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DEFENSE INVENTORY

Defense Logistics Agency Needs to Better Manage Procurement Leadtimes



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The Honorable John Glenn
Chairman, Committee on
Governmental Affairs
United States Senate

The Honorable Earl Hutto
Chairman, Subcommittee on Readiness
Committee on Armed Services
House of Representatives

As you requested, we evaluated the Defense Logistics Agency's (DLA) controls over procurement leadtimes used in determining when to initiate a buy. You specifically wanted to know if DLA has adequate management controls to ensure leadtime estimates being used are appropriate to support mission requirements. If they are not, significant adverse effects can occur.

Overstated leadtimes can cause increased investment for larger inventories, greater chances of buying excess material, and increased termination costs if requirements change. Understated leadtimes can cause shortages of needed supplies, which could affect the operational readiness of weapon systems or their components.

As of September 30, 1989, average procurement leadtimes at DLA supply centers ranged from 4 months to 17 months. This required DLA to maintain on-hand and on-order inventory levels valued at about \$5.4 billion. The objectives of our review were to evaluate (1) the DLA practices and procedures for controlling procurement leadtime estimates and (2) DLA's efforts to reduce actual leadtimes. To do this we identified and tested controls at two of DLA's six supply centers—the Defense Electronics Supply Center (DESC), Dayton, Ohio, and the medical supply activities of the Defense Personnel Support Center (DPSC), Philadelphia, Pennsylvania. At these support centers, we reviewed the reasonableness of the leadtimes used for a small (nonprojectable) random sample of stock items. (See appendix I for a more detailed description of our objectives, scope, and methodology.)

Results in Brief

DLA has not implemented adequate controls to manage and minimize procurement leadtimes as directed by the Department of Defense (DOD). Our sample items at the two supply centers had leadtimes that were either

for production leadtime. The longer the procurement leadtime, the more on-hand and on-order stock is needed to meet customer demands and ensure a continuous supply of stock items.

Longer than necessary leadtimes cause DLA to purchase items sooner than needed. This results in an earlier commitment and obligation of funds and increases the risks of buying too much or too little stock. For example, if demand for an item decreases during a long leadtime period, the item being purchased can exceed the services' needs. This would require DLA to either cancel the item on order, dispose of the item, or store it for longer periods. If, however, demand increases, longer leadtimes slow DLA reaction time to get more items in stock, increasing the risk of being out of stock.

Overstated leadtimes could also increase safety level stocks. These are stock levels which are authorized to be on hand as a cushion should demand unexpectedly increase or the actual procurement leadtime take longer than forecasted. Safety level requirements are based on a complex formula and changes in leadtime have a direct effect on the safety level requirements of individual items. DLA officials estimated that a 10-day change in leadtime would have a corresponding change in safety level requirements of 1.7 days. Although we do not know what effect this would have at the DLA level, DOD estimates that for each day leadtimes are reduced, DOD-wide, \$10 million is saved in smaller quantities of safety level stocks.

DLA manages about 685,000 consumable supply items that are based on a forecasted leadtime used to determine inventory requirements and when to initiate a buy. Consumable items are discarded after use as opposed to being repaired or serviced. They include such items as clothing, food, medical, industrial, construction, and electronics supplies. About 75 percent of the items managed by DLA have a unit price of less than \$50.

DLA Lacks Appropriate Leadtime Controls

On December 9, 1985, DOD issued an instruction² that required all services and DLA to establish specific management controls to minimize procurement leadtimes. Although DLA headquarters and the supply centers we visited had taken some actions to implement this instruction, improvements are still needed. More specifically, we found that DLA and/or the centers had not

²DOD Instruction 4140.55, Procurement Leadtimes for Secondary Items

contract award. The Technical Directorate gets involved in the procurement action, primarily to identify product vendors and ensure that items meet specifications. Based on our discussions with Supply Directorate officials, the supply management review, if done, would include only the procedures and actions of the supply directorate.

DLA Has Not Set Standards or Developed Accurate Data to Identify Abnormal Leadtimes

The DOD directive requires DLA to establish procedures to ensure that leadtime estimates are based on representative procurements—those with routine and recurring procurement actions and circumstances. To do this, the directive requires DLA to develop standard times (in days) for carrying out the different phases of routine procurement actions. These standards allow DLA to identify abnormal delays or nonroutine events and keep them from inflating future leadtime estimates. The directive also requires DLA to maintain historical information on all procurements (actual times for various phases of the process) and use representative times from this database to establish forecasted leadtimes. This requirement is designed to help ensure that the forecasted leadtime used by DLA is appropriate and will not unnecessarily distort inventory requirements.

At the two locations we visited—DPSC and DESC—we found that these requirements had not been implemented. Moreover, neither organization had instituted effective alternative procedures to ensure the forecasted leadtimes represented routine or recurring procurement actions. In fact, our tests of 57 supply items, selected from a universe of 24,000 high demand value items,³ showed that 37 (67 percent) had administrative leadtimes that included events we believe to be nonrepresentative. These events included lost purchase requests, nonrecurring time to identify a new source, management directed delays, contractor requested delays, delays caused by training and excessive buyer work load, and one-time technical reviews.

DESC buys electrical contacts for the three military services. Forecasted administrative leadtime for the most recent purchase at the time of our review was 357 days. To determine this number, DLA used a weighted average formula which gives greatest weight to the two most recent purchases, assuming they will be more representative of the future. Therefore, in assessing the accuracy of the 357 days, we limited the

³High demand value items are defined as those having an annual demand that exceeds \$4,500.

- It took 150 days longer than normal to process the buy in part because interns, being used to process the buy, were in school for 30 days. DPSC officials were unaware of the causes for the remaining 120-day delay, and records were insufficient to show the reasons.

If DPSC had eliminated the times associated with these nonrecurring events, we estimate (using DLA's weighted average formula) that administrative leadtime for the most recent buy would have been reduced by 71 days—from 177 to 106. This would have reduced inventory and safety level requirements by \$990 and \$167, respectively.

For all 57 items we reviewed, inventory requirements and safety levels could have been reduced by about \$212,000, if DLA had a system to identify and eliminate unusual or nonrecurring events from forecasted leadtimes. We cannot project these findings to DLA's total inventory based on our small sample. However, our review indicates that significant savings may be possible considering that DLA manages about 685,000 inventory items that use leadtime to determine requirements.

For the above examples, we were able to identify the causes of significant delays only after extensive reviews of the contract files and talking with the appropriate buyers and item managers. For many of our sample items, we identified delays but were unable to determine a cause. This was due to insufficient information in contract files and buyers and item managers not being able to recall contract events. In some cases, buyers had retired, transferred within DLA, or quit. The lack of records prevented reconstruction of the causes of procurement delays. DLA officials believe they are doing the best they can with available resources to carry out the 1985 directive. We recognize that the current DLA procedure, which is intended to identify gross differences between projected and actual leadtimes, has helped identify some inflated leadtimes. However, the procedure depends extensively on the individual initiative and judgment of item managers. During our review we found item managers tried to carry out the procedure but usually lacked sufficient information to identify abnormal leadtime events.

Use of Contract Delivery Dates Distort Forecasted Leadtimes

DLA computes forecasted production leadtime twice on every purchase. Depending on the stage of the purchase, the forecast is based on a weighted average of either the current contractual or the actual delivery time and the old average in the automated system. At the time DLA issues a contract, it uses the contract delivery date to update forecasted leadtimes in the automated system for the next buy. Actual delivery

completed in March 1987, centered on ways to shorten administrative leadtime by increasing automation and improving contracting techniques and management practices. The plan did not include ways to reduce production leadtime even though it now accounts for about 60 percent of total procurement leadtime.

The Under Secretary's December 1986 memorandum encouraged the reduction of production leadtime. The memorandum included recommendations to reduce procurement leadtime that had been made by the Logistics Management Institute in its 1986 report on procurement leadtimes.⁵ However, we found that DESC and DPSC had not implemented specific recommendations for reducing production leadtime by having supply units request the contractors' best delivery times. These times can be used, where possible, to reduce forecasted leadtimes for subsequent buys and in selecting a contractor. In fact, the buyers at these centers normally request contractors to deliver the items on the date specified in DLA's automated inventory system. They do not necessarily want the contractor's best delivery times on all purchases.

DESC officials explained that a contractor's best delivery time should be reserved for items that are urgently needed because of supply shortages. In their opinion, contracting for the best delivery time in all cases would cause vendors to inflate future delivery times to avoid contract penalties for late deliveries. In turn, they said that pressure to achieve the best delivery time on all buys would reduce the vendor's willingness to provide quick deliveries on urgent buys.

If DLA requested the best delivery time in competitive solicitations, contractors that inflated delivery times to avoid future penalties would lessen their chances of receiving the contract awards. This, in our view, is enough of an incentive to obtain some improvement in delivery times. In addition, the best delivery time does not necessarily mean "urgent" delivery time. In emergency situations, DLA still has the option of offering incentives for the contractor to meet more urgent schedules.

The bottom line, however, is that the DLA centers are not following the Under Secretary's 1986 direction and are missing an opportunity to reduce actual production leadtime. This is important because DLA's automated inventory system uses both the contracted and actual production leadtime to generate forecasted leadtimes for future buys.

⁵Procurement Leadtime: The Forgotten Factor, Logistics Management Institute, Sept. 1986.

We, therefore, recommend that the Secretary of Defense direct the Director, DLA, to

- conduct periodic, objective, and comprehensive management reviews at the supply centers to assure all center directorates involved with lead-time comply with applicable DOD procurement leadtime policies and procedures;
- set sound standard time frames for key administrative leadtime events, develop reliable information on the actual time taken for such events, and then compare standards to actual times to remove unusual events in forecasting leadtimes;
- use only actual delivery dates to forecast procurement leadtime unless they are not available or considered unrealistic; and
- request a contractor's best delivery time to reduce forecasted leadtime for future buys and where possible give that delivery time some weight in contract awards.

Agency Comments and Our Evaluations

In its oral comments on our draft report, DOD generally agreed with the report. DOD acknowledged that greater emphasis needed to be placed on both accurately forecasting and reducing procurement leadtimes. DOD stated that DLA would review its supply centers' (1) procedures and initiatives to minimize and accurately forecast leadtimes, (2) criteria and practices for identifying nonrepresentative buy situations with a goal of developing consistent agencywide guidelines by April 1991, and (3) parameters and related procedures for reviewing leadtime updates.

DOD commented that aggressive action in this area will implement commitments made by the Secretary of Defense and the Under Secretary of Defense (Acquisitions) to pursue a cultural change within DOD's acquisition process in which cost-effectiveness is given increased priority.

DOD acknowledged that DLA had not conducted the required periodic on-site supply management reviews since 1986. In DLA's opinion, the payback in terms of problems identified and corrected did not justify the expenditure of the resource required. Rather than doing the required periodic reviews, DLA performed "intensive" reviews on specific known problem areas. DOD also commented that since 1986, DLA had continued to perform its contract management reviews, which concentrated on contracting practices and included administrative leadtime issues. Thus, DOD believes DLA is in compliance with the DOD instruction.

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Objectives, Scope and Methodology

The Chairmen, House Committee on Armed Services and the Senate Committee on Governmental Affairs, asked us to evaluate the Defense Logistics Agency's (DLA) procurement leadtime practices and procedures. The underlying concern was that leadtimes may be too high. Our objectives were to evaluate the practices and procedures for controlling DLA leadtime estimates used for determining inventory requirements and DLA's efforts to reduce actual leadtimes. We performed our work at the Office of Secretary of Defense and Headquarters, DLA, Washington, D.C.; Defense Electronics Supply Center, Dayton, Ohio; Defense Personnel Support Center, Philadelphia, Pennsylvania; and the Logistics Management Institute, Washington, D.C.

We reviewed pertinent documents and reports and met with officials to determine how the DLA supply and procurement systems worked. We identified key DLA systems and controls to manage leadtimes and tested their effectiveness. We used DLA computer programs, reports, and records.

We used a case study approach to determine if leadtimes were too high and if controls were in place and working. An initial random selection of 50 high demand value replenishment items was drawn from DLA supply computer tapes, for both the Defense Electronics Supply Center and Defense Personnel Supply Center, as of September 1988. Our review of controls focused primarily on administrative leadtime since DLA has greater control over actions that make up administrative leadtime. We completed evaluations on 34 electronics items and 23 medical items.

We were unable to project the results of our sample because of its small size and the variance of the results. Nevertheless, our analysis does indicate that adequate controls are not in place and administrative leadtime has not been minimized as required by the Department of Defense. We conducted our review between August 1988 and November 1989 in accordance with generally accepted government auditing standards.

We do not take issue with the statement that DLA is doing "intensive" reviews to correct major problems at certain supply centers. However, since the periodic reviews were curtailed and our review has indicated that the instruction's objectives (i.e., ensuring that leadtimes were minimized, policies were being followed, and leadtime forecasts were accurate) have not been achieved, we do not believe DLA is in full compliance with the DOD instruction.

As arranged with your offices, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from its issue date. At that time, we will send copies to the Chairmen, Subcommittees on Defense, Senate and House Committees on Appropriations; Senate and House Committees on Armed Services; the Director, DLA; the Director, Office of Management and Budget; and other interested parties. We will make copies available to others upon request.

If you or your staff have any questions, please call me on 275-8412. Major contributors to the report are listed in appendix II.



Donna M. Heivilin
Director, Logistics Issues

Part of the reported 12-percent reduction in leadtime resulted from across-the-board changes in leadtimes made by the two Centers we visited. These changes were not, however, based upon actual changes in procurement processing time. At DESC cuts in leadtime were made to reduce requirements and help solve a severe funding problem. While the funding problem may have been mitigated, the cuts distorted DESC's leadtime data. DESC officials admitted these across-the-board cuts were arbitrary and may have produced negative effects on supply operations had it not been for decreasing demands at the time. DPSC also made across-the-board cuts because its leadtimes were too high. Moreover, DLA officials informed us that the Centers all made across-the-board cuts because leadtimes were too high DLA-wide.

In its oral comments on our draft report, DOD said that it agrees that DLA needs to do more to reduce leadtimes. As an example, DOD said that DLA is developing automated systems to use "best delivery" data on future buys. Its Contract Decision/Analysis Support Program initiatives are designed to provide this capability. According to DOD, target dates for implementation of this initiative extend beyond 1995.

Conclusions and Recommendations

We believe that conditions found at the two DLA centers indicate a need to establish better controls and procedures to manage and minimize leadtimes as required by the DOD policy directive. Specifically, DLA officials had not (1) periodically reviewed leadtime practices at these supply centers to ensure that policy was fully implemented, (2) established standards for leadtimes or collected complete and accurate information on actual leadtime, so that proper evaluations could be made to eliminate nonrepresentative procurement actions from forecasted leadtime, or (3) used accurate contract delivery dates in computing forecasted leadtimes. While DLA officials did take some steps to reduce administrative leadtime, they virtually ignored production leadtime.

The primary emphasis of DLA officials has been on ensuring that stock is available to meet customer needs. Since using longer leadtimes can increase stock availability, there is little incentive to reduce leadtimes. We believe it is important that DLA officials implement effective management controls over procurement leadtimes because DLA has large investments in supplies to support leadtime requirements.

time is used to update the forecast only after 51 percent of the largest contract line item has been delivered. However, if actual delivery times differ from the contract times, the forecasted leadtimes can be distorted. We compared actual and contract delivery times on 109 contracts for the 57 supply items we reviewed at DFSC and DPSC to determine if these dates differed and, if so, the extent of the difference. We found only one case where the contract and actual delivery time was the same. For the other 108 contracts:

- Actual deliveries for 58 occurred on the average of 51 days after the contract delivery date. This understated inventory requirements and could have resulted in shortages of items valued at about \$200,000.
- Actual deliveries for 50 occurred on the average of 61 days before the contract delivery date. This overstated inventory requirements and could have resulted in unnecessary items valued at about \$99,000.

According to DOD, the reason DLA uses estimated contract delivery dates as much as it does to forecast leadtimes is linked to DLA's inability in the past to react to rapidly increasing production leadtime by suppliers.

The DOD leadtime instruction clearly states that if information to be used to forecast leadtimes is known to be inaccurate, it should not be used. Using inaccurate estimated delivery dates, even if from a real world buy situation, creates inaccurate leadtime forecasts and does not solve the problem as originally intended. The inaccurate delivery information becomes the major factor in forecasting leadtime for the next purchase of an item, because it is the basis for computing that purchase's estimated contract delivery date. Therefore, DLA's current system for computing leadtime continues to be based on inaccurate information and perpetuates inaccurate leadtimes. That is why we believe that DLA needs to curb its practice of using estimated contract delivery dates in forecasting production leadtimes.

DLA Can Do More to Reduce Leadtimes

Although DLA has reduced leadtimes by 12 percent in response to the 1986 directive, we found that DLA had not implemented DOD recommendations with regard to production leadtime and that the 12-percent reduction resulted in part from funding limitations and across-the-board actions.

In December 1986, the Under Secretary of Defense (Acquisition and Logistics) directed DLA to develop a specific plan to significantly reduce procurement leadtimes by the end of fiscal year 1988. The DLA plan,

scope of our evaluation to these two most recent purchases. Our evaluation identified several nonroutine or nonrecurring events that DLA should have excluded in arriving at forecasted leadtime.

- The buyer had a high work load of 500 purchase requests at the time the system recommended the purchase. As a result, 91 days lapsed before the buyer could start the procurement process. Normally this takes about 5 days. During this delay a second buy was initiated and combined with the first buy, increasing the size of the buy to over the \$25,000-ceiling for small purchases. This required even more steps to be taken and additional procurement delays.
- A potential contractor requested and received a 30-day extension on the time to submit a bid. This did not occur on the previous buy and should not happen on every purchase.
- Two bidders included unapproved parts in their proposals. The Technical Directorate's review and approval of these parts added 100 days to the procurement process. On the previous contract, no technical reviews were required and no alternate parts were bid.
- The contractor refused to submit cost and pricing data, as required for purchases over \$100,000 claiming an exception to the regulations. The resolution of this unusual problem took DESC 89 extra days. Only 1 out of 11 contracts for this item, since 1981, has exceeded \$100,000.

If DESC had eliminated the times associated with these nonrecurring events, we estimate (using DLA's weighted average formula¹) that administrative leadtime for the most recent buy would have been reduced by 130 days—from 357 to 227. We estimate that this would have reduced leadtime and safety level requirements by \$8,230 and \$1,400, respectively.

DPSC-Medical buys cannula sets (tubes to drain fluid from the body) for the three military services. Forecasted administrative leadtime for the most recent purchase at the time of our review was 177 days. Our evaluation of the two most recent purchases showed the following nonroutine or nonrecurring events that DLA should have excluded in arriving at forecasted leadtime.

- A 1987 reduction in force eliminated some buyers at DPSC, and it took an extra 56 days to process the purchase request.

¹DLA's automated supply system weights leadtime from the current buy at 67 percent and the prior average leadtime at 33 percent to arrive at a new average leadtime.

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- conducted periodic supply management reviews,
 - established leadtime standards or developed complete and accurate leadtime information, and
 - used appropriate actual delivery times as a basis for estimating procurement leadtime.

DOD recognizes that procurement leadtimes need to be controlled. Its policy states that if leadtimes are permitted to increase unchecked, stock quantities can also rise increasing the chance of buying items in excess of needs.

DLA Has Not Conducted Supply Management Reviews

The 1985 DOD instruction requires DLA to conduct periodic supply management reviews to ensure leadtimes are minimized, policy is being followed, and leadtime forecasts are accurate. According to DLA Requirements Branch officials in the Supply Directorate (responsible for conducting the review), these supply management reviews have not been conducted for several years. They could not recall when the last one was done, nor provide a report documenting that a review had been done in the past. These Branch officials recognized the importance of the reviews but said their Branch lacked funds to do them.

As a substitute for the reviews, the officials said that leadtimes were discussed at annual supply conferences attended by supply managers from DLA headquarters and supply centers. They also told us that leadtimes were discussed during management visits to the supply centers. One official said the Branch does not maintain records to support the frequency or context in which leadtimes were discussed.

The Supply Directorate has little incentive to minimize leadtimes. The focus of supply management is primarily on having stock available to meet customer demands. Inflated leadtimes increase on-order and on-hand inventories which improves the directorate's ability to meet customer needs and ensures management indicators of supply availability remain high. Greater emphasis on supply availability overshadows DLA's mission requirement to cost-effectively support the military services.

Although responsibility for conducting the supply management reviews lies within DLA's Supply Directorate, two other directorates—the Contracting and Production Directorate and the Technical Directorate—also have a major role in managing leadtime. The Contracting Directorate incurs most of the administrative leadtime days in preparing for the

overstated or understated, thus increasing the risk of buying too much or too little stock. Specifically, DLA has not

- conducted required supply management reviews to ensure that lead-times are accurately forecasted and management actions are being taken to minimize leadtime;
- set standards for the various stages of the buying process or developed complete and accurate information so that nonrepresentative procurement actions can be identified and eliminated from the database used to forecast procurement leadtimes; or
- used realistic delivery dates to forecast leadtimes.

Although DLA has taken measures to reduce the time it takes to award contracts, it has not tried to reduce production and delivery times by obtaining the best delivery dates from contractors. Production and delivery times account for 60 percent of total procurement leadtime.

Background

In late 1985, DOD issued a policy directive that identified management controls to minimize procurement leadtimes. In December 1986, DOD directed DLA to develop a specific plan to reduce leadtimes by shortening the amount of time needed to order and deliver supplies. A 1989 DLA leadtime indicators report shows that the forecasted leadtime (measured in average dollar weighted leadtime days) had been reduced by about 1 month, or 12 percent since 1986—from 323 to 286 days.¹ During this period leadtime requirements went from about \$6.0 billion to \$5.4 billion.

The DLA supply centers use an automated inventory system that periodically compares inventory requirements with assets on hand and on order and recommends actions to increase or reduce stock levels to meet projected demands. One of the important considerations in the automated system is the forecasted procurement leadtime. This is the amount of time DLA estimates that it will need to buy items in advance, so it will not run out of supply before the items are delivered.

The forecasted procurement leadtime is divided into administrative leadtime (the time required to initiate a buy and award a contract) and production leadtime (the time for the contractor to produce and deliver the item). DLA's 1989 leadtime data show that about 40 percent of the procurement leadtime is for administrative leadtime and 60 percent is

¹Excludes DLA's leadtimes for the Clothing and Textile Directorate because its data were inaccurate.

