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Report to the Secretary of Defense

October 1996

AVIATION REQUIREMENTS

DOD Should Reassess the Marine Corps' Helicopter Modernization Decision

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GAO

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

National Security and
International Affairs Division

Aviation Requirements: D.o.D Should Reassess the Marine Corps' Helicopter Modernization Decision

B-274610

October 30, 1996

The Honorable William J. Perry
The Secretary of Defense

Dear Mr. Secretary:

We have completed our review of the Department of Defense's (DOD) efforts to reduce the types and numbers of helicopters in its inventories. Our objective was to determine whether the services are taking advantage of opportunities to increase commonality of helicopters within DOD. Generally, we found the services are taking action to reduce numbers and types of helicopters. The purpose of this letter is to convey our concern about the Marine Corps' plans to modernize its fleet of UH-1 (Huey) helicopters.

Background

In recent years, DOD has encouraged the services to use more of the same types of aircraft. According to DOD officials, greater commonality should result in infrastructure savings in areas such as training and program management. In keeping with DOD's goal for greater commonality, Navy officials informed us that the Navy plans to replace its aging logistical support helicopter fleet with a derivative of the Army's Blackhawk. This derivative is similar to helicopters already in the Navy's fleet. The Air Force plans to piggyback on other services' procurements of Blackhawk derivatives. The Marine Corps, on the other hand, evaluated buying a Blackhawk helicopter derivative but has decided instead to upgrade approximately 100 of its Huey utility helicopters at a total program cost of $975 million,[1] or about $9.8 million per upgrade.

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Active and reserve Marine Corps squadrons currently use the Huey utility helicopter to provide, among other things, airborne control and coordination, aeromedical evacuation, and search and rescue. Although the Huey has been used by the Marine Corps for over 20 years and is nearing the end of its useful life, the Marine Corps believes it must keep its Huey utility helicopter fleet viable until the 2020 time frame, when a joint utility aircraft replacement program is anticipated.

Results in Brief

In deciding to modernize its fleet of utility helicopters, the Marine Corps did not adequately consider the economic benefits of increased

[1]All cost estimates in this report reflect constant fiscal year 1996 dollars.

commonality that could be achieved by buying an alternative utility helicopter like the Blackhawk. The Marine Corps evaluated a Blackhawk derivative and found it to be a desirable alternative to the upgraded Huey, but it concluded that the up-front procurement costs would be a major impediment and the support costs would be too high.

Our analysis shows that purchasing the Blackhawk derivative may be the more cost-effective alternative for DOD. A May 1996 DOD study of the alternatives shows that the life-cycle cost of the Blackhawk derivative is $200 million more than the Huey upgrade, and a September 1996 DOD study determined that the procurement acquisition cost of the Blackhawk derivative would be about $450 million more than the Huey upgrade. However, our evaluation indicated that if DOD were to increase the total annual buy of Blackhawk derivatives, as much as $717 million in research and development and procurement savings could result. These savings could be used to offset the Marine Corps' increased procurement and life-cycle costs.

DOD, Navy, and Marine Corps Have Not Considered the Economic Benefits of Alternatives to Modernizing the Huey

DOD, the Navy, and the Marine Corps have not conducted an in-depth analysis of the economic benefits of commonality for the Marine Corps' utility helicopter modernization program. Moreover, the Navy and the Marine Corps do not plan to conduct such an evaluation. In its May 1996 cost-effectiveness study addressing Marine Corps utility aircraft options, DOD noted that increasing commonality could result in cost savings, but it did not do an analysis to determine those savings.

DOD planned to analyze the benefits of commonality in the utility and attack helicopter areas, and the preliminary results were scheduled to be available in February 1997. In commenting on a draft of this report, DOD noted that it had not yet funded the commonality study; therefore, it has not been started. In the meantime, DOD has scheduled its Huey upgrade program Milestone II decision—the decision to proceed with the engineering and manufacturing development phase—for October 1996. The Marine Corps' program represents a major modernization of its utility helicopter fleet, which benefits from the Marine Corps' Cobra modernization by sharing common components with the Cobra, according to Marine Corps officials.

The Marine Corps evaluated a Blackhawk derivative for its utility helicopter mission and found it to be a desirable alternative but concluded it would be too costly to buy and logistically support. For example, Marine

Corps officials said that procuring a new aircraft creates a logistical burden because it would have to bear the cost of (1) training maintenance personnel to work on the new aircraft and (2) increasing the number of maintenance personnel for each helicopter squadron by 36.

A May 1996 DOD study shows that the 20-year life-cycle cost for the Blackhawk derivative is $200 million more than the Huey upgrade—$3.7 billion versus $3.5 billion respectively. The analysis, however, shows that the Blackhawk derivative may require only 12 additional maintenance personnel per squadron; therefore, the maintenance burden may not be as great as that estimated by the Marine Corps. The analysis also shows that production costs are within $300 million—the Blackhawk alternative costing about $3 million more per aircraft to procure. DOD updated its procurement acquisition cost estimate in September 1996 and increased the alternative costs to about $4.5 million more per aircraft to procure for a total difference of about $450 million.

Purchasing Blackhawk Derivatives May Be a More Cost-Effective Alternative

Purchasing additional Blackhawk derivatives may be the more cost-effective modernization option for DOD because increasing the annual buy could decrease (1) the procurement cost of the Navy's planned helicopter buy as much as $670 million and (2) the Marine Corps' research and development costs by about $47 million. These savings could be used to offset the procurement and life-cycle costs the Marine Corps would incur with a Blackhawk derivative.

The Navy plans to buy 134 Blackhawk derivatives to replace its aging logistical support helicopter fleet. It currently anticipates spending about $15.8 million per aircraft at a peak production rate of 9 aircraft a year for its initial buy of 39 aircraft. The Navy would like to increase its buy to 18 aircraft per year, and if allowed to do so, the cost per aircraft would decrease about 18 percent, or about $2.8 million, according to the Navy program office. This would result in a decrease of about $375 million in the total procurement cost. In addition, if DOD were to increase servicewide procurement of this aircraft to 36 per year, the cost per aircraft, according to the Navy program office, would decrease by $5 million, and the Navy would therefore save about $670 million. If DOD used the savings to offset the Marine Corps' funding requirements, the Marine Corps could buy the Blackhawk derivative.

If the Marine Corps were to buy a Blackhawk derivative, it would save $137 million in research and development funding, which could also be

used to help offset procurement costs for the alternative aircraft. The May 1996 DOD study showed research and development costs for the new aircraft are significantly less than for the upgraded Huey—$35 million versus $172 million, respectively. However, according to the Marine Corps, not all of this may be available because the cost of the Cobra modernization program will increase by about $90 million if the Huey upgrade program is canceled. Even with an estimated $90 million increase in the Cobra program, about $47 million could be available to help offset the procurement and life-cycle costs needed for the alternative aircraft.

Recommendations

In view of DOD's goal of increasing common aircraft among the services and achieving associated savings, we recommend that you (1) direct DOD's Office of Program Analysis and Evaluation to conduct an in-depth analysis of the economic benefits of increased utility helicopter commonality and (2) consider the results of the commonality study and information in this report in DOD's future deliberations on the Marine Corps' helicopter modernization options. If the study and other available data demonstrate that potential savings are sufficient to offset the Marine Corps' increased costs, we recommend that you consider using these savings for a Marine Corps Blackhawk derivative buy.

Agency Comments

DOD concurred with our recommendations. However, regarding our recommendation to consider potential savings as funding for the Marine Corps buy, DOD pointed out that potential future year savings do little to offset the affordability problem of higher near-year procurement funding required. We recognize that up-front funding needs would increase at an increased annual production rate, but the potential savings generated could justify this investment. This procurement strategy would reduce DOD's total outlays in the long term by (1) decreasing the total program acquisition cost and (2) achieving potential infrastructure savings through increased commonality.

In the October 10, 1996, Acquisition Decision Memorandum on the Marine Corps upgrade program, the Under Secretary of Defense, Acquisition and Technology, noted that DOD's Office of Program Analysis and Evaluation will conduct a commonality study and an expanded operational assessment of utility helicopter alternatives. The interim results will be available no later than December 16, 1996. According to the Under Secretary, at the conclusion of the study, DOD will make a decision on

whether to proceed with the Marine Corps Huey upgrade program. See appendix I for DOD's detailed comments.

Scope and Methodology

To determine whether the services are taking advantage of opportunities to increase commonality of helicopters within DOD, we interviewed DOD, Army, Navy, Air Force, and Marine Corps officials and reviewed the Navy and Marine Corps' aviation plans. We also reviewed the Navy's cost and operational effectiveness analysis, which examined alternatives for modernizing its logistical support helicopter fleet. In addition, we reviewed the most recent DOD cost-effectiveness study, which compared alternatives for the Marine Corps' Huey modernization program. We obtained and evaluated Navy and Marine Corps funding requirements, acquisition costs, and procurement rates for Blackhawk derivative helicopters. We then developed potential DOD cost savings associated with increased procurement rates for alternative Navy buys. We did not evaluate Navy or Marine Corps helicopter requirements.

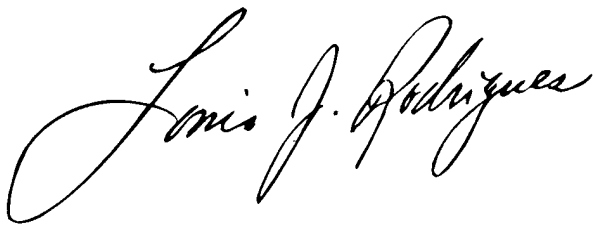
We performed our work in Washington, D.C., at the Office of the Secretary of Defense; the Departments of the Army, the Navy, and the Air Force; and the Marine Corps. Our review was conducted from July to September 1996 in accordance with generally accepted government auditing standards.

As you know, the head of a federal agency is required by 31 U.S.C. 720 to submit a written statement on actions taken on our recommendations to the Senate Committee on Governmental Affairs and the House Committee on Government Reform and Oversight not later than 60 days after the date of this report. A written statement must also be submitted to the Senate and House Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the Chairmen and Ranking Minority Members, Senate and House Committees on Appropriations, Senate Committee on Armed Services, House Committee on National Security, Senate Committee on Governmental Affairs, and House Committee on Government Reform and Oversight; the Secretary of the Navy and the Commandant of the Marine Corps; and the Director of the Office of Management and Budget. Copies will be made available to others upon request.

If you or your staff have any questions concerning this report, please contact me at (202) 512-4841. Major contributors to this report were Robert J. Stolba, Robert D. Spence, and Lauri A. Kay.

Sincerely yours,



Louis J. Rodrigues
Director, Defense Acquisitions Issues

Comments From the Department of Defense

ACQUISITION AND TECHNOLOGY

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON DC 20301-3000

09 OCT 1996

Mr. Louis J. Rodriques
Director, Defense Acquisitions Issues
National Security and International
Affairs Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Rodriques:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report titled "Concerns About Marine Corps Plans to Modernize its UH-1 Helicopters":, dated September 19, 1996 (GAO Code 707151), OSD Case 1230. DoD concurs with the draft report, based on changes the GAO staff said would be made to the initial draft.

DoD's significant points are stated below. Other minor technical comments have been provided separately.

The GAO report projects savings of $375 million and $670 million by increasing procurement of an H-60 variant to 18 and 36 aircraft per year, respectively, to satisfy the Navy's Vertical Replenishment (VERTREP) and Marine Corps' Utility Helicopter requirements. The accelerated rate and associated projected savings are irrespective of which H-60 variant is selected. In GAO's example, it does not matter whether one buys a combination of VERTREP aircraft and CH-60s for the Marine Corps or all VERTREP aircraft. As long as 18 or 36 aircraft per year are procured, the "savings" estimated by the GAO will still be realized.

See p. 4.

An investment of over $1 billion between FY 1998-2003 is required to achieve the higher production rates. This may not be affordable within the DoD budget without adversely affecting other high-priority programs. A comparably accelerated H-1 Upgrade Program would retain its cost advantage over the H-60.

DoD concurs with GAO's recommendation to conduct an in-depth study of the economic benefits of increased helicopter commonality. In addition, DoD concurs with the recommendation to consider results of the commonality study and the information in the GAO report in DoD's future deliberations on Marine Corps helicopter modernization options.

Finally, DoD concurs that if the study and other available data demonstrate that potential savings are sufficient to offset the Marine Corps' increased cost, DoD should consider using these savings for Marine Corps Blackhawk derivative procurement.

The DoD appreciates the opportunity to comment on the draft report.

George R. Schneiter
Director
Strategic and Tactical Systems