policy guidance for accomplishing ILS planning and states that LSA is a key element. Military Standard 1388, "Logistic Support Analysis," provides specific guidance for accomplishing the LSA process. Each service also has regulations, pamphlets, and handbooks on implementing the LSA process.

As a critical part of ILS planning, the objective of the LSA process is to obtain reliable, maintainable, transportable, and supportable material at the least cost by integrating logistics support considerations into the design effort. LSA is a systematic, comprehensive analysis conducted on a recurring basis on weapon systems the services are acquiring.

The focus of LSA changes as a weapon system moves through the acquisition cycle. During the conceptual phase, LSA assists the services in analyzing comparable existing systems and identifying potential logistics problems in the new system so these problems can be minimized during the design. This involves making historical data reviews, trade-off analyses, design projections, and other analyses. In the next phase (demonstration and validation), which is when prototypes are being developed, LSA focuses on identifying alternative equipment designs that will reduce the logistics burden and the overall life-cycle costs. In the later stages, after the design has been completed, LSA determines logistics support requirements, such as spare parts, personnel and training needs, and technical publications. These requirements are accumulated in a computerized data base known as the LSA Record.

The scope of an LSA program varies according to program complexity. For example, a developmental item will require an extensive program with emphasis on designed-in-supportability while a nondevelopmental item will require a less extensive program with emphasis on identifying logistics requirements.

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## ACTIONS INITIATED TO
## IMPROVE THE LSA PROCESS

GAO and military service review groups have been critical of the LSA process since 1976 and have identified problems with its implementation. LSA policy guidance was consistently identified as a weak area, that is, regulations did not require application of LSA on all weapon systems and Military Standard 1388 was not specific enough for contractual purposes.

In response, DOD and the services took actions to improve the process. Since 1978 ad hoc groups in the services have been working to correct LSA problems. Also, in 1978, the services began revising Military Standard 1388 to reflect the specific guidance needed to properly apply LSA. In 1980 DOD Directive 5000.39 made a documented LSA program, performed in accordance with Military Standard 1388, a required part of all ILS planning programs. In addition, in 1980, DOD established an LSA steering group, composed of service and industry representatives, to provide guidance and direction for LSA implementation.

## SOME AREAS NEED
## FURTHER ATTENTION

The LSA steering group has been working in areas that include eliminating duplicate data requirements in contracts and developing a standard computer program for LSA data. However, progress in these areas has been slow. Other areas needing attention include training, technical support groups, and funding.

### Duplicate data

To prevent the Government from paying twice for the same information, the LSA steering group organized an ad hoc working group to review and recommend ways to eliminate duplicate data item description requirements in contracts. This effort has moved slowly. Although the working group has started to review some of the data item descriptions, its work has not yet resulted in the elimination of any duplicate data requirements. A group member estimates that it will take about 10 years to complete the entire project.

The lengthy time period was attributed to the complexity of the task and the shortage of staff to accomplish it. For example, while the Air Force has assigned several people to work on the project, the Army and Navy have each provided only one person on a part-time basis.

Although DOD officials believed the problem of duplicate data requirements in contracts was significant, they said that no estimates of the problem's magnitude had been made. Much of the

information on duplicate data requirements can be obtained through the LSA Record. For example, in July 1982, the Air Force issued a report on its review of LSA Record interface with supply support (initial provisioning) for data items in the Army, Navy, and Air Force. In 12 of 21 items, duplicate data requirements existed. In 10 of the 12 items, 96 percent or more of the information was obtainable in the LSA Record as well as required by various military standards and regulations. No estimate of increased cost was listed.

Furthermore, the Director of the Navy's Logistics Review Group said the same is true in the Navy and cited the LAMPS helicopter and F-18 aircraft as examples where duplicate data requirements exist. However, he was unable to estimate the dollar amount of duplication on these two programs.

## Data reporting systems

The services have been slow in developing data reporting systems that will provide weapon system developers the information necessary to do LSA during the early phases of system acquisition.

DOD Directive 5000.39 requires each service to maintain reporting systems and data bases for maintenance, supply, readiness, and utilization information as well as for system acquisition, operation, and support cost information. In a 1981 report we cited difficulties in obtaining this type information as a factor contributing to poor weapon system design. However, little progress has been made since then to develop these systems.

The Army's data reporting system, the "Standard Army Maintenance System," is not scheduled to be completed until 1985. The Air Force does not have a completion date for its "Product Performance Feedback System." Furthermore, in a February 1982 memorandum, the director of the Air Force's technical support group stated that the group has no time to assist and train the personnel working on the system. The Navy believes its existing data systems are sufficient and therefore does not plan to develop a centralized data reporting system.

## LSA training could be improved

While some training is available on the LSA process, DOD and the services recognize that more training is needed, particularly in the area of LSA application during weapon system design. DOD and service officials said that the ineffective and inconsistent use of the LSA process can often be attributed to the lack of qualified personnel to develop and administer LSA programs.

The Director of the Navy's Logistics Review Group said that the Navy presents ILS training courses but does not have one specifically addressing LSA. He said virtually every problem found during Navy logistics audits is related to a lack of training. The Navy has under development a curriculum that will include 30 weeks of ILS and LSA training. However, completion has been delayed because of funding cuts and loss of personnel. The Navy originally planned to present an 8-day LSA training course, starting in the fall of 1981, which was to address both LSA and the LSA Record. This course has only been partially developed. No fiscal year 1982 funding was available for course completion and presentation. According to a Navy official, the fiscal year 1983 funding picture is unclear.

An Air Force official also said that the lack of training is the root of many problems appearing during logistics reviews. The Air Force has begun developing a comprehensive 80-hour LSA training course. However, course development has been delayed due to funding and staff constraints. Air Force officials could not estimate its completion date.

The Army has been the most aggressive service in the development of LSA training. The Army Logistics Management Center offers five logistics courses, ranging from the technical aspects of performing LSA to an executive course on ILS. However, problems related to training, according to an Army official, are found in virtually all acquisition programs.

## Technical support groups could be more effective

Support groups established to provide technical assistance to program offices and contractors in the application of LSA and the LSA Record are not as effective as they could be because they are generally understaffed and the use of their services is optional. These groups provide assistance in determining LSA requirements; preparing statements of work, requests for proposals, and other program documents; conducting LSA reviews; and resolving special problems. They also provide training upon request and participate in the work of the LSA steering group.

The Air Force technical support group consists of only five staff members. The group requested 10 additional personnel in fiscal year 1983, but the request was turned down because of personnel ceilings. The director of the group said that the extremely heavy and continuous workload caused the group not to fulfill its responsibility.

In the Navy, two of the four technical assistance group positions are vacant. The Navy plans to fill only one of these vacancies.

The Army provides assistance to about 30 projects a year with a technical staff of 12. An Army official indicated that the LSA review work was affected by staffing shortages and an occasional shortage of travel funds. This official said that the group turns down about 35 requests for assistance each year because of staff shortages. He also said that a minimum of 10 additional staff is needed to meet the current workload.

## Funding priorities appear to be a problem

Service officials cited funding shortfalls as an impediment to effective implementation of LSA. They were unable to quantify the problem because program offices do not maintain costs of conducting LSA. We reviewed several equipment acquisition programs in an attempt to determine the amount of funds expended for LSA. Neither the individual program offices nor other management offices could provide information on the amount of funds spent on LSA.

The development of an effective LSA program is contingent upon having adequate funding. The services recognize the need to design more supportable systems, but the LSA effort must compete for funds with all other aspects of the material acquisition program. When it comes to allocating the necessary funds, the services give logistics a low priority primarily because benefits cannot be immediately seen and are often difficult to quantify. As a result, the benefits of LSA's early effects on equipment design are often lost.

There is considerable evidence that funding shortfalls exist. In the Navy, for example, a lessons learned report on logistics audits stated that approximately 12 of the 50 major equipment systems audited had logistics support funding deficiencies. The report concluded that the success in obtaining funds for logistics support depends primarily upon a particular program's relative priority. Some of the funding shortfalls were, therefore, attributed to the unsuccessful competition within programs in obtaining logistics support funds.

The Army's system acquisition programs that experienced LSA funding problems include the Blackhawk helicopter and the M-1 tank. In the Blackhawk helicopter program, the contractor cut back its work on developing and updating LSA because the Army had placed funding constraints on it. The contractor resumed work on LSA after it was awarded the initial production contract, but much too late to effectively develop LSA. In the M-1 tank program,

the Army did not fund the development of logistics support during
the validation phase. Although logistics support received some-
what greater emphasis during the M-1's full-scale engineering
development phase, logistics continued to receive low priority
when compared to other program elements. During this phase, the
Army contracted for the development of LSA; however, only limited
LSA data requirements were specified. Furthermore, the LSA im-
plementation came too late to have any influence on the develop-
ment of the M-1's logistics support program.

It is difficult to develop a standard funding level to ensure
that LSA is adequately performed because each program must be in-
dividually tailored. Until specific LSA costs are tracked on a
program-by-program basis, parameters for LSA funding cannot be
developed.

CONCLUSIONS

LSA is an integral part of ILS planning and, if not used ef-
fectively, overall ILS planning will suffer. The services have
taken actions to improve the use of the LSA process over the past
several years. We believe these actions will improve the applica-
tion of the process, however, we noted several areas where further
improvements could be made.

DOD and the services have moved slowly to correct problems
in areas such as eliminating duplicate requirements from contracts
and developing data reporting systems. If the problems are to be
corrected in a timely manner, they must receive higher management
priority.

DOD officials realize that the LSA process is complex and
difficult to administer and that there is a shortage of skilled
personnel in the area. Yet, development and presentation of LSA
training programs have been limited. We do not know how the serv-
ices can improve the LSA process if they do not place a greater
emphasis on training.

Technical support groups formed to assist program offices on
LSA need additional personnel, given the large number of weapon
systems under development by each service. Also, since LSA ex-
pertise is limited, it seems that program offices should be re-
quired to have their LSA programs reviewed by personnel specially
trained in the area.

Funding priorities have consistently been identified as a
problem in implementing LSA. The services give logistics a low
priority because benefits cannot be immediately seen and are often
difficult to quantify.

## RECOMMENDATION

To provide the necessary top management commitment and oversight to further improve the LSA process, we recommend that you require the service secretaries to closely monitor service efforts to improve the LSA process and to provide you with periodic reports on progress achieved and problems encountered. Specific areas needing attention include duplicate data requirements in contracts, data reporting systems, training, technical support groups, and funding.
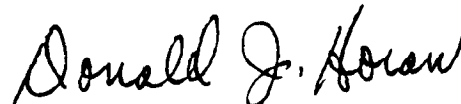
## AGENCY COMMENTS

On September 29, 1982, we met with DOD officials and obtained their official oral comments. They stated that DOD has and will continue to emphasize management attention and initiatives to improve the LSA process.

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As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the Director, Office of Management and Budget; the Chairmen, House Committee on Government Operations, Senate Committee on Governmental Affairs, and House and Senate Committees on Appropriations and on Armed Services; and the Secretaries of the Army, Navy, and Air Force.

Sincerely yours,

Donald J. Horan
Director

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