

July 31, 2002



# Supply Inventory Management

Defense Logistics Agency Aviation  
Investment Strategy Program  
(D-2002-136)

Department of Defense  
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### **Acronyms**

AIS	Aviation Investment Strategy
DLA	Defense Logistics Agency
DORRA	Defense Logistics Agency Office of Operations Research and Resource Analysis
SAMMS	Standard Automated Materiel Management System



INSPECTOR GENERAL  
DEPARTMENT OF DEFENSE  
400 ARMY NAVY DRIVE  
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July 31, 2002

MEMORANDUM FOR DIRECTOR, DEFENSE LOGISTICS AGENCY

SUBJECT: Audit Report on the Defense Logistics Agency Aviation Investment Strategy Program (Report No. D-2002-136)

We are providing this report for review and comment. The Aviation Investment Strategy is a program initiated by the Defense Logistics Agency to improve supply support to aviation weapon systems by increasing the stockage levels of consumable repair parts. We considered management comments on a draft of this report when preparing the final report.

DoD Directive 7650.3 requires that all recommendations and unresolved issues be resolved promptly. Defense Logistics Agency comments were partially responsive, and we request additional comments on Recommendation 1.b. and the potential monetary benefits. Management comments should be provided by September 30, 2002.

We request that management provide comments that conform to the requirements of DoD Directive 7650.3. If possible, please provide management comments in electronic format (Adobe Acrobat file only). Send electronic transmission to the e-mail addresses cited in the last paragraph of this memorandum. Copies of the management comments must contain the actual signature of the authorizing official. We cannot accept the / Signed / symbol in place of the actual signature. Classified comments must be sent over the classified SECRET Internet Protocol Router Network (SIPRNET).

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. Tilghman A. Schraden at (703) 604-9186 (DSN 664-9186) (tschraden@dodig.osd.mil) or Mr. Thomas D. Kelly at (215) 737-3886 (DSN 444-3886) (tkelly@dodig.osd.mil). See Appendix G for the report distribution. The audit team members are listed inside the back cover.

*David K. Steensma*

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Acting Assistant Inspector General  
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# Office of the Inspector General of the Department of Defense

Report No. D-2002-136  
(Project No. D2001LD-0076)

July 31, 2002

## Defense Logistics Agency Aviation Investment Strategy Program

### Executive Summary

**Who Should Read This Report and Why?** Logistics and financial personnel interested in monetary initiatives designed to improve military readiness, particularly those aimed at aviation, should read this report. This report evaluates the effectiveness of the Defense Logistics Agency investment strategy to improve supply support to aviation weapon systems by increasing the stockage levels of consumable repair parts.

**Background.** Program Budget Decision 425, December 1, 1999, increased funding beginning in FY 2001 to acquire consumable aviation repair parts by \$500 million over a 4-year period. The Defense Logistics Agency requested the increase in funding in the summer of 1999 to improve supply support of aviation repair parts and, in turn, the readiness of aviation weapon systems. The Defense Logistics Agency named the initiative the Aviation Investment Strategy program.

The Defense Logistics Agency is primarily responsible for satisfying the consumable item needs of the Military Departments. The Defense Logistics Agency buys and manages about \$10 billion of consumable items each year through its supply centers. Under the weapons system support concept of the Defense Logistics Agency, the Defense Supply Center Richmond focuses on aviation weapons support. Because of its focus, the Defense Supply Center Richmond is designated the lead center for carrying out the Aviation Investment Strategy program, although the other supply centers have significant roles.

**Results.** Although the Aviation Investment Strategy program had merit and should continue, improvements in the execution of the program were needed. Given the dynamics of the supply process and the severe constraints of its legacy automated supply system, the Defense Logistics Agency faced a formidable task in mediating variable safety level imbalances in aviation repair parts. Since the Aviation Investment Strategy program began in September 1999 with selection of items for additive investment, the Defense Logistics Agency has augmented the variable safety level of 6,400 items to achieve an aggregate 85-percent supply availability rate. The augmentation amounted to \$320.2 million more for safety levels than the legacy system provided. The methodology and criteria the Defense Logistics Agency used to augment the variable safety levels that the legacy system provided were sound. However, DLA did not provide adequate assurance that the computed additive quantities remained appropriate for all items. A random stratified statistical sample of 180 items indicated that 3,375 (53 percent) of the 6,400 items selected for investment in FY 2000 and FY 2001 still warranted the augmented safety levels the Defense Logistics Agency computed and the remaining 3,025 (47 percent) items either no longer needed an additive safety level quantity or did not warrant their variable safety level augmented as much to attain an 85-percent supply

availability rate. As a result, we projected that \$99.2 million of the Aviation Investment Strategy program funds were potentially well invested and that \$111.6 million could be put to better use by investing in mission-critical items whose safety levels were still insufficient and, therefore, additive investment would improve supply availability and aviation readiness.

The Defense Logistics Agency, however, recognized that additive increases could be shifted to other items and, subsequent to our review, initiated corrective action. As of January 15, 2002, the Defense Logistics Agency had removed or planned to remove 19 of our sample items from the Aviation Investment Strategy program and redistribute \$6.6 million to other items. The Defense Logistics Agency did not agree with our projection that \$111.6 million of the Aviation Investment Strategy program funds could be put to better use. For details of the audit results, see the Finding section of this report.

**Management Comments and Audit Response.** The Defense Logistics Agency generally concurred with the recommendations but disagreed with the use of the most current supply availability data in determining additive safety level requirements. The Defense Logistics Agency nonconcurred with the finding, the potential monetary benefits, and our identification of a material management control weakness in the execution of the Aviation Investment Strategy program. The Defense Logistics Agency corrective actions were generally responsive. However, we determined that the Defense Logistics Agency did not use consistent time frames for determining supply availability and because it used an automated process, the use of the most recent data would not significantly delay the procurement process. Additionally, we projected the funds put to better use based on the results of our analysis of a valid random stratified statistical sample. We request that the Defense Logistics Agency reconsider its comments on the use of consistent and current data in determining supply availability data and potential monetary benefits and provide additional comments by September 30, 2002.

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## Background

**Supply Responsibility.** The Defense Logistics Agency (DLA) is primarily responsible for satisfying the consumable item needs of the Military Departments. DLA buys about \$10 billion of consumable items each year through its supply centers. The Defense Supply Center Columbus focuses on land and maritime weapons support. The Defense Supply Center Philadelphia focuses on troop support (clothing and textiles, medical items, and subsistence) and general commodity items such as lighting and office supplies. The Defense Supply Center Richmond focuses on aviation weapons support. Although the Defense Supply Center Richmond is the principal provider of aviation repair parts, both the Defense Supply Center Columbus and the Defense Supply Center Philadelphia have significant roles. For FY 2000, DLA sold \$2.7 billion of aviation repair parts (233,000 line items) at standard prices. See Appendix C for definitions of standard prices and other supply terms used in this report.

**Aviation Investment Strategy Program.** As part of Program Budget Decision 425, the Defense Resources Board approved the Aviation Investment Strategy (AIS) program on December 1, 1999. The Defense Resources Board is chaired by the Deputy Secretary of Defense and vice-chaired by the Chairman of the Joint Chiefs of Staff. Board members include the Secretaries for the Military Departments; the Vice Chairman of the Joint Chiefs of Staff; the Under Secretary of Defense for Acquisition, Logistics, and Technology; the Under Secretary of Defense for Policy; the Under Secretary of Defense (Comptroller); the Under Secretary of Defense for Personnel and Readiness; and the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence. The Director of Program Analysis and Evaluation serves as the Executive Secretary.

In the summer of 1999, DLA analyzed ways to meet a performance standard that was contractually established by the Defense Resources Board. The standard states that, "Aggregate supply availability for all weapon systems will be equal to or greater than 85 percent for each military service for each fiscal year." DLA determined that it could achieve an aggregate standard by optimizing the performance of the supply centers but that pockets of items would remain below acceptable support rates. DLA proposed the AIS program as a way to address those pockets of items. The initial investment proposal called for increasing the safety level of about 18,000 repair parts whose supply availability rate was below 85 percent for FY 1998. As of March 20, 2001, DLA planned to invest in 11,945 items.

**Criteria.** The supply availability rate is the percentage of requisitions completely filled when submitted to an inventory control point. The DoD standard is to fill customer requisitions at an aggregate supply availability rate of 85 percent by weapon system and Military Department. Although DLA had met the DoD standard in overall terms, requisitions for many individual and groups of aviation repair parts had historically been filled at a much lower rate. The reason for the lower rates, according to DLA, was that aviation repair parts are generally expensive and infrequently demanded and that all inventory optimization models--including the model that the DLA legacy supply system, the Standard Automated Materiel Management System (SAMMS), employed--generally support low-cost,

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high-demand items. While providing better overall support, such optimization models can also result in low supply availability rates for high-cost, infrequently demanded items--those items that are characteristic of aviation repair parts and that can have a disproportionate effect on readiness.

The AIS program is essentially an endeavor to compensate for the inventory optimization model by raising the safety level higher than SAMMS provides. A safety level is an additional quantity of items included in requirements that provides protection against an item running out of replenishment stock, that is, the sum of the reorder quantity and procurement lead time quantity. From a stratification standpoint, an item becomes out of stock when the stock acquired to cover its procurement lead time is exhausted. Thus, the safety level protects against shortages that result from unforeseen or random increases in customer demand and procurement lead time. DoD Regulation 4140.1-R, "DoD Materiel Management Regulation," May 20, 1998, limits the safety level quantity to the quantity computed for the procurement lead time.

**Funding.** Program Budget Decision 425 increased funding to acquire aviation repair parts by \$500 million over a 4-year period beginning in FY 2001. The Navy and Air Force were to finance the initiative equally by making annual transfers from their operations and maintenance appropriations to the Defense Working Capital Fund. Of the \$500 million, \$454 million was to be used for replenishment (demand based) items and the balance (\$46 million) used for numeric stockage objective (insurance) items. The funds were to be distributed to items by increasing safety levels. To ensure that the funds would be distributed judiciously, DLA stratified the 11,945 items by mission criticality into three tiers and requested the Military Departments to validate their selection. The following table shows by fiscal year and tier how the funds were to be distributed.

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**AIS Fund Distribution by Fiscal Year and Tier**

<u>FY 2001</u> <u>(\$100 million)</u>	<u>FY 2002</u> <u>(\$100 million)</u>	<u>FY 2003</u> <u>(\$150 million)</u>	<u>FY 2004</u> <u>(\$150 million)</u>
Tier 1 <sup>1</sup> engine items and Tier 1 non-engine items with long procurement lead times (including parachutes, helicopter blades, landing gear, and radar)	Tier 2 <sup>2</sup> and 3 <sup>3</sup> engine items and remaining Tier 1 non-engine items	Tier 2 non-engine items and Tier 3 non-engine items with supply availability less than 50 percent	Remaining Tier 3 items and numeric stockage objective items

<sup>1</sup>Tier 1 items support the 20 to 30 most critical weapon systems of a Military Department. The failure of a Tier 1 item would render a weapon system inoperable or would be needed for safety, legal, climatic, or other requirements peculiar to the planned operation of a weapon system.

<sup>2</sup>Tier 2 items support the 20 to 30 most critical weapon systems of a Military Department. The failure of a Tier 2 item could cause impairment or temporary reduction in the operational effectiveness of a weapon system. Tier 2 items also support less critical weapon systems of a Military Department; Tier 2 items would render a less critical weapon system inoperable or would be needed for safety, legal, climatic, or other requirements peculiar to the planned operation of a weapon system.

<sup>3</sup>Tier 3 items support weapon systems. The failure of Tier 3 items would not render a weapon system inoperable. Tier 3 items also support nonweapon systems.

To accelerate the AIS program, DLA increased the safety levels of Tier 1 repair parts 1 year in advance of the funding so that receipt of items could better match the funding stream. As of March 20, 2001, DLA had increased the safety level for 6,400 items an equivalent of \$320.2 million, of which about \$250 million was designated for Tier 1 items. The Defense Supply Center Richmond is the lead supply center for carrying out the AIS program, while the DLA Office of Operations Research and Resource Analysis (DORRA) provides analytical support that includes assistance in item selection

## **Objectives**

The audit objective was to evaluate the effectiveness of the DLA investment strategy to improve supply support to aviation weapon systems by increasing the stockage levels of consumable repair parts. We reviewed the management control program as it applied to the audit objective. See Appendix A for a discussion of the audit scope and methodology, our review of the management control program, and prior coverage.

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## Program Execution

Although the AIS program had merit and should continue, improvements in the execution of the program were needed. Given the dynamics of the supply process and the severe constraints of its legacy automated supply system, DLA faced a formidable task in mediating variable safety level imbalances in aviation repair parts. Since the AIS program began in September 1999 with the selection of items for additive investment, DLA has augmented the variable safety level of 6,400 items to achieve an 85-percent supply availability rate. The augmentation amounted to \$320.2 million more for safety levels than SAMMS provided. The methodology and criteria DLA used to augment the variable safety levels SAMMS provided were sound. However, DLA did not provide adequate assurance that the computed additive quantities remained appropriate for all items. As of July 31, 2001, a random stratified statistical sample of 180 items indicated that 3,375 (53 percent) of the 6,400 items selected for investment in FY 2000 and FY 2001 still warranted the augmented safety levels DLA computed and the remaining 3,025 (47 percent) items either no longer needed an additive safety level quantity or did not warrant their variable safety level augmented as much to attain an 85-percent supply availability rate because:

- the SAMMS supply position had improved and the items were achieving more than an 85-percent supply availability rate.
- the delivery method or supply status had changed, or the production capability remained limited.
- the revised safety level exceeded the prescribed safety level limitation.

Those conditions occurred because an implementation plan that would provide adequate guidance for minimizing and rectifying unnecessary stockage increases was not fully developed. As a result, we projected that an estimated \$111.6 million of the AIS program funds could be put to better use by investing in mission-critical items whose safety levels were still insufficient and, therefore, additive investment would improve supply availability and aviation readiness.

DLA recognized that additive investments could be shifted to other items and, subsequent to our review, initiated corrective action. As of January 15, 2002, DLA removed or planned to remove 19 of our sample items from the AIS program and redistribute \$6.6 million to other items. However, DLA did not agree with our projection that \$111.6 million of the AIS program funds could be put to better use. Details of our sample and the sample results are shown in Appendix A. A list of the sample items selected for review is provided in Appendix B.

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## Process

Execution of the AIS program is essentially a five-step process:

- DORRA determines average supply availability rates and identifies potential candidates for additive investment.
- The Military Departments and DLA supply centers review potential candidates for additions and subtractions.
- The Defense Supply Center Richmond approves the final list of items for additive investment.
- DORRA computes safety level increases or additive investments.
- The Defense Supply Center Richmond sends the final list of items to the DLA supply centers for loading the safety level increases in SAMMS and initiating acquisition plans.

Our review focused on how well the first four steps were accomplished. We did not review the actual investment or the obligation of additive funds for the items. To determine the effectiveness of the execution process, we took a random stratified statistical sample of the 6,400 consumable repair parts whose safety levels had been increased in FY 2000 and FY 2001. Those items were categorized mostly as either Tier 1 or Tier 2 and were selected to receive \$320.2 million of additive investment funds. DLA initially computed the potential additive investment needed to attain a collective 85-percent supply availability rate essentially as:

Potential Additive Investment (Safety Level Increase) = Maximum Authorized  
by DoD Regulation 4140.1-R (the Procurement Lead Time Quantity) - the  
Variable Safety Level Quantity SAMMS Provided

We judged our sample of 180 items as needing the additive investment (increase in stock to achieve an 85-percent supply availability rate) based on the item's supply position, as portrayed by stock control records or as related by item managers. We concluded that an item either needed or did not need a safety level increase based on review of transaction histories, back order performances, procurement lead times, stock on hand, demands, and variable safety levels. Our conclusion on the necessity of potential additive investments was also influenced by an item's current acquisition method, production capability, and supply status. In addition, we considered the prescribed safety level limitation in determining whether an item that needed investment should receive a reduced amount. Again, DoD Regulation 4140.1-R limits the safety level quantity to the quantity computed for the procurement lead time. At the time of our review, none of the 180 sample items had been excluded from potential investment.

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## Anticipated Benefits

**Sample Projection.** Execution of the \$500 million AIS program could have better ensured that anticipated benefits in weapon system readiness were achieved. As of July 31, 2001, a random stratified statistical sample of 180 items indicated that 3,375 (53 percent) of the 6,400 items selected for investment in FY 2000 and FY 2001 still warranted the augmented safety levels DLA computed but that the remaining 3,025 (47 percent) items either no longer needed an additive safety level quantity, or did not warrant their variable safety level augmented as much, to attain an 85-percent supply availability rate because:

- the SAMMS supply position had improved, and the items were achieving more than an 85-percent supply availability rate.
- the delivery method or supply status had changed, or the production capability remained limited.
- the revised safety level exceeded the prescribed safety level limitation.

Of the 3,025 items we projected as having higher than necessary augmented safety levels, 2,321 had inventory level increases that were no longer needed and those increases amounted to \$111.6 million more than necessary to attain a supply availability rate of 85 percent. We did not project the dollar amounts for safety level increases of another 704 items that we concluded warranted reduction.

**Sample Results.** Of our sampled items, we determined that the safety level increase for 83 items was necessary to improve the supply availability rate for those items. For another 30 of the sampled items, part of the increased safety level could have been used to augment other items with less than an 85-percent supply availability rate; and, for 23 of those items, the revised safety level also exceeded the safety level limitation. The 30 items were included in our item projection but were excluded from our dollar projection because we could not estimate reduced dollar amounts that could be shifted to other mission-critical items. For the remaining 67 sampled items, the safety level increase was no longer needed to achieve an 85-percent or higher supply availability rate (50 items) or would have no effect on supply availability (17 items); and, for 21 of those items, the revised safety level also exceeded the safety level limitation. For the sample items that no longer needed safety level increases:

- 50 items attained an 85-percent or higher supply availability rate after the items were selected for additive investment. The items were below the 85-percent supply availability rate when they were initially selected for additive investment; however, their supply availability rate improved to as much as 100 percent at the time of our review. For 16 of the items, the revised safety level was also higher than the safety level limitation.
- 8 items were supported by direct vendor delivery or prime vendors after the items were selected for additive investment. The revised method of support meant that safety levels would play a substantially

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lesser role in determining the quantitative requirements of an item because the Government was no longer involved in supply and distribution functions. Therefore, the computed additive safety levels were extraneous. For three of the items, the revised safety level was also higher than the safety level limitation.

- 7 items were already being procured at maximum amounts as a result of production limitations at the time the items were selected for additive investment. A limited production capability meant that added investment would not improve supply availability because no additional stock could be provided regardless of the safety level increase. For one of the items, the revised safety level was also higher than the safety level limitation.
- 2 items became obsolete or were replaced after the items were selected for additive investment. For one of the items, the revised safety level was also higher than the safety level limitation.

Under those circumstances, safety level increases may have improved supply availability in some cases but would have limited effect in improving overall supply responsiveness and were often unauthorized. Appendix B contains details on selected items.

Potential overstockage generally occurred because DLA did not continue to verify the appropriateness of safety level increases initially computed, while the supply position and acquisition method of items changed from the time the items were deemed to need additive investment until safety levels were increased.

**Baseline Time Frame.** The baseline for selecting aviation repair parts for additive investment occurred during a turbulent time for DLA logistics. In September 1999, execution of the AIS program began when DLA identified aviation repair parts for increased safety levels on the basis that the parts did not meet an 85-percent supply availability rate. Average supply availability rates computed for the items were based on the FY 1998 through FY 1999 time frame. Shortly before or during FY 1998 through FY 1999, DLA closed or realigned supply centers, redistributed management responsibility for thousands of items, and initiated new commercial business practices for acquiring many items. In addition, inventory reduction was a DLA goal during that time; and the DLA supply centers were not supporting aviation repair parts at 100 percent of demand to reduce supply inventory, thereby straining safety levels and supply responsiveness. However, the events and management decisions that occurred during the FY 1998 through FY 1999 time frame were unique and their short-term effect on requirements could have been generally anticipated. DLA did not adequately consider that the supply performance of aviation items was atypical during the turbulent time frame in computing additive safety level requirements. As a result, computed additive safety level requirements for certain items became excessive when supply performance stabilized.

**Safety Level Increases.** Increases in aviation repair part safety levels were made during a much more stable time for DLA logistics. DLA increased the safety levels for 6,400 items in January 2000 (2,823 items in FY 2000) and

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between October 2000 and February 2001 (3,577 items in FY 2001). The safety levels were initially increased as many as 40 months after the time period that began in October 1997 for assessing the supply availability of items. Since October 1997, unsatisfactory supply availability occurred on an individual item basis, but the overall trend has been toward improved supply availability and a need for less additive investment.

In April 2001, using prevailing data analysis tools and DLA records, we assessed supply availability of the 2,823 items whose safety levels had been increased in January 2000. The average supply availability rate of the 2,823 items improved from 34 percent in FY 1998 to 67 percent in FY 2000, although little additional stock had been received from the additive investment. For 1,423 of the 2,823 items, the average supply availability rate exceeded the 85-percent additive investment criteria by an average of 13.1 percent. Therefore, the increased safety levels appeared unnecessary. The potentially unnecessary safety level increases were primarily the result of an improved supply position of the items. Conversely, for 1,400 of the 2,823 items, the average supply availability rate was below the additive investment criteria an average of 49.7 percent and, therefore, the increased safety levels appeared to be appropriate but potentially not enough. Had the safety levels for the 1,423 items been monitored, safety level protection could have been shifted to the more needy items.

## **Implementation Plan**

The potential for overinvestments was established and remained in SAMMS because an implementation plan, one that would provide adequate guidance for minimizing and rectifying unwarranted stockage increases, was not fully developed. With the general trend toward improved supply availability, planning the execution process became critical for the success of the AIS program, if appropriate investments were to be identified and executed. The Defense Supply Center Richmond prepared the initial implementation plan for DLA in December 1999 and updated the plan in October 2000. The initial implementation plan was prepared the same month that the AIS program was approved and 1 month before the items selected for funding in FY 2000 had their stockage levels increased. Thus, the initial implementation plan was unavailable for much of the execution process and provided mostly background information on the AIS program as well as the status on what had either been accomplished or milestones for planned events. The updated implementation plan also emphasized program accomplishments and lacked the specificity needed to minimize and rectify unnecessary stockage level increases. More definitive guidance was needed over validating potential candidates for additive stockage, computing safety level requirements, reviewing appropriateness of safety level increases, and accounting for supply changes as well as maintaining safety level increases within prescribed limitations. The updated implementation plan also lacked effective administrative provisions because it did not have higher level endorsement, it was not coordinated with the Military Departments, and it contained no process for resolving issues.

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**Validating Potential Candidates.** The implementation plan contained no specific guidance for validating potential candidates for additive stockage. The validation of items selected for increased safety levels was to be carried out by the Military Departments and the DLA supply centers. However, factors for validating potential investments were not formally established in the implementation plan. For FY 2000 potential investments, incorporation of more definitive guidance in the implementation plan was moot because not enough time was allowed to conduct validations from the time the AIS program was approved in December 1999 until the time the safety levels of items were increased in January 2000. For FY 2001 investments, DLA did request the Military Departments and supply centers to review the candidates for additive investment, but provided no specific instructions on the criteria, what to review, or the alternatives. DLA told the Military Departments and supply centers to look for anything that could affect potential investments. Obsolescence and design changes were given as examples. As a result, efforts to identify questionable candidates for additive stockage were far from aggressive or comprehensive. Of 125 DLA supply managers interviewed, 30 told us that they had either questioned their supervisors or had reservations about increasing the safety level of items but took no action to eliminate the candidates or reduce the safety level quantities computed.

**Computing Requirements.** The implementation plan contained no instructions that would help ensure that any supply data used in computing safety level increases were consistent and current. The implementation plan provided that safety level increases were to be computed on the basis of supply availability performance for 2 fiscal years. However, the plan did not provide for using the most recent supply data to determine past supply availability performance. For the FY 2000 and FY 2001 safety level increases, DLA was not consistent because it used supply data for various time periods to determine average supply availability rates, none of which included supply data from the quarter that preceded the quarter when safety levels were increased. The additive stockage quantities computed for FY 2000 and FY 2001 were based on supply data that was at a minimum of 3-months old before safety levels were increased by supply centers. DLA officials told us that consistent and more recent supply data were not used because of time constraints and because the safety level increases would not be materially different.

**Time Constraints.** To give supply centers ample time to meet annual obligation goals, DLA officials told us that they had to finalize a list of items for increased safety levels before the start or at the beginning of a fiscal year. Finalizing such a list of items meant that the supply data for the preceding fourth quarter were not considered in the calculation of safety level increases. The Defense Supply Center Richmond approves and sends the final list of items to the supply centers for loading increases to safety levels in SAMMS after:

- DORRA computes the average supply availability rates and identifies potential candidates for additive investment;

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- Military Departments and supply centers review the potential candidates for additions and deletions; and,
  - DORRA computes the safety level increases or potential additive investments.

The DORRA computations are automated and could be performed relatively quickly (within 2 weeks) before and after the review that the Military Departments and supply centers perform. To promote accuracy, the second DORRA computation should be based on the most current prior 2 fiscal years of supply data (including the fourth quarter) and performed early in the next or same quarter in which items are invested. Doing so would likely identify some additions and deletions that were not reviewed by the Military Departments and supply centers. The additions, if material, could be held for the next investment period or aggressively reviewed within a strict time frame. The deletions, if material, could be eliminated. Having supply centers increase safety levels based on the most recent supply data is not an insurmountable impediment to achieving annual obligation goals and promotes accuracy and the likelihood of improving the readiness of aviation weapon systems.

**Materiality.** DLA officials also stated that the use of the most recent supply data to compute safety level increases would not materially change the dollar amount of additive investments. Although that statement was generally true from an overall investment standpoint, the use of current supply data would have had an impact on the safety level increases computed for individual items.

- For FY 2000 investments, we used two computer analyses DORRA prepared to compare supply data for all of FY 1999 to the time frame that DLA used through the third quarter to compute additive investments. The comparison showed that the computed additive investment for 2,743 (97.2 percent) of the 2,823 selected aviation repair parts would have changed. The safety levels would have decreased by \$62.4 million (63.4 percent) for 1,824 items and would have increased by \$40.4 million (53.6 percent) for 919 items.
- For FY 2001 investments, we also used two computer analyses DORRA prepared to compare supply data available for all of FY 2000 to the time frame that DLA used through FY 1999 to compute the bulk of additive investments. The comparison showed that the computed additive investment for 3,409 (95.3 percent) of the 3,577 selected aviation repair parts would have changed. The safety levels would have decreased by \$51.5 million (54.8 percent) for 1,816 items and increased by \$50.5 million (112.2 percent) for 1,593 items.

In effect, additive safety level increases for individual items change in response to quarterly movements in supply availability. Consequently, the most recent supply data should be used as a basis of computing accurate additive requirements and as a way of ensuring improvements in readiness.

**Reviewing Safety Level Increases.** The implementation plan contained no instructions on reviewing safety level increases for continued appropriateness.

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The implementation plan contained milestones for only the four initial investment periods through FY 2003 and, based on the routine established for program execution, the AIS program appeared to end after 4 years when all of the \$500 million was invested. DLA officials had made no plans to manage the AIS program beyond the initial 4-year investment period, and inappropriate investments would subsequently be absorbed into the Defense Working Capital Fund. As of March 20, 2000, DLA had increased the safety levels for 6,400 items the equivalent of \$320.2 million, but had not reviewed any of the items to determine if the augmented levels were still appropriate. DLA officials indicated that it was too early to review past stock increases. However, as previously discussed, the results of our sample of the 6,400 items showed that 2,321 items should have had their computed additive investments shifted to other mission-critical items as of July 31, 2001. The safety level increases had limited effect on supply responsiveness and, for at least 17 of the sampled items identified by us as no longer needing safety level increases, the conclusion could not change. The safety level increases for those items would not change because, for the most part, the improved supply position of the items was the result of a permanent change, such as the use of direct vendor delivery, to acquire the items. Unless augmented safety levels are periodically reviewed and adjusted as appropriate, a portion of the AIS program will increase inventory without an improvement in readiness.

**Maintaining Safety Level Increases.** The implementation plan contained no instructions on accounting for supply changes and maintaining additive safety level increases within prescribed limitations. To determine the quantitative increase needed to attain at least an 85-percent supply availability rate, DLA initially computed additive safety level increases essentially as the difference between the maximum safety level authorized by DoD Regulation 4140.1-R (the procurement lead time quantity) and the variable safety level as SAMMS computed based on quarterly demands. DLA maintained the same additive safety level increase without taking into account changes in SAMMS, even though changes had occurred in demands, procurement lead times, and variable safety levels of the items.

Since initially computing additive safety level increases, DLA has twice changed its method of maintaining additive investments in SAMMS--essentially discounting actual supply position changes and perpetuating the same additive investment. Under the method in effect since June 2001, the "difference" can take the place of the variable safety level and exceed the safety level limitation. For example, the initial computation for one of our sample items, a \$1,739.70 support beam assembly with a supply availability rate at 72 percent in September 1999, resulted in an additive safety level increase of 47 (\$81,766) as follows:

#### **September 1999 Computation**

Safety Level Limitation - Variable Safety Level	=	Safety Level Increase
50 (\$86,985) - 3 (\$5,219)	=	47 (\$81,766)

When we reviewed the assembly in April 2001, the assembly would not even qualify for additive investment because its supply availability rate had reached 100 percent without the additive investment protection. Further, because of the

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changes in the demand or procurement lead time of the assembly, the maximum amount of additive safety level that would have been authorized if it were computed would have been reduced to 10 (\$17,397) as follows:

**April 2001 Computation**

Safety Level Limitation - Variable Safety Level	=	Safety Level Increase
25 (\$43,493) - 15 (\$26,096)	=	10 (\$17,397)

If the June 2001 method of maintaining the additive investment in SAMMS had been in effect in April 2001, the additive safety level (47) for the assembly would have been more than the safety level limitation (25) and the variable safety level (15) combined. An effect of using that method was that AIS program funds would not only pay for a safety level increase that had become unnecessary, but would also be used to partially finance a safety level that normally would have been financed by the Defense Working Capital Fund without the additive investment.

The approach DLA initially used to select and calculate safety level increases within the safety level limitation should have remained consistent as supply positions changed. As supply positions improved, the amounts of additive investment calculated should have been reduced to accommodate variable safety level increases and stay within the safety level limitation. Without accounting for changes in the supply position of items, DLA lacked oversight of investments that could be shifted to items with a greater need. Had the June 2001 method of maintaining additive investments been used for the Defense Supply Center Richmond-managed items as of March 31, 2001, \$45.8 million of the \$103.8 million additive investment maintained in SAMMS for 654 items would have been above the safety level limitation. In addition, because the variable safety level that SAMMS provided would have been overridden, the AIS program would finance a stockage level increase of \$13.8 million that should have been financed by the Defense Working Capital Fund. DLA needs to select an appropriate method of maintaining safety level increases, one that accounts for changes in the supply position of items and complies with the safety level limitation. The method should be formally established in the implementation plan as a way of accurately identifying and reallocating funds earmarked for unnecessary investment.

**Administrative Provisions.** The implementation plan also lacked effective administrative provisions. The plan did not have higher-level endorsement, it was not coordinated with the Military Departments, and it contained no process for resolving issues. The implementation plan was developed by a small group of DLA officials employed at the Defense Supply Center Richmond. Notably, despite repeated requests to DLA headquarters representatives for feedback on the implementation plan, none was received and the implementation plan was adopted as final by the officials at the Defense Supply Center Richmond. Higher-level endorsement of the program's planned execution process was needed at DLA headquarters as well as the Military Departments. The AIS program is essentially a partnership between DLA and the Military Departments designed to improve the readiness of aviation weapon systems. However, DLA did not seek any Military

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Department participation when preparing the implementation plan or an agreement as to how the AIS program was to be executed. The lack of agreement appears to have had a negative bearing on the success of the AIS program.

The Military Departments have participated in varying degrees in quarterly working group meetings held by DLA to discuss execution issues. The chief issue the Military Departments raised at each of five meetings taking place through April 2001 concerned criteria used to select candidates for additive investment. The Military Departments believed that the selection criteria should take into account an item's impact on readiness rather than relying on an item's supply availability rate. The disagreement had not been resolved and had likely contributed to less enthusiasm for carrying out the execution process. For the FY 2002 investment period, for example, the Navy and Air Force were 2 months late in validating the items DLA selected for additive investment and, as of June 2001, the Army did not reply at all. To ensure success of the AIS program, the implementation plan should be formally approved by DLA headquarters, present a joint, agreed-to approach by DLA and the Military Departments toward program execution, and provide a flag or general officer resolution process whenever problem elevation is necessary.

## **Readiness Impact**

Unless safety level increases are made with greater accuracy and periodically adjusted when they are unnecessary, the AIS program will not achieve all of the gains in readiness anticipated for aviation weapon systems. Program Budget Decision 425 cites a study that the Office of the Director, Program Analysis and Evaluation made that predicts a 3-percent to 4-percent improvement in aviation readiness, an equivalent of 140 additional aircraft ready each day from increasing the safety level of consumable aviation repair parts by \$500 million. However, no system was put in place that could tie in the additive investments in repair parts to gains in aircraft readiness. Therefore, the predicted gains in readiness could not be substantiated. Nevertheless, according to DoD officials responsible for developing Program Budget Decision 425, the prediction of improved readiness was speculative and based on the supposition that improved supply availability would equate to improved readiness.

Better program execution, enhanced by Military Department coordination and a higher-level management involvement, is needed to ensure investments are applied to items that need an increase in supply availability and are within prescribed safety level limitations. Therefore, more definitive guidance was needed for validating potential candidates, computing requirements, reviewing safety level increases, and maintaining additive safety levels in line with supply position changes and prescribed limitations. Items for which the supply availability rate is already at an acceptable level or do not warrant improvement need to be identified and the resulting funds put to better use. Based on statistical sample results, we projected that an estimated \$111.6 million could be put to better use by shifting safety level increases to mission-critical items in greater need that require additive investments. Given the dynamics of the supply process and the severe constraints of the legacy automated supply system, DLA faced a

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formidable task in mediating variable safety level imbalances in aviation repair parts. Although the methodology and criteria DLA used to augment the variable safety level of items was sound, more assurance that the additive amounts remained appropriate was needed.

## **Management Comments on the Findings and Audit Response**

A summary of DLA comments on the finding and discussion and audit response is in Appendix D.

## **Recommendations, Management Comments, and Audit Response**

**We recommend that the Director, Defense Logistics Agency:**

**1. Direct the Defense Supply Center Richmond to revise the Aviation Investment Strategy implementation plan to more fully express how the program execution process should be accomplished to ensure appropriate additive investments. Specifically, the plan should:**

**a. Describe the factors to be used by the Military Departments and supply centers to evaluate the validity of potential candidates for additive investment.**

**DLA Comments.** DLA concurred and stated that the draft FY 2002 Implementation Plan contains the recommended revisions and has been reviewed by the Military Departments.

**b. Require that additive safety level requirements be based on consistent and up-to-date supply availability data.**

**DLA Comments.** DLA concurred with the recommendation but disagreed on what constitutes “up-to-date” supply availability data as well as that the supply data used in computing safety level increases were inconsistent and not current. DLA considered action on the recommendation completed. DLA stated that although it did not include the most recent quarter, the supply availability data were consistent in that it used the preceding seven quarters and that no reason existed to dispute the accuracy of DORRA data. The data for the calculation were as current as the DORRA analysts concluded the data needed to be, while still allowing for completing the analysis in a timely fashion before the beginning of the next fiscal year. DLA also stated that identification, selection, and computation processes are automated to an extent, but the processes have many time-consuming steps that can take as long as a month to complete each update cycle. Add the time inventory control points and the Military Departments need for reviews and DLA may not begin the procurement of the additive safety level quantities until well into the second quarter of the fiscal year. The benefit derived from using the latest quarter of supply availability data would be countermanded

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by the loss of time available in a fiscal year for the actual procurement of the additive items. DLA further stated that the draft report was deceptive because it did not address the degree to which the quantities varied in the analysis of FY 2000 DORRA data. Additionally, DLA stated that for FY 2001, DORRA also used data through the first three quarters of FY 2000, not simply data from FY 1999.

**Audit Response.** DLA comments were not fully responsive because our analysis indicated that the supply data used in computing safety level increases were inconsistent and were not current. The implementation plan contained no instructions on the time frame that supply data were to represent in determining safety level increases. We did not question the accuracy of DORRA data; we questioned the use of different and dated time frames to select supply data and compute supply availability rates. For the FY 2000 and FY 2001 safety level increases, DLA used four different timeframes to select supply data and compute safety level increases for four separate sets of items: none of those time frames included supply data for the quarter preceding the safety level increases. FY 2000 safety level increases made in January 2000 were based on supply data through June 1999; thus, the supply data were already 6-months old when safety levels were increased. Most FY 2001 safety level increases were made in October 2000 and were based on supply data through September 1999. Therefore, the supply data were 12-months old when the safety levels were increased. Some FY 2001 safety level increases made in October 2000 resulted from recommendations of the AIS working group and were based on supply data through June 2000; thus, the supply data were 3-months old when the safety levels were increased. Some FY 2001 safety level increases were made in February 2001 as a result of replacements and were based on supply data through September 2000; thus, the supply data were 4-months old when the safety levels were increased.

Computing safety level increases is an entirely automated process and, according to DORRA officials contacted during the audit, should take about 2 weeks to perform. The finding does not envision a multiprocess effort and subsequent reviews by inventory control points and the Military Departments, and so states. The objective of the AIS program is to increase the readiness of aircraft; the program's success can be best assured by spending the limited additive funds made available on the right items and in the right amounts. Taking an additional 2 weeks to recompute requirements and attain better accuracy would be in the interest of the AIS program and would not materially affect the annual procurement program of the Defense Working Capital Fund.

The use of more current supply data to compute safety level increases could have significantly changed how funds were invested, regardless of degree of variance to individual items. Our review of DORRA analyses showed that, by using supply data through FY 1999 instead of the fourth quarter of FY 1998 and the first three quarters of FY 1999, safety levels decreased by \$62.4 million for 1,824 items and increased by \$40.4 million for 919 items. In net terms, the items selected for \$178 million of investments would have received about \$22 million less. The significance of the analyses was the indication that supply performance was improving without the benefit of additional stock--a trend that was to continue through at least FY 2000. In an environment of improving supply performance, not using current supply data to compute increases in safety levels

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can result in overinvestment in items at the expense of items of greater need and an increased probability of exceeding safety level limitations. In addition, we recognize that DLA used data from two other analyses--one analysis of data that included the first three quarters of FY 2000 and another analysis of data that included all four quarters of FY 2000--for FY 2001 investments. However, the bulk of the investments were based on data from the FY 1999 analysis as reported to us by DLA. We request DLA reconsider its position and provide additional comments in response to the final report.

**c. Require regular reviews to determine whether additive safety levels continue to be appropriate. Establish a frequency for when and how often reviews should be made and the criteria for making necessary safety level adjustments and reinvesting funds.**

**DLA Comments.** DLA concurred and stated that the recommended action was completed.

**d. Establish a method for maintaining safety level increases that adheres to the DoD safety level limitation while recognizing and adjusting to changes in the supply system.**

**DLA Comments.** DLA concurred and indicated that the recommended action was completed. However, DLA disagreed with points in our discussion on safety level computations. DLA stated that the DORRA computer model determined the additive safety level quantity needed for each item so that a group of items was able to reach an 85-percent supply availability rate. If the computed additive safety level quantity exceeds the quantity allowed by the safety limitation, the additive safety level quantity is reduced. If the computed additive safety level quantity were lower than the safety level limitation, the additive quantity was not raised higher to equal the safety level limitation.

DLA changed its method of maintaining additive investments in SAMMS based on input from DORRA and the supply centers that showed that normal SAMMS variable safety level changes were being lost and having an adverse impact on items. DLA agreed that a consistent formula and method for determining the safety stock requirement throughout the life of the AIS program was needed and that it was being achieved in its current process. The criteria for adjusting safety stock additives should permit some flexibility to account for random fluctuations in demand and adjustments to AIS program items and additives should be infrequent so as to facilitate procurement executions.

**Audit Response.** DLA comments are responsive. Concerning DLA comments on the discussion of safety level computations, the formula in the draft report was not intended to literally represent the actual calculation DORRA used to determine additive investments. For each candidate item, DORRA initially calculated the variable safety level provided by SAMMS and the augmented level needed to achieve an 85-percent supply availability rate. However, because of the safety level limitation, not every item could receive the full augmented amount. To attain the collective 85-percent supply availability rate, DORRA increased the augmented amount for other candidate items to meet a supply availability rate of up to 100 percent. The effect of raising the supply availability rate was that the

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augmented safety level essentially represented the safety level limitation, which the formula illustrated in the draft report discussion.

The DLA method of maintaining additive investments did not regulate or change the amount of actual additive investments even though allowable additive investments that SAMMS provided had often decreased and less augmentation was needed to comply with the safety level limitation. That condition was clearly illustrated in our discussion of the third method DLA used to maintain additive investments. For 654 items the Defense Supply Center Richmond managed as of March 31, 2001, the third method provided for maintaining the additive investment as a fixed amount, not accounting for changes in the variable safety levels that should have been offset by decreases in the additive investments. Because the additive investment remained fixed, we determined that the additive amounts would have exceeded the safety level limitation by \$45.8 million.

**e. Establish a time frame for continuous program evaluation and a resolution process that includes a flag or general officer from each Military Department whenever problem elevation is needed.**

**DLA Comments.** DLA concurred and stated that the recommended action was completed.

**2. Approve and coordinate with the Military Departments the revised implementation plan.**

**DLA Comments.** DLA concurred and stated that the recommended action was completed.

## **Management Comments on Potential Monetary Benefits and Management Controls and Audit Response**

A summary of DLA comments on potential monetary benefits and audit response is in Appendix E. A summary of DLA comments on the management control weakness and audit response is in Appendix F.

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## Appendix A. Audit Process

### Scope

To review the effectiveness of the DLA investment strategy designed to improve supply support to aviation weapon systems, we took a random stratified statistical sample of consumable repair parts selected for increased safety levels as of March 20, 2001. DLA provided us with the database of consumable repair parts that were selected for increased stockage as of March 20, 2001. The database contained 11,945 items that were to receive additive funding for fiscal years 2000 through 2003. We sampled 180 of 6,400 items whose safety levels were increased during FY 2000 and FY 2001. The sample represented aviation repair parts used by each of the Military Departments and managed by each of the three Defense Supply Centers--Columbus, Ohio; Philadelphia, Pennsylvania; and, Richmond, Virginia. For each sampled item, we conducted interviews with item managers at the DLA supply centers. We also interviewed officials and obtained documentation that included background information and guidance from DoD, the Military Departments, and DLA headquarters. Information on the status of the AIS program (the implementation plan) was reviewed at the AIS program office at the Defense Supply Center Richmond. Information on the methodology and criteria used to select items for the AIS program was reviewed at DORRA. The documents we reviewed at DLA supply centers included demand histories, supply control records, transaction histories, and procurement histories dated from July 1999 through July 2001.

**General Accounting Office High-Risk Area.** The General Accounting Office has identified several high-risk areas in DoD. This report provides coverage of the Defense Inventory Management high-risk area.

### Methodology

To determine whether items selected for increased stockage still needed additive investment, we took a random stratified statistical sample of 180 of the 6,400 repair parts whose safety levels had been increased during FY 2000 and FY 2001. Those items were mostly categorized as Tier 1 and Tier 2 and targeted for \$320.2 million of additive investment. We judged our sample of 180 items as being increased an appropriate amount of stock to achieve an 85-percent or higher supply availability rate based on their supply position, as portrayed by stock control records or as related by item managers. We primarily concluded that an item warranted or did not warrant a safety level increase based on a review of transaction histories, back order statistics, procurement lead times, stock on hand, demands, and variable safety levels. Our conclusion on the appropriateness of potential additive investments was also influenced by an item's current acquisition method. We also considered the prescribed safety level limitation in determining whether a potential additive investment was warranted. In addition to our statistical sample, we also used available DLA records and computer analyses maintained by DORRA to make summary evaluations of changes in

supply availability and fluctuations in safety levels for items whose stockage levels were increased in FY 2000 and FY 2001.

**Universe and Sample.** DLA provided us with the database of consumable repair parts that were selected for increased stockage as of March 20, 2001. The database contained 11,945 items selected for additive investment in FY 2000 through FY 2003. The universe consisted of a database of 6,400 repair parts that had received additive safety level increases in FY 2000 and FY 2001. The repair parts were managed at three locations--the Defense Supply Center Columbus, the Defense Supply Center Philadelphia, and the Defense Supply Center Richmond.

**Sampling Purpose.** The purpose of the random stratified statistical sampling plan was to estimate the number and dollar value of repair parts and funds that were appropriately used to improve supply support to aviation weapon systems.

**Sampling Design.** We designed a random stratified statistical sampling plan, based on the total dollar value of the additive safety level of items. Stratum A consisted of 119 items that were valued greater than or equal to \$500,000. Stratum B consisted of 1,002 items that were valued greater than or equal to \$50,000 but less than \$500,000. Stratum C consisted of 5,279 items that were valued less than \$50,000. Items were randomly selected from each stratum without replacement. Thirty items were randomly selected from stratum A, 30 items were randomly selected from stratum B, and 120 items were randomly selected from stratum C.

**Sampling Results.** We derived the following statistical estimates.

	<u>Lower Bound</u>	<u>Point Estimate</u>	<u>Upper Bound</u>
Valid dollars	\$60,988,969	\$99,209,337	\$137,429,706
Valid items that required investment	2,826	3,375	3,923
Invalid dollars	\$71,994,831	\$111,648,879	\$151,302,927
Invalid items that required no investment	1,786	2,321	2,856
Invalid items that required reduced investment	363	704	1,045

We are 95-percent confident that the dollar value of items considered valid is between \$60,988,969 and \$137,429,706 and the number of items is between 2,826 and 3,923. We are 95-percent confident that the invalid dollars associated with items that required no investment are between \$71,994,831 and \$151,302,927 and the number of invalid items is between 1,786 and 2,856. We are 95-percent confident the number of items that required reduced investment is

between 363 and 1,045 in the database. The dollar amount of those items that required reduced investment could not be projected because we could not estimate the reduced dollar amounts. The results of our sample, by supply center, are shown in the following table.

	<u>DSCC</u>	<u>DSCP</u>	<u>DSCR</u>	<u>Total</u>
Appropriate Investment	18	24	41	83
No Investment Needed	12	6	49	67
Reduced Investment Needed	<u>4</u>	<u>5</u>	<u>21</u>	<u>30</u>
<b>Total</b>	<b>34</b>	<b>35</b>	<b>111</b>	<b>180</b>

DSCC Defense Supply Center Columbus  
DSCP Defense Supply Center Philadelphia  
DSCR Defense Supply Center Richmond

**Use of Computer-Processed Data.** We used computer-processed statistics and supply management information that came from SAMMS to determine audit sample selection and supply status. Although we did not perform a formal reliability assessment of the computer-processed data, we determined through discussions with item managers that an item’s supply status and contract method generally agreed with the information in the computer-processed data. We did not find errors that would preclude use of the computer-processed data to meet the audit objectives or that would change the conclusions in this report.

**Use of Technical Assistance.** Statisticians from the Audit Followup and Technical Support Directorate, Quantitative Methods Division, Office of the Assistant Inspector General for Auditing of the Department of Defense, developed the statistical sampling plan and selected the random sample for this audit.

**Audit Dates and Standards.** We conducted this economy and efficiency audit from March 2001 through February 2002, in accordance with generally accepted government auditing standards.

**Contacts During the Audit.** We visited or contacted individuals and organizations within DoD. Further details are available on request.

## **Management Control Program Review**

DoD Directive 5010.38, “Management Control (MC) Program,” August 26, 1996, and DoD Instruction 5010.40, “Management Control (MC) Program Procedures,”

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August 28, 1996, require DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

**Scope of the Review of the Management Control Program.** We reviewed the adequacy of DLA management controls over the AIS execution program. We also reviewed management's self-evaluation applicable to those controls.

**Adequacy of Management Controls.** As defined by DoD Instruction 5010.40, we identified a material management control weakness in the execution program for the aviation initiative. An implementation plan that would ensure that safety level increases were necessary for aviation repair parts was not implemented. The recommendations in this report, if implemented, will correct the material weaknesses and could result in funds put to better use of about \$111.6 million. A copy of this report will be sent to the senior official in charge of management controls for the Defense Logistics Agency.

**Adequacy of Management's Self-Evaluation.** DLA did not identify reviewing the AIS program as an assessable unit and, therefore, did not identify or report the material management control weaknesses identified by the audit.

## Prior Coverage

During the last 2 years, the General Accounting Office has issued five reports. General Accounting Office reports can be accessed on the Internet at <http://www.gao.gov>.

General Accounting Office Report No. GAO-01-772, "Army Inventory: Parts Shortages Are Impacting Operations and Maintenance Effectiveness," July 2001

General Accounting Office Report No. GAO-01-771, "Navy Inventory: Parts Shortages Are Impacting Operations and Maintenance Effectiveness," July 2001

General Accounting Office Report No. GAO-01-587, "Air Force Inventory: Parts Shortages Are Impacting Operations and Maintenance Effectiveness," June 2001

General Accounting Office Report No. GAO-01-472, "Information on the Use of Spare Parts Funding is Lacking," May 2001

General Accounting Office/NSIAD/AIMD-99-77, "Air Force Supply Management Action Create Spare Parts Shortages and Operational Problems," April 1999

## Appendix B. Additional Details on Items Selected for Review

To determine the effectiveness of the execution process, we took a random stratified statistical sample of 180 of the 6,400 consumable repair parts whose safety levels had been increased in FY 2000 and FY 2001. Items were categorized mostly as either Tier 1 or Tier 2 and were selected to receive \$320.2 million of additive investment funds.

**Need Additive Safety Level.** Of our sampled items, we determined that the safety level increase for 83 items was needed to improve the supply availability rate. A list of the items, arranged by the dollar value of the safety level increase, follows.

<i>Item</i>	<i>Nomenclature</i>	<i>Increase</i>	<i>\$ Value</i>
2840011469445	Blade, Turbine Rotor	2832	2,722,968.00
2840009927886	Rotor, Compressor	220	1,018,795.80
5995011684782	Cable Assembly	68	904,258.56
1560013184308	Parts Kit, Tunnel	36	612,000.00
6105001681287	Housing, Motor	114	398,544.00
1670012505468	Parachute Assembly	256	173,248.00
6150013495713	Cable Assembly	35	168,350.00
1560004182386	Cell, Fuel	10	146,819.40
6105009218635	Motor, Direct Current	173	141,860.00
5960011843229	Electron Tube	25	127,500.00
1680003044697	Ball, Universal	92	95,312.00
6695011523606	Transducer, Motional	71	73,627.00
5340014089943	Hinge, Butt	98	73,516.66
4710010443526	Tube, Assembly, Metal	83	59,345.00
6340005474861	Strut, Wiring Assembly	29	52,461.00
6610005804497	Pilot, Static Tube	14	42,868.00
1560005721247	Panel, Insulation	17	41,052.11
2835010362011	Air Valve Assembly	130	39,185.90
4820006012784	Valve, Drain	25	37,809.75
5306005365116	Bolt, Eye	202	33,241.12
2840000420038	Lining, Friction	139	31,553.00
5310011010188	Nut, Self-locking	1058	29,264.28
5985012539162	Antenna	13	28,041.00
2840002286303	Strut, Bearing	98	26,754.00
4730009429149	Restrictor, Fluid	26	25,585.04
5985014090660	Switch, Frequency	9	21,888.63
2995010582811	Control Segment	8	19,960.00

**Items That Needed Additive Investments (cont'd)**

<i>Item</i>	<i>Nomenclature</i>	<i>Increase</i>	<i>\$ Value</i>
5895004375677	Amplifier-power Supply	19	18,620.00
1650004693244	Housing, Center	5	16,500.00
5930008432366	Switch, Pressure	53	13,548.92
5310012374809	Nut	1407	14,646.87
5310011240481	Nut, Self-locking	6591	13,247.91
5330013487057	Seal, Nonmetallic	108	11,592.72
5985010834871	Attenuator, Variable	15	9,375.00
5330994251637	Seal Ring, Metal	24	9,185.28
5945010443344	Relay, Electromagnet	6	8,880.00
1560007596896	Rib, Actuator	5	8,702.50
1560997286706	Bracket, Structural	10	8,500.60
3040011403194	Shaft, Straight	40	7,924.80
1620011136074	Lock Ring Assembly	7	7,707.98
3110002770373	Cone and Rollers	516	7,254.96
1650010115814	Head, Linear Actuator	2	7,120.00
5305003545151	Screw, Tolerance	322	6,633.20
4730005584488	Plug, Disconnect	36	6,480.00
5977005034317	Holder Assembly	13	6,227.00
1680014245351	Grip Assembly	168	6,032.88
3110012163946	Bearing, Ball	39	6,027.45
1650006709359	Cylinder Assembly	98	5,679.10
1650011257219	Piston, Reservoir	6	5,613.72
1680003437660	Fitting Assembly	10	4,950.00
5895012092617	Detector, Frequency	5	4,575.00
3120007659939	Spacer, Turbine Shaft	20	4,375.00
1680010700971	Hook Assembly, Hoist	3	4,221.90
4710007388963	Tube, Oil Bearing	11	3,663.00
5305011051142	Screw, Tolerance	2400	2,712.00
5310003854028	Nut, Assembly	36	2,478.60
5340012372224	Bracket, Mounting	23	2,425.58
5330008494366	Gasket	44	2,115.08
5325002986559	Stud, Turn Lock	620	2,027.40
9535004488295	Sheet, Metal	1	1,686.94
5310004637561	Nut, Assembly	18	1,672.92
6220012466466	Panel, Indicating	5	1,421.50
2530008824784	Wheel, Pneumatic	41	1,350.95
4730010269141	Elbow, Tube to Hose	10	1,307.20
6150013479270	Cable Assembly	4	1,083.92
5330003382303	Seal	47	1,065.49
4820011159793	Valve, Relief Pressure	5	1,063.00
1560007373182	Clamp, Speed	17	901.00

**Items That Needed Additive Investments (cont'd)**

<i>Item</i>	<i>Nomenclature</i>	<i>Increase</i>	<i>\$ Value</i>
1730010826398	Shield, Aircraft	2	900.00
1670002496440	Latch Assembly	6	823.80
5306006708531	Bolt, Torsion	4	729.52
4730014445459	Adapter, Straight	25	725.00
2840011710878	Seal, Metallic	143	534.82
1560007770664	Bridge Assembly	1	402.65
5330005736842	Seal, Nonmetallic	24	398.64
5365012233631	Spacer, Sleeve	13	383.50
5340008834953	Clip, Spring Tension	1381	359.06
6220007646063	Lens, Light	6	346.20
1560008551723	Beam Assembly	2	330.44
5305012218679	Screw, Machine	10	240.00
5975007605436	Junction Box	26	132.86
5320004012461	Pin-rivet, Threaded	23	75.67
5340011210484	Clamp, Loop	1	6.87

**Need Reduced Safety Level.** For 30 of the sampled items, part of the safety level increase was unnecessary to achieve a higher supply availability rate or the revised safety level for the items exceeded the safety level limitation. The 30 items were included in our item projection but were excluded from our dollar projection because we could not estimate reduced dollar amounts. Although the 30 items had achieved an 85-percent supply availability rate, a portion of the additive investment was unwarranted. A list of the 30 items, arranged by the dollar value of safety level increase, follows.

<i>Item</i>	<i>Nomenclature</i>	<i>Increase</i>	<i>\$ Value</i>
1660002430392	Parts Kit, Regulator	149	2,956,669.58
2840000309221	Lining, Friction	186	2,640,013.32
2840012316096	Duct, Turbine	8163	2,085,728.13
2840011302767	Seal, Air Turbine	304	1,433,968.00
6685009616449	Thermocouple	4830	989,860.20
2840005058458	Support, Turbine	202	835,876.00
1560011327318	Tank, Fuel	99	782,100.00
1560002379347	Canopy, Movable	6	780,000.00
1560013257856	Web, Structural	32	720,512.00
2915011829346	Valve	97	691,125.00
2840014434080	Disk, Air Compressor	177	687,466.23
1560012773559	Skin, Aircraft	131	563,783.39
2840001281205	Nozzle, Turbine	799	511,360.00
2835012245834	Housing Assembly	191	315,690.53
2840000659057	Vane, Compressor	24	269,088.00
1620008214469	Lap Assembly, Valve	28	195,736.24

**Items That Needed Reduced Additive Investments (cont'd)**

<i>Item</i>	<i>Nomenclature</i>	<i>Increase</i>	<i>\$ Value</i>
5960010082177	Electron Tube	54	146,745.00
4320002489104	Pump Unit, Centrifuge	21	132,674.22
5365001102843	Nut, Compressor Seal	78	93,229.50
2995002340152	Bracket, Assembly	45	83,105.55
3010011914377	Drive Unit, Angle	19	60,857.00
5950006484965	Coil, Electrical	33	52,555.80
3120012153479	Bearing, Washer	7624	34,308.00
5340011983705	Bracket, Mounting	302	33,059.94
5306010044528	Bolt, Shoulder	1344	29,339.52
9535005962077	Sheet, Metal	15	27,599.70
1650012132221	Boot, Deicer	5	11,362.10
3110013980699	Cup, Tapered Roller	307	9,658.22
5307009483782	Stud Shouldered	1207	6,735.06
5310003678636	Washer, Key	154	1,966.58

**Need No Additive Safety Level.** For 67 of the sampled items, the safety level increase was either no longer needed to achieve an 85-percent or higher supply availability rate (50 items) or would have no effect on supply availability because the item delivery method (8) or supply status (2) had changed, or the production capability (7) remained limited. Further, for 21 of the items, the revised safety level also exceeded the safety level limitation. Additional details, by category of improved supply position, direct vendor delivery and prime vendor contracts, production capability, and supply status, and an example of why the items no longer needed increased safety level, follow.

**Improved Supply Position.** Fifty items had attained an 85-percent supply availability rate after they were selected for additive investment. The items were below the 85-percent supply availability rate when initially selected for additive investment. However, the supply position of the items had improved to as much as 100 percent at the time of our review. For example, the safety level for an access cover was increased by the equivalent of \$15,018 in January 2000. The increase was deemed necessary because the access cover had a supply availability rate below 85 percent. At the time of our review in April 2001, the access cover had attained a 100-percent supply availability rate. The potential additive investment of \$15,018 should have been allocated to more deserving aviation items. A list of the items, arranged by the dollar value of the safety level increase, follows.

<i>Item</i>	<i>Nomenclature</i>	<i>Increase</i>	<i>\$ Value</i>
2840013930453	Shroud, Fan	570	1,357,740.00
2835007690588	Wheel, Compressor	161	902,364.75
2915011232249	Valve	275	598,710.75
3040002399801	Piston, Linear	78	377,647.92

**Items With Improved Supply Position (cont'd)**

<i>Item</i>	<i>Nomenclature</i>	<i>Increase</i>	<i>\$ Value</i>
1560011327324	Tank, Fuel, Aircraft	26	172,120.00
1650013564617	Piston, Linear	60	103,348.20
4810003734992	Ring Assembly, Sleeve	180	89,100.00
1560011643901	Beam Assembly	47	81,765.90
5995012098852	Wiring Harness	23	73,604.37
1560010721235	Shell, Nose Assembly	24	49,282.56
6105011603223	Armature, Motor	81	42,228.54
1560009098475	Fairing	9	35,457.12
5925012508887	Circuit Breaker	25	34,423.00
1560002578461	Tube Assembly, Inlet	9	33,570.00
2835006769924	Shroud, Turbine Wheel	17	28,292.93
2840011848569	Sleeve	69	21,148.50
3110002710010	Bearing, Roller	233	19,758.40
2995000701839	Housing Assembly	59	18,172.00
2915004470467	Shield Segment, Heat	814	16,336.98
2840014172962	Deflector, Airflow	744	15,415.68
1560012700016	Cover, Access	10	15,018.10
2840006123814	Seal, Metallic	63	14,604.66
1560008613508	Tube Assembly	9	13,671.00
3120001722761	Bearing, Plain	363	11,735.79
6685000434140	Indicator, Pressure	3	7,371.00
3040008701641	Connecting Link, Rig	70	7,147.00
3040012046336	Cam, Control	23	6,656.43
1680010598125	Piston	38	4,873.50
1560013287233	Support, Structural	1	4,649.12
5306011628521	Bolt, Shear	195	2,622.75
2840000133422	Lining, Friction	169	2,535.00
2840013749594	Lock, Compressor	17	2,226.32
2915003965271	Seal, Fuel Nozzle	230	1,975.70
2840013280238	Can, Extension, Flame	21	1,612.38
5310012745663	Nut, Self-locking	351	1,368.90
5995011281298	Wiring Harness, Bran	11	1,127.39
6150010426353	Cable Assembly	1	758.00
5342013651861	Cap, Filler Opening	1	367.00
5306003174485	Bolt, Machine	105	361.20
2840003506982	Strip Wear, Nozzle	15	348.45
5365011853209	Spacer, Plate	16	292.32
5342003438845	Bracket, Fuel Drain	1	248.40
5320000313339	Collar, Pin-rivet	85	187.00
4720013545651	Hose, Preformed	2	161.58
5930011165267	Switch, Pressure	1	160.70
1560011213743	Support, Structural	1	148.56

**Items With Improved Supply Position (cont'd)**

<i>Item</i>	<i>Nomenclature</i>	<i>Increase</i>	<i>\$ Value</i>
4010011643934	Wire Rope Assembly	1	71.50
6210013231346	Filter, Indicator	2	42.40
3120013722735	Bearing, Sleeve	1	22.75
3120012214246	Bushing, Sleeve	1	8.90

**Direct Vendor Delivery or Prime Vendor Contracts.** Eight items were being supported by direct vendor delivery or prime vendors after they were selected for additive investments. For example, the safety level for a self-locking nut was increased by the equivalent of \$60,574 in January 2000. The increase was deemed necessary because the Government continued to supply the self-locking nut at a supply availability rate below 85 percent. In June 2000, the Defense Supply Center Columbus awarded a direct vendor delivery contract for the self-locking nut. The potential additive investment of \$60,574 should have been allocated to more deserving aviation items. A list of the items, arranged by the dollar value of the safety level increase, follows.

<i>Item</i>	<i>Nomenclature</i>	<i>Increase</i>	<i>\$ Value</i>
2840014364759	Vane Assembly	1141	799,932.28
1560004714117	Cover, Access	206	612,644.00
2840014364060	Vane Assembly	801	554,179.86
1560004858706	Cover, Fire Seal	393	365,490.00
4810012370112	Nut, Self-locking	18	60,573.78
3120012906494	Bearing, Plain Rod	37	56,412.42
1650006728013	Fuse, Hydraulic	18	18,293.04
6340012568141	Housing Assembly	1	359.29

**Production Capability.** Seven items had limitations on the quantities the contractors were producing and delivering at the time they were selected for additive investments. That meant that no additional stock could be provided regardless of the safety level increase. For example, the safety level for an electrical potted module was increased by the equivalent of \$741,035 in January 2000. The increase was deemed necessary because the module had a supply availability rate below 85 percent. At the time of our review in April 2001, the module had no stock on hand and a forecasted annual demand of 496 and back orders had reached 1,115. The module also had 1,535 either on contract or on a purchase request, including an additive safety level requirement of 675, to be delivered by October 2004. In effect, the additive safety level will provide no improvement in supply availability unless production is significantly increased. The potential additive investment of \$741,035 should have been allocated to more deserving aviation items. A list of the items, arranged by the dollar value of safety level increase, follows.

**Production Capability (cont'd)**

<i>Item</i>	<i>Nomenclature</i>	<i>Increase</i>	<i>\$ Value</i>
2915002215589	Parts Kit, Valve	1260	1,186,920.00
3110013597286	Bearing, Roller	491	829,790.00
5960011678796	Electron, Tube	1853	801,774.57
2925014427741	Module, Potted	675	741,035.25
1005012844042	Trailing Edge	55	613,907.25
3020012011347	Gear, Spur	31	510,815.83
5930013560125	Switch, Thermostatic	40	87,200.00

**Supply Status.** Two items became obsolete or were replaced by different items after they were selected for additive investment. For example, the safety level for an aircraft skin was increased by the equivalent of \$1,456,422 in February 2001. In November 2000, the Air Force had notified the Defense Supply Center item manager that the aircraft skin was being replaced. At the time of our review in April 2001, the aircraft skin still had a potential additive investment of \$1,456,422 that should have been allocated to more deserving aviation items. A list of the items, arranged by the dollar value of the safety level increase, follows.

<i>Item</i>	<i>Nomenclature</i>	<i>Increase</i>	<i>\$ Value</i>
1560013959222	Skin, Aircraft	26	1,456,442.00
5310011340750	Nut, Self-locking	61	34.77

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## Appendix C. Glossary

The definition of the supply terms used in this report follow.

**Additive Safety Level** - The quantity of materiel above the variable safety level provided by SAMMS. DoD 4140.1-R limits the safety level quantity to the quantity computed for the procurement lead time.

**Direct Vendor Delivery** - A contract vehicle under which customer orders are shipped directly to the customer.

**Procurement Lead Time** - The time interval from the date of the supply control study resulting in procurement action to the receipt of the first shipment in the supply system. Procurement lead time is comprised of three elements: administrative lead time, production lead time, and delivery lead time.

**Reorder Quantity** - The quantity of an item associated with the reorder cycle. The reorder quantity is equivalent to the product of the reorder cycle (in months) and the forecasted average monthly demand.

**Safety Level** - The quantity of materiel (in addition to operating stocks) required to permit continued operations in the event of variations above the mean of lead times or demands.

**Standard Prices** - The wholesale selling price of an item established to recover the cost of the item as well as the cost associated with buying, storing, and managing the item.

**Stratification Process** - A uniform portrayal of requirements and assets application that is a computer-generated, time-phased simulation of actions causing changes in the supply position; for example, procurement, repair, receipt, issue, termination, and disposal of materiel.

**Supply Availability Rate** - The percentage of requisitions completely filled when submitted to an inventory control point.

**Supply Position** - The ability of an item to meet forecasted demands at a given point in time, dependent on the quantities on hand and due in.

**Variable Safety Level** - A quantity of stock to be on hand to provide a predetermined degree of protection against items being out of stock. The level is based on probability principles and a realistic appraisal of the frequency of demands, reorder frequency, average order size, length of lead time, variability of lead time, and delivery schedule.

**Virtual Prime Vendor** - A contract vehicle under which a third party vendor functions as both a single source of supply and distribution on behalf of DLA.

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## Appendix D. Summary of DLA Comments on the Finding and Audit Response

The following is a summary of the DLA comments on the finding and discussion and our audit response to those comments.

**DLA Comments on the Finding.** DLA took exception to the report statement that 3,025 items in the AIS program population either no longer needed an additive safety level quantity or did not warrant their variable safety level augmented as much, to attain an 85-percent supply availability rate. DLA indicated that the safety level requirement cannot be determined as valid or effective based on the status of a particular procurement or a point in time but is designed to provide added protection over an extended period of time. DLA further stated that the safety stock required to achieve the 85-percent target availability goal is a statistical calculation that estimates the probability of an item being placed on backorder using specified criteria. The SAMMS variable safety level distributes safety stock over an inventory control point's population of items in a way that achieves the backorder goal in the most economic manner. Whether an item receives a SAMMS variable safety level in no way indicates the item's ability to achieve the 85-percent target.

DLA also stated that the audit incorrectly used anomalous items to extrapolate across the entire population of AIS program items and did not include in the audit sample any of the hundreds of items that DLA had already excluded from the program.

**Audit Response.** DLA comments mischaracterize the finding. Items were not selected for audit based on the application of variable safety levels but were selected based on the DLA criterion used in its study that items were below an 85-percent supply availability rate. DLA used 85 percent or more as the supply availability rate that aviation repair parts needed to achieve to improve readiness and to justify \$500 million for purchasing additional mission-critical parts and avoid backorders for those parts. The variable safety level of an item was a factor that DLA included in its formula for determining the funding required for items that needed to be augmented because those items were below its 85-percent criterion. We did not determine whether the variable safety level requirement that SAMMS computed was valid or effective for a point in time; we determined that the variable safety level was changing over time and that DLA should have reevaluated those changes to determine whether the \$500 million could be redistributed to other items that did not meet its 85-percent supply availability criterion. We also determined that the additive investment of items needed to be evaluated for other factors over time and found that funds could be redistributed based on an item's safety level limitation, supply status, acquisition method, and production capability.

DLA provided us with the AIS program database as of March 20, 2001, with 11,945 consumable repair parts that DLA selected for additive investment during FY 2000 through FY 2003. We randomly selected our sample from 6,400 repair parts that had additive safety level increases in FY 2000 and FY 2001. From the

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results of our random sample, we projected that DLA had augmented, or planned to augment, the variable safety level of 3,025 items that either did not meet the DLA selection and investment criteria, were already at or would exceed its safety level limitation, or would not benefit from additive investment. The sample results were statistically valid at a 95-percent confidence level for the 6,400-item population. Between November 2000 and February 2001, DLA excluded 438 items planned for investment in FY 2001 for essentially the same reasons that we estimated 3,025 additional items no longer warranted additive investment or warranted a reduced amount. The 438 items were not included in the AIS program database of 6,400 items that DLA provided to us on March 20, 2001, and had no effect on our sample results or projection.

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## Appendix E. Summary of DLA Comments on Potential Monetary Benefits and Audit Response

The following is a summary of DLA comments on potential monetary benefits identified in the draft report and our audit response to those comments.

**Comments on Funds Put to Better Use.** DLA did not concur with the projection of sample results that \$111.6 million of the AIS program funds could be put to better use. DLA did not agree with the extrapolation of the sample dollar values or the applicability of the classification of sample items to the entire population.

**Audit Response.** The projection that \$111.6 million in AIS program funds could be put to better use was based on a random stratified statistical sample that was used for the audit and the projection was sustained at a 95-percent confidence level. The sample was taken from a database of AIS program safety level increases in FY 2000 and FY 2001 that DLA provided us, as of March 20, 2001. The projection excluded the dollar amounts for 30 sample items that we concluded warranted reduction in the investment and 23 sample items that were above the safety level limitation but still needed augmentation to reach an 85-percent supply availability rate. In addition to the random stratified statistical sample, we reviewed DLA and DORRA computer reports that were available during our audit of AIS program safety level increases. An analysis of one DLA report dated March 31, 2001, indicated that, for those items managed by the Defense Supply Center Richmond in June 2001, about \$59.6 million of AIS program funds would have been invested either above the safety level limitation or in place of what should have been financed by the SAMMS variable safety level. Considering the results of our random stratified statistical sample as well the results of our separate analysis, we believe the projection that \$111.6 million of AIS program funds could be put to better use is still valid. We address additional DLA comments on our sample results in the following paragraphs.

**DLA Comments on Supply Availability Above 85 Percent for 50 Items.** DLA stated that the audit classification of items with a supply availability rate above 85 percent was not valid and could not be projected across the entire population of items. For FY 2000, 81 percent of all DLA-managed items with a variable safety level had a supply availability rate above 85 percent. Therefore, classifying items with a supply availability rate of 85 percent or greater as no longer needing their variable safety levels augmented was invalid in the context of all other items assigned a variable safety level. The judgment of whether a safety level requirement is valid or effective is not based on the status of a particular procurement action or point in time but rather on the need to provide protection against demand variability. Of the 50 items, 9 were excluded from the AIS program prior to receipt of the draft report and prior to obligation of any funds. The total dollar value of the nine items was \$2.65 million, or 63.5 percent of the funds tied to this category of items. Removing the nine items from this category would lower the point estimate by \$20.61 million to \$90.99 million.

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**Audit Response.** The audit classification of items above an 85-percent supply availability rate was valid and can be projected across the entire population of items in the AIS program for FY 2000 and FY 2001. We did not review all of the DLA-managed items and the assertion that, in FY 2000, 81 percent of the items with a variable safety level had a supply availability rate above 85 percent is irrelevant to the finding. DLA established the population of 6,400 items that were selected for AIS program funding using a criterion that those 6,400 items had a supply availability rate below 85 percent. In our random stratified statistical sample of 180 items from that population, we determined that 50 items attained at least a supply availability rate of 85 percent based on an item's stock availability performance, current stock position, and forecasted demands. All 50 sample items, whether funds had been obligated or not, were in the AIS program at the time of our review and, thus, were subject to the valid statistical projection.

**DLA Comments on Direct Delivery or Prime Vendor for Eight Items.** Generalizing the sampled items found supported by direct delivery or prime vendor across all items in the AIS program population is inappropriate. Of the items in this category, two were excluded from the AIS program prior to receipt of the draft report and prior to obligation of any additive funds. Three other items were on a C-5 prime vendor contract; however, the additive amounts were already obligated and all of the other items (263) on the C-5 contract were removed from the AIS program in February 2001. The additive amounts for another two items in the category were also already obligated and earmarked for reallocation once the additive level is receipted and issued. Removing seven of the eight items from this category would lower the point estimate by another \$22.85 million to \$68.14 million.

**Audit Response.** The audit extrapolation of items supported by direct delivery or prime vendor is valid and can be projected across the entire population of items in the AIS program. At the time of our review of sample items from March to June 2001, 197 items were still on the C-5 prime vendor contract programmed to receive AIS funding of \$9.3 million. All of the eight sample items, whether funds had been obligated or not, were in the AIS program at the time of our review and, thus, were subject to the valid statistical projection.

**DLA Comments on Production Limitation for Seven Items.** Generalizing the sample items found already at maximum production rates across all items in the AIS program population is inappropriate. Doing so would be inconsistent with DLA asset allocation methodology. In the DLA support hierarchy, safety level requirements are allocated applicable assets after backorders and, as such, provide immediate protection against demand variance during the procurement leadtime period. While the items may have had production limitations, in each case the production limitation exceeded the demand rate. Thus, no production constraints affected support. Removing the seven items in the category would lower the point estimate by another \$21.5 million to \$46.64 million.

**Audit Response.** The audit classification of items with production limitations is valid and can be projected across the entire population of items in the AIS program. The DLA comments center on asset allocation methodology and protection against demand variation but the finding addressed the distribution of AIS program funds in an efficient manner to improve near-time supply

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availability and readiness. Investing AIS program funds in items with production limitations will not speed up production capabilities and improve near-time supply availability or readiness. For the seven items in our sample, the additive investment will simply extend production contracts years in the future. No additional stock will be made available on an annual basis in the near term and, therefore, AIS program support would be inefficient and ineffective in improving supply availability or readiness related to those items.

**DLA Comments on Two Obsolete or Replaced Items.** Generalizing the sample items found obsolete or replaced across all items in the AIS program population is inappropriate. DLA has a proactive program that reviews AIS program items and removes any items coded (or future coded) as obsolete. The two items in the category were excluded from the AIS program prior to receipt of the draft report and prior to any investment of funds. Subsequent DLA reviews of AIS program items for obsolescence revealed no items received funds after they were identified as obsolete. Removing the two items in the category would lower the point estimate by another \$5.78 million to \$40.86 million.

**Audit Response.** The audit classification of items as obsolete or replaced is valid and can be projected across the entire population of items in the AIS program. The two items we identified as obsolete were not coded as such. The items were incorrectly coded and identified to us by item managers as scheduled for replacement. The DLA position that coded items were reviewed has no bearing on the finding. Both sample items, whether funds had been obligated or not, were in the AIS program at the time of our review and, thus, were subject to the statistical projection.

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## Appendix F. Summary of DLA Comments on Management Control Weakness and Audit Response

The following is a summary of DLA comments on the draft report management control weakness and our audit response to those comments.

**DLA Comments on the Implementation Plan.** DLA has incorporated changes to the FY 2002 Implementation Plan that address all of the draft report recommendations. However, it is incorrect in asserting that the initial (FY 2000) Implementation Plan was unavailable for much of the execution process. The execution process for any fiscal year occurs throughout the entire year and so that plan (completed in December 1999) was available throughout the remaining 9 months of the fiscal year. From the outset of the program, DLA established a working group that consists of representatives from the Military Departments, inventory control points, and DLA headquarters. The minutes of those meetings describe discussions that took place within the working group about how items were selected and how the Military Departments scrubbed potential investment items. The implementation plan was intended to be a high-level overview document, whereas the AIS program working group was to advise on the day-to-day intricacies of selecting items and maintaining the impetus of the program. Giving day-to-day advice and maintaining program impetus were accomplished despite the lack of a comprehensive implementation plan.

**Audit Response.** The execution process started before an implementation plan was available. The execution process consisted of: DORRA determining potential candidates for additive investment; the Military Departments and inventory control centers reviewing the potential candidates; the Defense Supply Center Richmond approving the final list of items for additive investment; DORRA computing safety level increases; and, the Defense Supply Center Richmond sending the safety level increases to the inventory control points for loading into SAMMS. The first four steps of the process were completed before the implementation plan was prepared in December 1999. Similarly, the first AIS working group meeting was not held until February 2000, which was after stock levels were already increased at the inventory control points. The working group meeting minutes did not contain advice on selecting items. Instead, issues concerning the selection and validation process were raised at the working group meeting that should have been resolved before the execution process began, and that possibly would have been resolved had a comprehensive implementation plan been prepared. The lack of a comprehensive implementation plan, endorsed by DLA headquarters, was a material management control weakness for ensuring the success of the \$500 million AIS program.

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## **Appendix G. Report Distribution**

### **Office of the Secretary of Defense**

Under Secretary of Defense for Acquisition, Technology, and Logistics  
Deputy Under Secretary of Defense (Logistics and Materiel Readiness)  
Under Secretary of Defense (Comptroller/Chief Financial Officer)  
Deputy Chief Financial Officer  
Deputy Comptroller (Program/Budget)

### **Department of the Army**

Auditor General, Department of the Army

### **Department of the Navy**

Naval Inspector General  
Auditor General, Department of the Navy

### **Department of the Air Force**

Assistant Secretary of the Air Force (Financial Management and Comptroller)  
Auditor General, Department of the Air Force

### **Other Defense Organizations**

Director, Defense Logistics Agency  
Commander, Defense Supply Center, Columbus  
Commander, Defense Supply Center, Philadelphia  
Commander, Defense Supply Center, Richmond

### **Non-Defense Federal Organization**

Office of Management and Budget  
National Security Division

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## **Congressional Committees and Subcommittees, Chairman and Ranking Minority Member**

Senate Committee on Appropriations  
Senate Subcommittee on Defense, Committee on Appropriations  
Senate Committee on Armed Services  
Senate Committee on Governmental Affairs  
House Committee on Appropriations  
House Subcommittee on Defense, Committee on Appropriations  
House Committee on Armed Services  
House Committee on Government Reform  
House Subcommittee on Government Efficiency, Financial Management, and Intergovernmental Relations, Committee on Government Reform  
House Subcommittee on National Security, Veterans Affairs, and International Relations, Committee on Government Reform  
House Subcommittee on Technology and Procurement Policy, Committee on Government Reform



# Defense Logistics Agency Comments



DEFENSE LOGISTICS AGENCY  
HEADQUARTERS  
8725 JOHN J. KINGMAN ROAD, SUITE 2533  
FORT BELVOIR, VIRGINIA 22060-6221

IN REPLY  
REFER TO J-3

APR 8 2002

MEMORANDUM FOR DoDIG

SUBJECT: DLA Response to DoDIG Draft Audit Report, "Aviation Investment Strategy Program", (D2001LD-0076)

Our response to the findings and recommendations of the subject report is attached. We agree with many of the recommendations to improve the overall process, and have already implemented some of them. However, we do not concur with the findings of potential monetary benefits or material control weakness.

We believe that there is a fundamental misunderstanding of the concept, purpose and computation of safety level on the part of the audit team. Furthermore, we believe that isolated, nonrepresentative cases found in the data sample were inappropriately extrapolated to the general population.

Finally, the draft report does not give due credit to the processes already in place to screen candidates before investing in additional safety level.

HAWTHORNE L. PROCTOR  
Major General, USA  
Director  
Logistics Operations

Attachment

Subject: Aviation Investment Strategy Program, Project No. D2001LD-0076,  
March 11, 2002

**DLA RESPONSE TO DODIG DRAFT AUDIT REPORT, "AVIATION  
INVESTMENT STRATEGY PROGRAM. (D2001LD-0076)**

**Finding:** The Aviation Investment Strategy program had merit and should continue, but improvements were needed in the execution of the program. Given the dynamics of the supply process and the severe constraints of its legacy automated supply system, the DLA faced a formidable task in mediating variable safety level imbalances in aviation repair parts. Since the Aviation Investment Strategy program began in September 1999 with selection of items for additive investment, the DLA has augmented the variable safety level of 6,400 items—the equivalent of \$320.2 million more than provided by the legacy system to achieve an aggregate 85 percent supply availability rate. The methodology and criteria used by the DLA to augment the variable safety level provided by the legacy system were sound; however, adequate assurance was not provided that the computed additive quantities remained appropriate for all items. As of July 31, 2001, a random stratified statistical sample of 180 items indicated that 3,375 (53 percent) of the 6,400 items selected for investment in FY 2000 and FY 2001 still warranted the augmented safety levels computed by the DLA but that the remaining 3,025 (47 percent) items either no longer needed an additive safety level quantity, or did not warrant their variable safety level augmented as much, to attain an 85 percent supply availability rate. As a result, we projected that \$99.2 million of the Aviation Investment Strategy program funds were potentially well invested and that \$111.6 million could be put to better use by investing in mission-critical items, other than those selected, that had insufficient safety levels that would improve supply availability and aviation readiness. (See page 4 for details.)

**DLA Comments: NON-CONCUR**

DLA takes exception to the DoDIG assertion that 3,025 items (47 percent) in the AIS population "either no longer needed an additive safety level quantity, or did not warrant their variable safety level augmented as much, to attain an 85 percent supply availability rate." Classifying items with a supply availability rate of 85 percent or greater as no longer needing their variable safety levels augmented is invalid in context of all other items assigned a variable safety level, because over 80 percent of such items assigned variable safety levels meet the 85 percent supply availability rate. Allocation of a safety level quantity is designed to provide protection against demand and lead time variances over an extended time horizon. The judgment of whether a safety level requirement is valid or effective is not based on the status of a particular procurement action or a point in time.

The DoDIG states that they determined whether an item warranted AIS additive safety level stock based on the item's supply position. They used transaction histories, backorder performance, procurement lead times, stock on hand, demands, and variable safety levels to assess the item's supply position. Once an item is "well" or achieves the 85 percent supply availability goal, the DoDIG contends the item no longer warrants additive stock. Additionally, the DoDIG assumes that if an item is "well" and has VSL, the item requires no additional investment in safety stock to maintain the 85 percent

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availability. Items that are "well" but receive no VSL might warrant additive investment, according to the DoDIG audit. This methodology demonstrates a fundamental misunderstanding of both the SAMMS VSL calculation and safety stock calculations in general. The safety stock requirement is not determined by the current supply availability rate. The safety stock required to achieve the 85 percent target availability goal is a statistical calculation that estimates the probability of an item being placed on backorder using specified criteria. SAMMS VSL distributes safety stock over an ICPs population of items in a way that achieves the ICP backorder goal in the most economical manner. Whether an item receives SAMMS VSL in no way indicates the item's ability to achieve the 85 percent target.

DLA forcefully disagrees with the DoDIG projection that as much as \$111.6 million dollars "could be put to better use". DLA's rationale are detailed extensively in the next section but two of the main points of rebuttal are that the DoDIG incorrectly used anomalous NSNs to extrapolate across the entire population of AIS NSNs (thus causing the point estimate to be much higher than it should be) and that the DoDIG sample did not include any of the hundreds of NSNs that DLA had already excluded from the program (which would indicate the proactive and ongoing nature of the DLA reviews).

**Potential Monetary Benefit and Management Control Weakness:** A material management control weakness in the execution program for the aviation initiative was identified. An implementation plan that would ensure that safety level increases were necessary for aviation repair parts was not implemented. The recommendations in this report, if implemented, will correct the material weaknesses and could result in funds of **\$111.6 million** put to better use.

**DLA Comments: NONCONCUR**

DLA has incorporated changes to the FY02 Implementation Plan that address all of the DoDIG's recommendations. However, there is an error in the DoDIG's assertion that the initial (FY00) Implementation Plan was "unavailable" for much of the execution process. The *execution* process for any fiscal year occurs throughout that entire year and so that plan (completed in December 1999) was available throughout the remaining nine months of that fiscal year. The FY00 AIS execution began in late December 1999; therefore the FY00 Implementation Plan was available for the entire execution year.

The FY00 and FY01 Implementation Plans do not contain specifics on how the PARIS model works and how the items are selected, although the FY01 plan does show how the ICPs and Services review the items. However, from the onset of the program, DLA established a working group consisting of representatives from the Services, the ICPs and DLA HQ. The minutes of those meetings describe discussions that took place within the working group on how items were selected, how the Services scrubbed potential investment items, etc. In the February 2000 working group session, DORRA gave a briefing that included the logic of the PARIS model and much of this same discussion was reiterated at each subsequent quarterly working group session. The Implementation Plan was intended to be a high level overview document, whereas the AIS Working

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Group was (and still remains) a working level unit whose function is to advise on the day-to-day intricacies of selecting items and maintaining the impetus of the program. This was successfully accomplished despite the lack of the comprehensive implementation plan that the DoDIG focused on.

Furthermore, the DoDIG report is inaccurate when it quotes the AIS fund distribution by fiscal year and tier (page 3).

The report indicates the following distribution of funds breakout:

FY 2001 (\$100 million)	FY 2002 (\$100 million)	FY 2003 (\$150 million)	FY 2004 (\$150 million)
Tier 1 engine items and Tier 1 non-engine items with long procurement lead times (parachutes, helicopter blades, landing gear)	Tier 2 and 3 engine items and remaining Tier 1 non-engine items with long procurement lead times	Tier 2 non-engine items and Tier 3 non-engine items with supply availability less than 50 percent	Remaining Tier 3 items

The actual yearly distribution of categories is as follows (differences in **bold**).

FY 2001 (\$100 million)	FY 2002 (\$100 million)	FY 2003 (\$150 million)	FY 2004 (\$150 million)
Tier 1 engine items and Tier 1 non-engine items with long procurement lead times, and parachutes, helicopter blades, landing gear, and radar	Tier 2 and 3 engine items and remaining Tier 1 non-engine items with long procurement lead times	Tier 2 non-engine items and Tier 3 non-engine items with supply availability less than 50 percent	Remaining Tier 3 items and NSO items

As stated previously, DLA does not concur with the DoDIGs projection that "\$111.6 million of the AIS program funds could be put to better use." DLA does not agree with the DoDIGs extrapolation of their sampled dollar values or the applicability of the classification of sample items to the entire item population. The DoDIG sampled 180 FY00 and FY01 NSNs and decreed that 67 items no longer needed additive safety level. Another 30 were deemed as not needing *as much* additive, and the remaining 83 were considered valid for the targeted additive quantity. Of the 67 items identified by the DoDIG as no longer needing additive safety level:

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1. "50 had attained an 85 percent supply availability after they were selected for additive investment". The additive on these 50 totals \$4.17million. Again, DLA takes exception to the audit classification and its applicability to the entire item population. In reviewing FY00 supply availability data on NSNs with a variable safety level, DLA found that 81 percent of NSNs had supply availability greater than 85 percent. Therefore, classifying items with a supply availability rate of 85 percent or greater as no longer needing their variable safety levels augmented is invalid in context of all other items assigned a variable safety level, because 81 percent of such items assigned variable safety levels meet the 85 percent supply availability rate. Allocation of a safety level quantity is designed to provide protection against demand variances. The judgment of whether a safety level requirement is valid or effective is not based on the status of a particular procurement action or point in time; rather it considers the effect of the requirement in providing protection against demand variability. *This audit classification is not valid and cannot be projected across the item population.* In fact, 9 of these 50 items were excluded from AIS *prior to receipt of the IG report* and prior to obligation of any funds against the AIS additive. The total dollar value of these 9 NSNs is \$2.65million, or 63.5 percent of the funds tied to this category of items. Removing just these 9 NSNs lowers the point estimate to \$90.99million.

2. "8 items were being supported by direct delivery or prime vendors after they were selected for additive investments". The additive on these 8 totals \$2.47million. Two of these NSNs, for an additive of \$0.61million, were excluded from AIS *prior to receipt of the IG report* and prior to obligation of any funds against the AIS additive. Three NSNs, for an additive of \$0.99million, are on the C5 VPV contract. There were 263 NSNs in the AIS program with an additive value of \$9.42million on this contract which were removed in February 2001 (prior to procurement of the additive). However, the additive safety level on the three NSNs remaining in AIS was already procured. DSCR made a decision, in coordination with the VPV program manager, to leave these items in AIS until receipt and issue of the additive quantity. Another two NSNs in this category are on a Contractor Furnished Material (CFM) contract with the USAF. DLA received notification of the CFM after AIS procurement was executed on these two items (\$1.35M), and they have been earmarked for reallocation once the additive level is received and issued. DLA was able to successfully avoid procurement on 8 FY00 NSNs (\$6.00M) and 4 potential FY02 NSNs (\$8.95M) tied to this CFM contract. These NSNs were identified and earmarked for reallocation of funds well in advance of the DoDIGs audit.

We may not agree as to whether these items should have been removed but, given that we identified and excluded all other like items, it is inappropriate to generalize these across all items in the AIS population. Removing seven of the eight NSNs in this category, in addition to the nine excluded in item 1 above, lowers the point estimate to \$68.14million.

3. "7 items had limitations on the quantities the contractors were producing and delivering at the time they were selected for additive investments. That meant that no

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additional stock could be provided regardless of the safety level increase". The total additive safety level on these seven NSNs is \$4.77million. While the items may have had production limitations, in each case the production capability exceeded the demand rate and as such there were no production constraints affecting support. The DoDIG finding is not consistent with DLA asset allocation methodology. In the DLA support hierarchy, safety level requirements are allocated applicable assets after backorders, and as such provide immediate protection against demand variances during the procurement lead time period. It is inappropriate to generalize these items across all items in the AIS populations because the conclusion is inconsistent with DLA asset allocation methodology. Removing the seven items in this category, in addition to those removed in items 1 and 2 above, lowers the point estimate to \$46.64million.

4. "2 items became obsolete or were replaced by different items after they were selected for additive investment". The additive safety level on these two NSNs totals \$1.45million. DLA has a proactive program to review AIS NSNs regularly and remove any items coded (or future coded) as obsolete. The two NSNs in this category were excluded from AIS prior to receipt of the audit findings and *prior to any investment of AIS funds on these items*. Given our regular reviews, it is inappropriate to generalize these items across all items in the AIS population. Subsequent reviews of AIS items for obsolescence revealed no items that received AIS funds obligation after the item was identified as obsolete. Removing these two items, in addition to those removed in items 1, 2 and 3 above, lowers the point estimate to \$40.86million.

The DoDIG states that "DLA recognized that the safety levels of items could be shifted to other items and, subsequent to our review, initiated corrective action." DLA takes strong exception to the DoDIGs assertion that the exclusion of these items was the direct result of the DoDIG audit. In fact, as stated earlier, DLA reviews the AIS items continuously and the identification of NSNs that are no longer appropriate for AIS investment is ongoing. A check of the dates of exclusion reveals that many of the items were excluded prior to the receipt of the DoDIG list of sample items. Furthermore, in **Appendix A, Table A-1**, the auditors list some data that purports to show the "portion of invalid dollars that DLA agreed with" and a similar list of invalid items that DLA "agreed with". In fact, DLA **does not** agree with these figures because DLA maintains that most of these NSNs are not suitable for extrapolation because they represent anomalous situations. The DoDIG assumes that since DLA excluded these individual items (connoting DLA agreement) that DLA also agrees to the DoDIGs extrapolation of these items across the entire population. As described extensively above, these NSNs were one-time situations; isolated cases that represent the sum total of all AIS-wide instances of the event. DLA researched and eliminated all other items related to the CFM and C5 VPV situations, and regularly reviews all items to identify other conditions (such as obsolescence) that would warrant removal from the program.

The DoDIGs use of extrapolated data goes only one way. When DLA identified items in the DoDIG sample that had already been excluded (the exclusions occurred subsequent to

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the beginning of the audit but prior to the release of the DoDIG population of sample NSNs) the auditors response was, "At the time of our review these NSNs were still in AIS... We concluded that the...NSNs should have been removed from AIS prior to our review." (Quotes drawn from NSN comments provided by the DoDIG to DLA). Thus, the DoDIG affords no recognition of DLAs continual review process, maintaining the position that DLA must catch every possible reason for exclusion prior to the item ever making it into the AIS program. Furthermore, since the DoDIG sample was obtained in March 2001 (rather than using the initial population of NSNs from December 1999), the auditors did not sample (or extrapolate from the sample) any of the hundreds of items that DLA excluded from AIS prior to March 2001.

**RECOMMENDATIONS:**

1. Direct the Defense Supply Center Richmond to revise the Aviation Investment Strategy implementation plan to more fully express how the program execution process should be accomplished to ensure appropriate additive investments. Specifically, the plan should:
  - a. Describe the factors to be used by the Military Departments and supply centers to evaluate the validity of potential candidates for additive investment.

**DLA Comments: CONCUR.** The draft FY02 Implementation Plan contains these revisions. The plan is currently out to the Services for review. Suspense date for Service concurrence/nonconcurrence is 5 April 2002. Target date for finalization of the FY02 Implementation Plan is 15 April 2002.

**Disposition:** Action is considered complete.

- b. Require that additive safety level requirements be based on consistent and up-to-date supply availability data.

**DLA Comments: PARTIALLY CONCUR.** DLA concurs with this recommendation as written, but we disagree on what constitutes "up-to-date" supply availability data.

In the **Computing Requirements** section, sub-topic of **Implementation Plan**, the audit report states that, "The implementation plan contained no instructions that would help ensure that any supply data used in computing safety level increases were consistent and current." That is inaccurate. Although the supply availability data did not include the most recent quarter, it was consistent in using the preceding seven quarters and there is no reason to dispute the accuracy of the DORRA data. In fact, the first paragraph of this document (Finding) contradicts the previous DoDIG assertion. In the Finding, the DoDIG writes, "The methodology and criteria used by the DLA to augment the variable

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safety level provided by the legacy system were sound". In short, the data for the calculations were as current as the DORRA analysts concluded that they needed to be, while still allowing for completing the analysis in a timely fashion prior to the beginning of the next fiscal year.

**Time Constraints** section, sub-topic of **Implementation Plan**. The DoDIGs position is that DLA should not select and execute items for investment until after the completion of the second base year. For example, this means that selection of FY02 items would not occur until after the full completion of FY01 (as previously stated, we currently use FY00 and the first three quarters of FY01 as the base data and statistical period for identifying the final FY02 candidate population). The DoDIG states that the "DORRA computations are automated and could be performed relatively quickly (within 2 weeks)". On the contrary, the identification, selection and computation processes are automated to a certain extent, but it is more of a process than just a computer program. It has many time-consuming steps and DORRA has confirmed that it normally takes a month to complete an update cycle. Add the time for the needed ICP and Service reviews to that, and it could be well into the second quarter of the new fiscal year before DLA could even begin procurement of the additive safety level quantities. Some of the Spring 2001 reviews that were conducted as preliminary preparation for FY02 took as long as four months to complete. *This would result in the ICPs loading additive safety level one quarter after computation of the additive.* So the benefit derived from using the latest quarter of supply availability data would be countermanded by the loss of time available for the actual procurement of the additive within the fiscal year. The DoDIGs own assertion that the Navy and Air Force were two months late in validating the FY02 items simply reinforces DLAs point that the PARIS run and the subsequent Center and Service reviews cannot be done quickly enough and thoroughly enough in the first quarter in order to enable DLA to load and subsequently obligate the allotted funds in that fiscal year. In addition, as the DoDIG itself notes, each new PARIS cycle would identify more/different items that would need Service/ICP review. Lastly, DORRA does not agree that adding that last quarter necessarily gives a better picture on what to invest in than what they use now.

**Materiality** section, sub-topic of **Implementation Plan**. The DoDIG report states that the computed additive investment would have changed for 2,743 of the 2,823 selected AIS items if DORRA had indeed re-run the PARIS analysis after the conclusion of the fourth quarter. This is deceptive because it does not address the degree by which the quantities changed (some go up a little while others go down a little). For example, when comparing the DORRA run that was used to load new AIS items in February 2001 to the October 2001 DORRA run, for items which had a safety level decrease of one unit, for 54 percent (34 out of 63) this decrease amounted to only 1-10 percent of the original safety level. For only 10 items (15.9 percent) did the decrease amount to as much as 50 percent. In fact, for all items, the percentage decrease in safety level value between the February 2001 DORRA run and the October 2001 DORRA run was only 4.3 percent (a decrease in value of \$6.59M compared against the February 2001 safety level value of \$150.4M for all DORRA candidates, and using identical prices so as to eliminate price as a factor (the percentage change is 3.4 percent when using actual prices)). So, the audit report's

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contention that items change “substantially” in response to quarterly movements in supply availability is a matter of definition and degree. Furthermore, the DoDIG errs when, in the second bullet, they state, “For FY 2001 investments, we also used two computer analyses prepared by DORRA to compare supply data available for all of FY 2000 to the time frame that DLA used through FY 1999 to compute the bulk of additive investments.” For *FY01*, DORRA used data through the first three quarters of *FY00*, not just data from FY99 as the DoDIG states.

**Disposition:** Action is considered complete.

- c. Require regular reviews to determine whether additive safety levels continue to be appropriate. Establish a frequency for when and how often reviews should be made and the criteria for making necessary safety level adjustments and reinvesting funds.

**DLA Comments:** CONCUR

**Disposition:** Action is ongoing. ECD: 31 May 2002

- d. Establish a method for maintaining safety level increases that adheres to the DoD safety level limitation while recognizing and adjusting to changes in the supply system.

**DLA Comments:** CONCUR, with comments

DLA concurs with this DoDIG recommendation and has already held a meeting with ICP representatives to resolve the issue. However, the DoDIG audit report contains a factual error concerning how DORRA calculates the additive safety level. The report contains a formula that purports to describe how DORRA calculated the additive safety level quantity for each NSN. This occurs in both the **Process** section and in the **Maintaining Safety Level Increases** section, sub-topic of **Implementation Plan**. However, the formula given by the DoDIG is incorrect (as confirmed by DORRA). The PARIS model determines the additive safety level quantity needed for each NSN that would allow the group of items to reach 85 percent. If that additive quantity exceeds the quantity allowed by the Super Reg cap then the additive quantity is reduced to the cap (as happens in most cases). However, if the additive computed by PARIS is lower than the Super Reg cap then that quantity is retained – it is not then raised even higher to equal the cap (as the DoDIG formula states). The additive is the lesser quantity of the PARIS-calculated amount and the Super Reg cap.

The audit report also states that, “DLA has twice changed its method of maintaining additive investments in SAMMS- - essentially to discount actual supply position changes and perpetuate the same additive investment.” This is not accurate. DLA changed its approach based on input from DORRA and the Centers. The method was changed

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because normal SAMMS VSL changes were being lost and AIS did not want to have an adverse impact on its NSNs.

The report also cites DLA for being inconsistent in the way DLA selects and calculates safety levels, stating that, "The approach DLA initially used to select and calculate safety level increases within the safety level limitation should have remained consistent as supply positions changed." DLA agrees that we need to maintain a consistent formula and method for determining the safety stock requirement throughout the life of this initiative, and feel we have done that in our method of calculating the additive itself. The method we use should and does identify the frequency of safety stock review (and this information will be added to the FY02 Implementation Plan). However, the criteria for adjustment of safety stock additives should permit some flexibility to account for random fluctuations in demand. Frequent review and adjustment of AIS items and additives will make the program unnecessarily difficult to execute the procurement aspects of the initiative.

**Disposition:** Action is ongoing. ECD: 15 June 2002

- e. Establish a time frame for continuous program evaluation and a resolution process that includes a flag or general officer from each Military Department whenever problem elevation is needed.

**DLA Comments:** CONCUR

**Disposition:** Action is ongoing. ECD: 15 April 2002

2. Approve and coordinate with the Military Departments the revised implementation plan.

**DLA Comments:** CONCUR

**Disposition:** Action is ongoing. ECD: 15 April 2002

## **Team Members**

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