

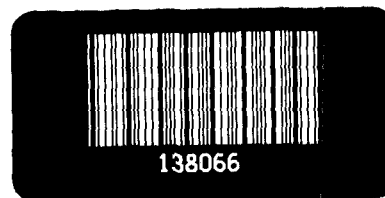
GAO

United States General Accounting Office
Report to Congressional Requesters

March 1989

NAVY SUPPLY

Questionable Decisions Increased Initial Spares Costs for AV-8B Aircraft



National Security and
International Affairs Division

B-222859

March 2, 1989

The Honorable Pete Wilson
United States Senate

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

As requested by Senator Wilson, we reviewed the Navy's initial provisioning policies and practices for the AV-8B aircraft program. This report is one in a series related to the effectiveness of defense logistics.

New Navy aircraft entering the fleet need to have enough spare parts; however, if too many spare parts are purchased too early, they may become obsolete or unneeded. Purchasing parts for a new weapon system to meet the first 2 years of service requirements is known as "initial provisioning." We reviewed the AV-8B aircraft program because this program has relatively recent initial spares requirements and accounts for \$689 million of the \$4.4 billion the Navy budgeted for initial spares between fiscal years 1985 and 1988.

Results in Brief

Although Department of Defense (DOD) guidance states that initial provisioning should be provided through a cost-effective approach, we found that the Navy's Aviation Supply Office (ASO) did not follow this guidance when placing orders for AV-8B spares for three principal reasons. First, ASO provided formulas for calculating initial requirements that followed the DOD guidance, but the AV-8B section adopted a minimum buy policy that authorized purchases for every type of spare regardless of the outcome of the requirements formula. Second, in some cases ASO did not consider prior orders when placing subsequent orders. Third, ASO increased spare parts orders due to contractor-imposed minimum order requirements. Internal controls were not in place to focus the attention of Navy managers on these matters. Our findings are summarized in the following sections and are discussed in more detail in appendix I.

Purchases Exceed Requirements

We examined selected purchasing actions for AV-8B parts, totaling \$2.2 million. We found that almost 10 percent (\$203,000) was spent for spare parts that were not likely to be required during the AV-8B's initial years of service. For example, ASO purchased two reaction control ducts at

\$14,652 each, even though the outcome of the requirements formula suggested that none needed to be stocked. Neither of these ducts have been used.

Contractor minimum order requirements combined with the AV-8B section's minimum buy policy and failure to consider prior orders resulted in the accumulation of large stocks of AV-8B spares that exceeded current needs (long supplies). For 10 high value items, we found 7 in this category with \$2.5 million worth of spares in excess of current needs. For example, ASO's calculations showed that no cylinder assemblies were needed. However, three assemblies costing \$22,950 each were ordered because of the minimum buy policy. The order was subsequently increased to 22 assemblies because that was the minimum order the contractor would accept. At the time of our review, 21 of these assemblies valued at \$481,950 exceeded the current needs.

Improvements Are Needed

ASO's initial provisioning practices relative to establishing an AV-8B minimum buy policy, considering available assets, and ordering contractor-imposed minimum requirements deviated from DOD guidance on providing initial supply support through a cost-effective approach. Internal controls, however, were not in place to surface these deviations to Navy managers. Such controls are essential elements of effective inventory management. When properly implemented, they provide reasonable assurance that resources are used in accordance with applicable laws, regulations, and policies and that situations that deviate from current standards are reported.

Naval Supply Systems Command officials said they were unaware of the minimum buy policy established by the AV-8B section because it was internal to ASO and that they did not agree with this practice. Higher level ASO officials also said they were unaware of this practice. This lack of awareness emphasizes the need for reporting systems that tell top managers when resources are not being applied in accordance with the DOD policy.

Requirement computations for initial spares are supposed to reflect the best engineering judgment of those responsible for the aircraft. Adopting minimum buy policies that call for routinely buying more than the calculated requirements increases the risk of buying more spares than will be needed. In order to comply with the DOD guidance, we believe ASO should normally buy the calculated requirements. Deviations should only be permitted on a case-by-case basis when it can be shown that

special circumstances exist. Internal controls should be in place that will provide information to top managers on the number and value of the deviations being approved.

ASO attributed the failure to consider available assets in determining order quantities to inadvertent errors or omissions and contract processing problems. In our opinion, checks and balances are needed to avoid errors and problems of this nature in the future.

Reducing or eliminating minimum order requirements imposed by contractors can be a difficult task. However, as a minimum, when contractors impose these requirements, ASO needs to aggressively negotiate reductions with contractors and seek alternative sources for the spares. If unsuccessful, ASO should assess how essential the item is before ordering quantities that are larger than the computed requirements. This assessment involves determining if an item is essential¹ in carrying out a military mission or maintaining a high level of readiness.

This would help ASO decide whether to agree to minimum order requirements set by contractors. Items that could cause a loss of mission capability could be ordered at higher levels while items that had no effect on mission capability would not have to be ordered. We discussed this matter with Naval Supply Systems Command officials and they agreed that mission essentiality data would provide inventory managers with a useful tool in evaluating contractor-imposed minimum order requirements.

Recommendations

We recommend that the Secretary of the Navy direct the Commander, Naval Supply Systems Command, to ensure that ASO and other supply organizations comply with the DOD policy on minimizing initial provisioning costs. Specifically, we recommend that the Commander take steps to ensure that

- appropriate mechanisms are established to assure upper level management that policies are being followed or if not, why not;
- only the number of spares calculated as needed by the requirements formula are ordered unless it can be shown that special circumstances justify larger quantities;

¹In a January 1988 report entitled *Navy Supply: Economic Order Quantity and Item Essentiality Need More Consideration* (GAO/NSIAD-88-64), we recommended that the Navy use mission essentiality in determining safety level requirements. DOD agreed with the recommendation and stated that full capability to use essentiality within the Navy will be available when automated data processing modernization efforts are completed in the 1990 time frame.

- spares already on hand and on order are considered in determining current order quantities; and
- efforts are made to reduce or eliminate contactor minimum order requirements to the extent possible; also, before larger quantities than are currently needed are ordered, consideration is given to whether an item is essential to the mission capability of a weapon system.

Agency Comments

DOD generally agreed with our findings and recommendations (see app. II). DOD stated that ASO will use requirement review boards, budget execution reviews, internal audits, and inventory management refresher training courses to provide upper level management assurance that policies are being followed and vulnerability to excessive provisioning costs is minimized. DOD also stated that the Naval Supply Systems Command will focus attention on minimizing vulnerability by making annual reviews, assessments, and certifications under its management control review program.

DOD agreed that the Navy should only buy quantities as determined by requirement formulas unless special circumstances warrant deviations. In November 1988, the Navy's inventory control points were directed to reiterate DOD policies and procedures on requirement determinations. DOD stated that this action and the actions taken in response to our other recommendations should preclude any future recurrence of the AV-8B situation. According to DOD, the AV-8B minimum buy policy was never authorized and no longer is in effect in the AV-8B section. It also stated that the minimum buy policy was not in effect elsewhere in ASO or at the Ships Parts Control Center, the Navy's inventory control point responsible for ship material.

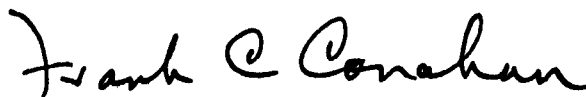
DOD stated that several checks and balances (such as requirement review boards and internal audits) are now in place or planned to avoid future errors in considering spares already on hand and on order. Also, Navy automated data processing modernization (resystemization) efforts, scheduled for implementation in fiscal year 1990, will include the capability for automated consideration of available assets when computing initial provisioning requirements.

DOD stated that ASO will aggressively negotiate to decrease contractor minimum order quantities and that item mission essentiality codes are scheduled for incorporation in the supply data base in conjunction with the resystemization effort. In addition, the Navy's inventory control points are being requested to review existing controls and procedures

for responding to contractor minimum order requirements. The Naval Supply Systems Command will notify each inventory control point by April 30, 1989, if any changes to procedures and controls are necessary.

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

This report was prepared under the direction of John Landicho, Director, Navy Issues. Other major contributors are listed in appendix III.



Frank C. Conahan
Assistant Comptroller General

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Abbreviations

ASO	Aviation Supply Office
DOD	Department of Defense
GAO	General Accounting Office
NAVSUP	Naval Supply Systems Command

Initial Provisioning for the AV-8B Aircraft

The Naval Supply Systems Command (NAVSUP) administers the Navy's supply system and provides supply management policies and procedures to its inventory control points. The Aviation Supply Office (ASO) is the Navy's inventory control point for aviation material. As such, it is responsible for deciding how many aviation spare parts are needed. ASO uses precise processes in determining how much stock is needed for initial provisioning, replenishment and peacetime operations, and mobilization for war. This report addresses initial provisioning stock, those parts used to support an aircraft during the first 2 years it is in the fleet.

Initial provisioning is designed to provide spares until there is a requisitioning history from which relatively accurate forecasts of future demands can be made. At the end of this initial period, the normal replenishment process begins. To determine how many initial spares are required, ASO relies on information such as contractor estimates, engineering judgments and, if available, past experience with similar aircraft. From this information, failure or wearout rates, flying hours, maintenance cycles, and number of user locations are developed for use in making requirements computations.

Major objectives of the provisioning process are to (1) sustain programmed operations by assuring the timely availability of spare stocks at the operating organizations and at the maintenance and supply activities and (2) provide this support at the least possible cost. ASO budgeted about \$4.4 billion for initial provisioning material between fiscal years 1985 and 1988, as shown in table I.1. Of this amount, \$689 million was for the AV-8B aircraft.

**Table I.1: Initial Provisioning Budgets
Between 1985 and 1988**

Dollars in millions	
Fiscal year	Amount
1985	\$1,545.0
1986	1,015.4
1987	940.7
1988	885.3
Total	\$4,386.4

Objectives, Scope, and Methodology

Our objectives were to evaluate whether the Navy, in line with Department of Defense (DOD) guidance, followed the proper policies for determining requirements for initial spares for the AV-8B aircraft and whether it bought more or less aviation material than was estimated to be

needed. Between February and October 1988, we held discussions and collected information at the Office of the Secretary of Defense, NAVSUP, and ASO. We reviewed DOD guidance on provisioning initial spares and the Navy's implementing policies, procedures, and practices for determining requirements. We selected the AV-8B aircraft for review because of the relative recency (1984 to 1988) of its requirements for initial spares and the amount of the funds budgeted for these spares.

To evaluate the Navy's process for determining initial spares requirements, we took a two step approach. As a first step, we surveyed an ASO list of items excess to current needs that had been ordered but not received. We examined 10 AV-8B high value items from this list to determine the reasons ASO ordered this stock and if the reasons were proper or questionable. As a second step, to determine the extent of the problems identified in the initial 10 items, we selected another 50 items for review from a list of all items (5,423) peculiar to the AV-8B. We determined that 38 of the 50 items had been purchased and that contracts for the remaining 12 items had not yet been awarded. For the 38 items that were purchased, we analyzed the requirement computations and the data ASO maintains on the available inventory to determine whether the purchases were reasonable at the time ASO made them. We did not consider the 12 remaining items because the Navy later could decide not to purchase them.

In conducting our work, we used the same computer programs, reports, records, and statistics the Navy uses to manage inventories, make decisions, and determine requirements. We did not independently determine their reliability.

We performed our review in accordance with generally accepted government auditing standards.

More Investment in Initial Spares Is Being Made Than Is Necessary

Although DOD guidance states that initial provisioning should be provided in a cost-effective manner, we found that ASO did not follow this guidance when placing orders for AV-8B spares for three principal reasons. First, ASO provided formulas for calculating initial requirements that followed the DOD guidance, but the AV-8B section head adopted a minimum buy policy that authorized purchases for every type of spare regardless of the outcome of the requirements formula. Second, in some cases ASO did not consider the current inventory or prior orders when placing subsequent orders. Third, ASO increased spare parts orders due to contractor-imposed minimum order requirements.

We determined the reasonableness of ASO's purchasing actions on 38 AV-8B peculiar spares valued at \$2.2 million. We found that actions taken on 16 of the 38 items, valued at \$203,000, were questionable. Of the 16 questionable actions, 11 involved ASO's policy to override calculated requirements in order to buy a set minimum. In the other five actions, the current inventory was not considered.

We also examined 10 other AV-8B items where ASO had stock on order in excess of that currently needed. For 7 of the 10 items, ASO ordered larger quantities than were computed as being required — 6 because of minimum order requirements imposed by contractors and 1 because the current inventory was not considered.

The results of our tests are summarized in table I.2 and discussed in greater detail in the following sections.

Table I.2: Summary of Test Results

	Number
60 Items selected	
Contracts not yet awarded	12
Computed requirements ordered or procurement actions not questioned	25
Actions questioned:	23
AV-8B minimum order policy (11)	
Available assets not considered (6)	
Contractor-imposed requirements (6)	
Total	60

AV-8B Policy Authorized Larger Than Necessary Purchases

The Navy decides the amount of inventory it should maintain based on the expected failure rate of a part as estimated by the manufacturer of the aircraft. Using this information, ASO makes requirement calculations and places orders for items.

In October 1984, the head of the ASO section responsible for AV-8B items issued a policy memorandum that authorized buying more spares than the requirement calculations indicated were needed. This "minimum buy" policy was instituted to avoid shortages experienced with other aircraft and, for some items, to take advantage of favorable exchange rates. The policy authorized buying every item, even when a need was not projected. Table I.3 shows the guidance that the section used for its minimum buy actions.

**Appendix I
Initial Provisioning for the AV-8B Aircraft**

**Table I.3: Minimum Buy Actions
Authorized by AV-8B Section**

Unit cost of item	Buy quantity
\$ 0 - \$1,000	15
\$ 1,001 - \$3,000	10
\$ 3,000 - \$5,000	5
\$ 5,000 - \$10,000	3
\$10,000 and over	see section head

The following examples illustrate the minimum buy actions.

- ASO computed a requirement for 10 pieces of pipe insulation (NSN 1560-01-184-9850) costing \$162 each. On the basis of the minimum buy policy, ASO ordered 15 pieces from British Aerospace Public Limited Company of Surrey, England. Before the minimum buy policy was in effect, ASO had ordered nine pieces of pipe insulation from the same firm. In September 1987, 12 pieces in the inventory were not likely to be needed over the next 2 years; i.e., they were in long supply. (Determinations as to what is needed are made periodically. In some cases, parts already could have been issued and, in other cases, requirements could have changed. Long supply amounts used in this report are based on the dates when the periodic determinations were made.)
- ASO's computations determined that there was no initial need for a reaction control duct (NSN 1680-01-172-3441) costing \$14,652 each. On the basis of the minimum buy policy, ASO ordered two ducts from British Aerospace. In September 1987, neither of the two ducts had been issued and one was not likely to be needed in the next 2 years; i.e., it was in long supply.
- ASO computed a requirement for one access cover (NSN 1560-LL-NDHA395) costing \$1,667. ASO ordered three covers from McDonnell Douglas Corporation. In September 1987, none of the three covers had been issued and two exceeded ASO's requirements forecast through September 1989. Although table I.3 indicates that the minimum buy quantity would have been 10 covers had the policy adopted by the AV-8B section been followed, the decision in this case was based on the total cost of buying three covers (\$5,001) rather than the cost of an individual item (\$1,667).

Stocks on Hand and Due in Were Not Considered in Purchasing Decisions

Knowledge of the stocks on hand and due in is needed to accurately determine order quantities, cancel unneeded purchase actions, and respond in a timely manner to customer needs. Several of the questionable actions we reviewed involved situations where the stocks on hand and due in were not considered in deciding how many spares to order.

For example, ASO computed an initial requirement for 20 gauze washers (NSN 1620-01-162-9329) costing \$13 each but ordered 50 washers because the manufacturer of the item, Dowty Rotol Limited of Gloucester, England, refused to fill orders of less than 50. Without considering the first washer order, ASO ordered another 50 washers when it calculated a requirement for 23 more washers. In this case ASO computed a total requirement of 43. If ASO had considered its available stock from the first order, it would not have needed to place the second order. In September 1987, 61 washers were in excess of current needs; i.e., they exceeded the requirements expected through September 1989.

For another item, fitting assemblies (NSN-1650-01-172-3432), costing \$5,329 each, ASO's calculations showed that there was no initial requirement, but because of the minimum buy policy ASO ordered three assemblies from Parker Hannifin Corporation. Due to problems in awarding the contract to Parker Hannifin, ASO awarded a contract for three assemblies to McDonnell Douglas Corporation, the prime contractor for the AV-8B. However, ASO did not cancel the order with Parker Hannifin. In September 1987, none of the six assemblies had been issued and five were in excess of current needs.

Contractor Minimum Order Requirements Resulted in Unnecessary Purchases

The AV-8B minimum buy policy and the failure to consider available stock (on hand and on order) were not the only reasons ASO ordered more parts than were needed. Minimum order requirements imposed by contractors further compounded the problem.

NAVSUP officials said that manufacturers throughout the contractor community imposed minimum order requirements on the Navy. When ASO ordered small quantities for the AV-8B, firms either said they did not want to produce the item or substantially discounted prices for larger orders.

The following examples illustrate the extent order quantities for the AV-8B increased as a result of contractor minimum order requirements.

- ASO determined that there was no initial requirement for cylinder assemblies (NSN 1620-01-201-6110) costing \$22,950 each. On the basis of its minimum buy policy, ASO ordered three assemblies from Dowty Rotol. The contractor countered by requiring a minimum order of 22 assemblies. ASO accepted Dowty's proposal. In summary, a computed requirement for \$0 was increased to \$68,850 based on the minimum buy policy and further increased to \$504,900 because of the contractor's minimum order requirement.
- ASO's computations showed no initial requirement for piston assemblies (NSN 1620-01-167-0668) costing \$20,070 each. On the basis of its minimum buy policy, ASO ordered three assemblies from Dowty Rotol. However, Dowty's minimum order requirement was 15 assemblies. Therefore, ASO increased its order to 15. In this case, a computed requirement for \$0 was increased to \$60,210 based on the minimum buy policy and further increased to \$301,050 because of the contractor's minimum order requirements.

Ordering Policies Have Resulted in an Inventory Larger Than Is Currently Needed

Buying more than computed requirements or subsequent changes in these requirements can result in the accumulation of stocks that exceed current needs (long supplies). To get a better insight into why items in the Navy's inventory were in excess of current needs, we selected items for review from an ASO listing of excess items. At that time the AV-8B had excess parts valued at \$30 million. From the list we reviewed 10 high cost items with excess parts valued at \$3.7 million. We determined that the causes for these parts being excess to current needs were the same as those responsible for ASO's ordering quantities in excess of calculated requirements, i.e., not considering prior orders or stocks on hand and contractor minimum order requirements.

We questioned ASO's orders on 7 of the 10 items because they were for more quantities than were computed as required, resulting in \$2.5 million of stock that was not likely to be needed in the next 2 years.

The following examples illustrate the cases found where ASO ordered parts, even though the Navy already had determined that the parts were not currently needed.

- In the previously discussed case where ASO ordered 22 cylinder assemblies, even though it had computed no initial requirement, 21 assemblies were in excess of current needs at the time of our review.

- In the case where ASO ordered 15 piston assemblies, even though it had computed no initial requirement, 13 assemblies were in excess of current needs at the time of our review.
- ASO computed a requirement for 14 motors (NSN 6105-01-175-9060) and later computed an additional requirement for 34 motors. ASO combined the requirements and ordered 48 motors from Airscrew Howden Limited of Surrey, England. Various contracting problems prevented ASO from negotiating a contract award with this firm. Therefore, ASO decided to award a \$142,324 contract for 34 motors to McDonnell Douglas Corporation, the prime contractor for the AV-8B aircraft. However, ASO did not terminate its efforts with Airscrew Howden, and in October 1986 it awarded a \$95,078 contract for 48 motors to this firm. In December 1986, ASO made efforts to terminate the contract for the 48 items ordered from Airscrew Howden but was unsuccessful. Later, ASO reduced its requirements and in March 1987, 76 motors exceeded ASO's requirements forecast through September 1989. In September 1987, the requirements again changed and 70 motors valued at \$187,200 exceeded current needs.

Maintaining Higher Than Necessary Levels of Initial Spares Has Other Disadvantages

DOD policy is to minimize the investment made in initial spares. Although high levels of initial spares can contribute to improved support, there are potential adverse consequences of high stock levels. The costs of storing and maintaining the stock may be high. Beside these costs, there is a cost associated with using money that could have been used for another purchase or not spent at all.

Also, a large inventory is in danger of becoming outdated and parts may either require costly modifications before they can be used or be totally unusable. For example, the configuration of the AV-8B's nose gear changed four times in 5 years due to engineering and design changes. ASO computed a requirement for 12 retractable nose landing gears (NSN 1620-01-201-6154) costing \$121,145 each. ASO placed an order for the 12 gears with Dowty Rotol. Subsequently, due to severe corrosion problems, the service life of the gear was reduced from 7,000 aircraft landings to 2,000 landings and emergency safety modifications were required. ASO cut its original order from 12 units to 3 units and ordered 9 replacement gears that contained the required safety modifications. These circumstances in this example demonstrate design modifications that may be required before initial spares are used.

Comments From the Department of Defense



PRODUCTION AND
LOGISTICS

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301-8000

February 9, 1989

(L/SD)

Mr. Frank C. Conahan
Assistant Comptroller General
National Security and International
Affairs Division
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "NAVY SUPPLY: Questionable Decisions Increased Initial Spares Costs for AV-8B Aircraft," dated December 15, 1988 (GAO Code 394260), OSD Case 7857.

The Department generally agrees with the report. Some items initially procured for the AV-8B aircraft were purchased in quantities that exceeded requirements. The GAO acknowledged that in some cases contractor minimum buy requirements severely restricted the Department's ability to purchase items in the quantities deemed appropriate; however, in other cases, the Department failed to consider assets in the current inventory or on order when computing requirements. Implementation of a minimum buy policy for spares for the AV-8B program further contributed to the situation.

While the Department generally concurs with most of the draft report, the Department does not concur with the implication that the minimum buy policy in effect for the AV-8B program was authorized by the Navy's Aviation Supply Office, or that it was applicable to other Aviation Supply Office supported programs. While the Department acknowledges that the policy deviated from DoD guidance to obtain initial provisioning support at minimum cost, the issuance of the policy was an isolated case not practiced elsewhere at the Aviation Supply Office. The policy was never authorized, nor is it in effect today.

Several improvements have been made at the Aviation Supply Office that are designed to preclude this situation from recurring. Internal review boards are convened to review procurements at specified dollar values above designated signature authority to

Appendix II
Comments From the Department of Defense

ensure that the procurement represents prudent use of resources. In addition to routinely auditing buys over \$2 million, procurements of less than \$2 million are also now being randomly audited. Inventory management refresher courses were conducted in FY 1988, and are scheduled again in FY 1989, to educate working level personnel on DoD initial provisioning, requirements determination, and procurement policy. The DoD objective of minimizing initial provisioning costs has been, and will continue to be emphasized, both through the courses and in reissuance of Naval Supply System Command policy to the Inventory Control Points. Finally, Navy plans for Resystemization in FY 1990 include the capability for automated consideration of on hand and on order assets when computing initial provisioning requirements.

The Department suggests the above internal management controls constitute sufficient safeguards against the situation from recurring. The specific AV-8B minimum buy policy was an isolated situation and is being separately addressed and resolved. This problem, therefore, does not warrant additional attention as a significant material control issue.

The enclosure provides the detailed DoD comments on the subject report findings and recommendations. The DoD appreciates the opportunity to comment on the draft report.

Sincerely,



Merle Freitag, MG, USA
Military Deputy/ASD(P&L)

Enclosure

Appendix II
Comments From the Department of Defense

GAO DRAFT REPORT - DATED DECEMBER 15, 1988
(GAO CODE 394260) OSD CASE 7857

"NAVY SUPPLY: QUESTIONABLE DECISIONS INCREASED INITIAL SPARES COSTS
FOR AV-8B AIRCRAFT"

DEPARTMENT OF DEFENSE COMMENTS

* * * * *

FINDINGS

FINDING A: Aviation Supply Office Policy Authorized Larger Than Necessary AV-8B Spares Purchases. According to the GAO, DoD guidance states that initial provisioning of spare parts should be provided at the least possible cost. The GAO found, however, that the Navy Aviation Supply Office (ASO) did not follow this guidance when placing orders for the AV-8B aircraft. The GAO found that, as a result, almost 10 percent of the \$2.2 million spent for selected purchases it examined were not likely to be required during the initial years of the AV-8B's service. The GAO identified three principal reasons why the ASO did not follow this guidance. First, the GAO found the AV-8B section adopted a minimum buy policy that authorized purchases for every type of spare, regardless of the requirements. The GAO explained that the Navy decides the amount of inventory it should maintain based on the expected failure rate of a part, as estimated by the aircraft manufacturer. The GAO reported that, using this information, the ASO then makes requirement calculations and places orders for items. The GAO found, however, that in October 1984, the ASO head of the AV-8B section issued a policy memorandum authorizing the buying of more spares than the requirement calculations indicated were needed. The GAO noted this "minimum buy" policy was instituted to avoid shortages and to take advantage of favorable exchange rates. The GAO reported that the policy authorized buying every item, even when a need was not projected. The GAO discussed several examples illustrating these minimum buy actions and noted that 11 of 16 questionable procurements it found involved this ASO policy. The GAO concluded that minimum buy policies calling for routinely buying more than the calculated requirements increases the risk of buying more spares than will be needed. The GAO further concluded that, except in special circumstances, the ASO should normally buy the calculated requirements. (pp. 1-4, pp. 12-16/GAO Draft Report)

ENCLOSURE

Now on pp. 1 to 3 and 9 to
11.

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DOD RESPONSE: Partially concur. The Department agrees that the minimum procurement procedure implemented by the AV-8B section at the ASO during the initial provisioning of the AV-8B increased the risk of buying more spares than needed. This was not, however, ASO policy as indicated by the GAO. The AV-8B minimum procurement procedure was an isolated case, never authorized, and is no longer in effect in the AV-8B section. The minimum buy procedure was not in effect elsewhere in the ASO, nor at the Navy's Ships Parts Control Center (SPCC), the Navy's other major Inventory Control Point.

FINDING B: The Current Inventory And Prior Orders Sometimes Not Considered In Purchasing Decisions. The GAO cited, as a second reason why the ASO did not follow the DoD initial provisioning guidance, that in some cases the ASO did not consider the current inventory or prior orders when placing subsequent orders. According to the GAO, knowledge of the stocks on hand and due in is needed to accurately determine order quantities, cancel unneeded purchase actions, and respond in a timely manner to customer needs. The GAO found that of 38 purchasing actions it reviewed, five were questionable because the current inventory was not considered before orders were placed. The GAO noted that the ASO attributed the failure to consider available assets in determining order quantities to inadvertent errors or omissions and contract processing problems. The GAO concluded that checks and balances are needed to avoid errors and problems of this nature in the future. (p. 2, p. 4, p. 13, pp. 17-18/GAO Draft Report)

DOD RESPONSE: Concur. Failure to consider assets on hand or on order in computing the pre-material support date provisioning requirements was a manual oversight. Several checks and balances are now in place or planned to avoid future errors. Requirement Review Boards (RRBs) are convened to approve procurements (as well as repair or termination actions) of specific dollar values to ensure that the buy is in consonance with applicable policy and guidelines and represents an appropriate use of resources. Additionally, the ASO conducts a 100 percent audit of all procurements over \$2 million and now performs random audits for procurements under \$2 million. Navy Resystemization plans are now being developed that will provide for complete automation of computed provisioning quantities and integration of Interim Contractor Supply Support (ICSS) assets to afford a more disciplined asset/requirements profile during the initial provisioning process. These Resystemization plans, scheduled for implementation in FY 1990, will provide an automated method of considering contractor assets and other available items when

Now on pp. 1, 2, 10, and 12.

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computing initial requirements, thus reducing the risk of oversight to a minimum and enhancing the ability to make optimum use of resources. (See the DoD response to Recommendation 3.)

FINDING C: Contractor Minimum Order Requirements Resulted In Unnecessary Purchases. The GAO cited contractor imposed minimum order requirements as a third reason that the ASO did not follow DoD initial provisioning guidance. The GAO reported that, according to Naval Supply System Command officials, manufacturers throughout the contractor community imposed minimum order requirements on the Navy. The GAO found that, when the ASO ordered small quantities for the AV-8B, firms either said they did not want to produce the item or substantially discounted prices for larger orders. The GAO cited several examples that resulted in increased AV-8B order quantities as a result of contractor minimum order requirements. The GAO also found that, of 10 AV-8B items it examined where the ASO had stock on order in excess of that currently needed, 6 were because of minimum order requirements imposed by contractors. The GAO acknowledged that reducing or eliminating minimum order requirements can be a difficult task. The GAO concluded, however, that as a minimum, the ASO needs to aggressively negotiate reductions with contractors and seek alternative sources for the spares. The GAO further concluded that, if unsuccessful in these negotiations, the ASO should assess how essential the item is before ordering quantities that are larger than the computed requirements. The GAO noted items that could cause a loss of mission capability could be ordered at higher levels, while items with no effect on mission capability would not have to be ordered. (p. 2, p. 5, p. 13, pp. 18-19/GAO Draft Report)

DDP RESPONSE: Concur. The Department agrees that contractor minimum order quantities should be aggressively decreased or eliminated when possible through competition. In the case of the AV-8B, however, because the program's initial research and development were performed by a foreign country, additional restrictions were placed on the United States. The Memorandum of Understanding between the United States and the United Kingdom was designed to protect the British industrial base and insure data rights for participating British firms. Consequently, many items on the AV-8B remain sole source. The ASO, however, will aggressively negotiate to decrease contractor minimum order quantities. The Department also concurs that an item's essentiality is a worthy consideration in assessing responses to contractor minimum order quantities. The Item Mission Essentiality Code (IMEC) is scheduled for incorporation in the Navy Supply data base in conjunction with the Resystemization effort.

(See the DoD response to Finding B.) The IMEC, however, should not be considered the only criterion upon which to make a procurement decision; other relevant factors, including readiness concerns, weapon system program expectations, and design stability should also enter into the decision making process.

FINDING D: Ordering Policies Have Resulted In An Inventory Larger Than Currently Needed. The GAO also examined ten other AV-8B items (valued at \$3.7 million) where the ASO had stock on order in excess of that currently needed. The GAO found that the causes for these excesses were the same as those that caused the ASO to order quantities in excess of calculated requirements--i.e., not considering prior orders or stocks on hand and contractor minimum order requirements. The GAO noted that seven of the ten items were for more quantities than were computed as required, resulting in \$2.5 million of stock that was not likely to be needed in the next two years. The GAO discussed several examples where the ASO ordered parts that the NAVY had already determined were not needed. The GAO pointed out that there are several disadvantages of maintaining higher than necessary levels of initial spares, including the costs of storing and maintaining the stock, the cost associated with using the money that could have otherwise been used for other purposes, and the danger that the parts could become outdated before they can be used. The GAO concluded that the larger than necessary inventory is another indication that improvements are needed in ASO provisioning practices. (pp. 2-3, p. 13, pp. 22-23/GAO Draft Report)

DOD RESPONSE: Partially concur. The Department concurs that improvements were needed in the AV-8B section purchasing practices. The Department does not agree, however, that these same improvements are needed in overall ASO provisioning practices. As stated in the DoD response to Finding A, the AV-8B minimum procurement policy was an isolated case--not in effect in other programs at the ASO or elsewhere in the Navy. The practice was not authorized and is no longer in effect.

FINDING E: Need For Internal Controls To Surface Deviations To Navy Managers. The GAO found that internal controls were not in place to inform Navy managers that the ASO initial provisioning practices deviated from DoD guidance. The GAO observed that such controls are essential elements of effective inventory management. The GAO further observed that, when properly implemented, the internal controls provide reasonable assurance that resources are used in accordance with applicable laws, regulations and policies, and that

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situations that deviate from current standards are reported. According to the GAO, both Naval Supply System Command and higher level ASO officials said they were unaware of the minimum buy policy established by the AV-8B section. The GAO concluded that this lack of awareness emphasizes the need for reporting systems that tell top managers when resources are not being applied in accordance with DoD policy. The GAO further concluded that internal controls should be in place to provide information to top managers, such as the number and value of deviations being approved. (pp. 3-5/GAO Draft Report)

DOD RESPONSE: Concur. A Vulnerability Assessment and Management Control Review was conducted during FY 1988 for the functional category of Weapon System Support and its attendant requirements determination cycle. Controls are in place at the ASO to provide reasonable assurance that applicable policy and guidelines are being followed and that the procurement represents an appropriate use of resources. Command Requirement Review Boards (RRBs) are convened to review and approve procurements of specified dollar values greater than designated signature authority at subordinate levels. (See DoD response to Finding B.) Internal audits are conducted for 100 percent of all procurements exceeding \$2 million and now random audits are performed for procurements under \$2 million. In FY 1988 the ASO developed and completed inventory management refresher courses in requirements determination and procurement procedures. This effort is intended to reiterate DoD policy regarding initial provisioning practices to working level personnel. These courses will be updated and provided again in FY 1989. In addition to the above, the plans for Resystemization of the Inventory Control Points will provide added internal controls to the initial requirements determination process by providing automated consideration of contractor and other on hand or on order assets. (See DoD response to Finding B.)

RECOMMENDATIONS

RECOMMENDATION 1: To ensure that the ASO and other supply organizations comply with the DoD policy on minimizing initial provisioning costs, the GAO recommended that the Secretary of the Navy direct the Commander, Naval Supply System Command to take steps to ensure that appropriate mechanisms are established to assure upper

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level management that policies are being followed, or if not, why not. (p. 6/GAO Draft Report)

DOD RESPONSE: Concur. A Vulnerability Assessment and Management Control Review of the functional area of Weapon System Support and its attendant requirements determination event cycle was conducted at the ASO during FY 1988. (See the DoD response to Finding E.) Existing controls identified include Requirements Review Boards, budget execution reviews, internal audits, and continual inventory management refresher training courses. These controls are considered reasonable to provide upper level management assurance that vulnerability to excessive provisioning costs are minimized. The Naval Supply System Command will continue to focus attention to minimizing vulnerability through the Command's Management Control Review Program, to include annual reviews, assessments, and certifications.

RECOMMENDATION 2: To ensure that the ASO and other supply organizations comply with the DoD policy on minimizing initial provisioning costs, the GAO recommended that the Secretary of the Navy direct the Commander, Naval Supply System Command to take steps to ensure that only the number of spares calculated as needed by the requirements formula are ordered, unless it can be shown that special circumstances justify larger quantities. (p. 6/GAO Draft Report)

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DOD RESPONSE: Partially concur. The Department concurs that the Navy should only buy items in quantities as determined by requirements formula, unless special circumstances warrant deviations. As discussed in the DoD responses to Findings A and D, however, the actions of the AV-8B section did not reflect ASO policy. The AV-8B situation was an isolated event, and the minimum buy policy was not, and is not, the practice at other ASO program offices. The Naval Supply System Command will continue to comply with DoD policy, as contained in DoD Instruction 4140.42 and guidance for requirements determination. Navy Inventory Control Points were directed to reiterate these policies and procedures locally in November 1988. Other actions, as discussed in the DoD responses to Recommendations 1, 3 and 4, should also preclude any future recurrence of this situation.

RECOMMENDATION 3: To ensure that the ASO and other supply organizations comply with the DoD policy on minimizing initial provisioning costs, the GAO recommended that the Secretary of the Navy direct the Commander, Naval Supply System Command to take steps

to ensure that spares already on hand and on order are considered in determining current order quantities. (p. 6/GAO Draft Report)

DOD RESPONSE: Concur. Navy Resystemization plans are being developed to provide for the complete automation of computed provisioning assets and requirements to afford a disciplined asset/requirement posture during provisioning, thus minimizing oversight and inapplicable investment. (See the DoD response to Finding B.) The targeted implementation for this effort is FY 1990. This design in the Resystemization effort incorporates Department policy to consider on hand and on order assets when computing initial requirements.

RECOMMENDATION 4: To ensure that the ASO and other supply organizations comply with the DoD policy on minimizing initial provisioning costs, the GAO recommended that the Secretary of the Navy direct the Commander, Naval Supply System Command to take steps to ensure that efforts are made to reduce or eliminate contractor minimum order requirements to the extent possible. The GAO further recommended that, before larger quantities than are currently needed are ordered, consideration be given to whether an item is essential to the mission capability of a weapon system. (p. 6/GAO Draft Report)

DOD RESPONSE: Concur. Aside from aggressive negotiation and competition alternatives (see the DoD response to Finding C), Navy Inventory Control Points will be requested to review existing controls and procedures for responding to contractor minimum order requirements. Such a review will involve considering whether criteria for assisting Inventory Control Point personnel in the assessment of contractor offers are necessary to warrant an exception to the existing guidance of DoD Instruction 4140.42. Criteria to be considered include item essentiality, as well as cost benefits balanced against design stability, future end item program direction, and readiness concerns. The Item Mission Essentiality Code is scheduled for incorporation in the Navy Supply Data Base in conjunction with the Resystemization effort, and will assist in this endeavor. (See the DoD response to Finding C.) Inventory Control Points will be requested to identify their local criteria by March 30, 1989. The Naval Supply System Command will notify each Inventory Control Point by April 30, 1989, if changes to procedures and controls are necessary.

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Major Contributors to This Report

**National Security and
International Affairs
Division, Washington,
D.C.**

John Landicho, Director, Navy Issues, (202) 275-6504
Donna Heivilin, Associate Director
James Murphy, Assistant Director

**Philadelphia Regional
Office**

Edward Fossler, Evaluator-in-Charge
George Surosky, Site Senior

United States
General Accounting Office
Washington, D.C. 20548

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