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MAJOR ACQUISITIONS

DOD's Process Does Not Ensure Proper Weapons Mix for Close Support Mission



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**National Security and
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The Honorable Nicholas Mavroules
Chairman, Subcommittee on Investigations
Committee on Armed Services
House of Representatives

Dear Mr. Chairman:

This report responds to your request that we assess the Department of Defense's (DOD) close support¹ major acquisition process. Specifically, you asked that we determine whether (1) the process identifies the proper mix of weapon systems needed to meet current and future mission requirements; (2) the increased involvement of the Chairman of the Joint Chiefs of Staff (JCS), as intended by the Goldwater-Nichols Department of Defense Reorganization Act of 1986, has broadened DOD's analyses to include consideration of the expected contribution of all services' close support assets; and (3) the Army's planned procurements in support of its current doctrine and future war-fighting concept will overlap traditional areas of Air Force operations.

Background

In July 1947, the Air Force was separated from the Army and established as a separate military service with responsibility for air combat operations. Several months later, DOD directed the Air Force to provide close air support (CAS) to the Army as well as airlift, support and supply of airborne operations, and interdiction of enemy land power.

By definition, providing CAS is attacking targets from the air in close proximity to friendly forces. Most CAS missions are flown between the forward edge of battle and the outer limits of Army artillery. These missions require the detailed integration of the movement of aircraft with the movement of ground forces.

Controversy has surrounded the CAS mission ever since the Air Force was established. The Army's concerns have focused on the Air Force's (1) direct control over all aircraft supporting frontline troops, (2) air-to-ground coordination process, (3) ability to respond to the Army's

¹The "close support" mission consists of a number of sub-missions, including the Army's fire support, which depends on attack helicopters, artillery, and certain long-range missile systems, and the Air Force's close air support, which employs only fixed-wing aircraft.

CAS requirements, and (4) choice of the type of aircraft that would be used to meet the Army's CAS requirements. Meanwhile, the Air Force's concerns have included (1) the dramatic growth in Army aviation and (2) the Army's development of the attack helicopter for aerial fire support. Some of these concerns resurface each time the Army or the Air Force announce a new aircraft procurement in support of the close support mission.

The Congress has long been concerned with the services' ability (1) to conduct joint operations and (2) to acquire weapon systems and equipment capable of meeting operational requirements at a reasonable cost. These concerns, among others, led to the enactment of the Goldwater-Nichols Department of Defense Reorganization Act of 1986. The act established the Chairman of the JCS as the principal military adviser, subject to the authority, direction, and control of the President and the Secretary of Defense. He is responsible for providing joint military advice on requirements, programs, and budgets. Prior to the act, the Chairman functioned as one of the five members of the JCS, and their decisions reflected more of a consensus rather than a joint perspective.

The act also created the position of Vice Chairman of the JCS, who serves as vice chairman and sole military member of the Defense Acquisition Board, which determines the acquisition strategy for weapon systems. He also serves as the Chairman of the Joint Requirements Oversight Council, which DOD established in response to the act. The Council reviews mission requirements and acquisitions of new weapon systems. The review is intended to ensure that each service establishes its weapon system requirements and procurement plans only after fully considering the expected contributions of the other services.

During the mid- to late 1980s, DOD initiated several studies of CAS. The Congress also directed DOD to conduct several other CAS studies to examine the mission and to ensure that all aircraft alternatives had been explored before the Air Force purchased a new CAS aircraft. After reviewing the studies, the Congress directed DOD to conduct additional studies. These studies were done by the JCS, the Rand Corporation, and the Institute for Defense Analyses. In September 1990, DOD provided these studies and its overall summary of them to the Congress.

The studies concluded that the three types of close support weapon systems—fixed-wing fighters, attack helicopters, and long-range artillery—were needed for possible future conflicts because each complemented the others.

Results in Brief

DOD's major acquisition process for close support does not ensure that the proper mix of weapons is developed and procured to meet current and planned mission requirements. The individual services control the process by strongly influencing how their roles and missions are defined. The services generate their own analyses and assessments to support desired changes in missions, requirements, or procurement for submission to the JCS and the Office of the Secretary of Defense (OSD). These assessments do not question what and how much is needed for the mission area; neither do they adequately consider the expected contributions of other close support weapon systems.

The services justify acquisitions based on a unique mission need or unique weapon system capability. Competition among weapon systems in this environment is generally limited to a single category of weapon, such as fixed-wing fighters. Moreover, decisions reached above the service level are made without discussion of the other categories of close support weapons. These other weapons are excluded because they have unique complementary capabilities.

The increased involvement of the Chairman of the JCS has not broadened DOD's consideration of requirements, as intended by the Goldwater-Nichols Department of Defense Reorganization Act of 1986. JCS does not ensure that the expected contributions of all services' close support assets are considered when individual services propose changes in mission tasks, weapon system requirements, or procurement. For example, JCS' July 1991 review of the Air Force's Sensor Fuzed Weapon² considered the expected contributions of some systems but not all related Air Force and Army systems, according to a JCS official. In an August 1991 report on that system, we recommended that the review should include these other systems.³ DOD disagreed with our recommendation. Further, DOD said that each service has a valid complementary requirement to engage similar targets and must procure weapons to kill those targets.

The Army is planning to procure several new close support weapon systems, including attack helicopters, artillery, and missile systems, to support its existing doctrine and its future war-fighting concept. In the future, the Army plans to fight at much greater distances than it can

²This cluster-type weapon was designed to be used against multiple enemy tanks and armored vehicles during a single aircraft pass in the close support and the interdiction missions.

³Munitions Procurement: Resolve Questions Before Proceeding with Sensor Fuzed Weapon Production (GAO/NSIAD-91-235, Aug. 16, 1991).

currently, using new surveillance and other technologies that will make weapons more accurate and lethal at greater ranges. New Army weapons, such as the Comanche helicopter, are expected to be able to engage targets at ranges that traditionally have been areas of Air Force operations. The Army's planned procurements, if approved, could overlap the Air Force's current and planned fixed-wing capabilities.

DOD Acquisition Process Does Not Ensure That the Proper Mix of Weapons Is Developed and Procured

OSD reviews and approves the services' major weapon system requirements and acquisitions at specified points in the process. These reviews are made by the Under Secretary of Defense for Acquisition, who also is Chairman of the Defense Acquisition Board. The JCS assists in decision-making by commenting to the Under Secretary of Defense for Acquisition on analyses provided by the services to support mission requirements and planned procurements.

A fundamental objective of DOD's major acquisition process is to ensure that the services collectively develop and procure the proper mix of weapons needed to counter potential threats. This objective depends on DOD's ability to rigorously analyze and define mission needs. Each service strongly influences the definition of its own roles and missions. Mission requirements, which the services identify to JCS and OSD to be validated, are often presented in isolation from closely related missions. The Army, for example, in its analysis did not discuss the expected contributions of its artillery and missile systems when it justified requirements for various attack helicopters. Further, DOD believes that it is not appropriate for one service to consider the capabilities of another service's weapon systems in their analyses because each has a valid requirement to kill enemy targets. The Air Force, for example, did not discuss the contributions expected from the Army's close support systems when it justified requirements for the A-10, an aircraft designed specifically for the CAS mission.

Concurrent Development of Two Types of Close Support Aircraft Has Been a Long-term Issue

In 1970, OSD directed the Army and the Air Force to justify the need for two types of CAS aircraft (the attack helicopter and the A-10 fixed-wing aircraft). The services reviewed CAS requirements and agreed that the Cheyenne and the A-10 had overlapping capabilities and performed the same overall mission. The services stressed, however, that each aircraft had unique flight characteristics suited for specific tasks or missions. Moreover, the systems complemented each other. The services recommended that development of both aircraft continue. OSD accepted

the services' reasoning that the systems were "complementary" and continued to support both.

Following OSD's concern regarding possible duplication, the House Committee on Appropriations questioned the need for more than one CAS aircraft. The Committee directed DOD to reevaluate CAS requirements and the need for the two aircraft (the attack helicopter and the A-10). DOD told the Committee that the proposed aircraft were in fact competitive with one another. It stressed, however, that each would possess unique capabilities necessary for certain combat situations and, therefore, complemented each other. DOD limited its analysis to the different flight characteristics of each aircraft and concluded that the aircraft were needed for the mission. DOD did not prioritize requirements for the aircraft or develop an overall requirements plan for CAS or the broader close support mission. Nevertheless, DOD, in the early 1970s, recommended continuation of the programs, and the Congress continued to fund these aircraft.

Services Justify Acquisitions Based on Unique Mission Needs or Unique Weapon Capabilities

The 1970 determination that the different types of CAS aircraft were necessary because they complemented each other became the accepted means of justifying close support acquisitions over the next two decades. Moreover, demonstrating a weapon system's unique capabilities provided sufficient justification for a proposed acquisition. The competitive aspects of the system with other systems became irrelevant.

During the past two decades, the Army has proposed a number of close support acquisitions, including the Cheyenne, the Apache, the Comanche, and the Longbow Apache attack helicopters. The Army continued to justify the Cheyenne to OSD based on its unique flight characteristics and weapon systems until it was canceled in 1972 due to performance problems. Similarly, in 1972, the Army justified requirements for a night attack helicopter, the Apache, based on its expected unique flight characteristics, weapon systems, and ability to operate at night. The Apache cost about \$12 billion. In 1983, the Army began the Comanche program, estimated to cost about \$35 billion, based on the need for its unique flight characteristics, light weight, and air combat and night reconnaissance capabilities. In 1989, the Army awarded a contract for a major modification to the Apache helicopter, known as the Longbow Apache. The justification was based on its expected unique flight characteristics, a radar that will permit adverse weather operations, and a new fire and forget missile capability. The Army's estimated cost for the Longbow Apache program is about \$5 billion.

During the same period, the Army also proposed the acquisition of several artillery and missile systems, including the Advanced Field Artillery System, and munitions for the Multiple Launch Rocket System. The Army justified the Advanced Field Artillery System to JCS and OSD based on its unique combat capabilities and greater range, rate of fire, lethality, and mobility. The proposed munitions for the Multiple Launch Rocket System were justified based on their greater precision and lethality.

In none of these justifications to JCS and OSD did the Army discuss the degree to which each proposed system was competitive with other close support weapon systems or provide an analysis of the expected contributions of these other systems. When comparisons were made, they were limited to a single weapon category such as helicopters. Uniqueness, therefore, has provided sufficient justification for major acquisitions.

The Army, in 1987, began to analyze combined mission area requirements at its Combined Arms Center, Ft. Leavenworth, Kansas, to identify weapon system trade-offs for its close support assets. An Army official told us that such analyses are used in making procurement decisions at the service level but are not routinely provided to JCS and OSD in support of a proposed Army requirement or acquisition.

The Air Force initiated a series of aircraft evaluations for replacing its aging inventory of CAS-dedicated A-10s in 1984. Subsequently, the Army and the Air Force jointly agreed on CAS mission needs for the 1990s. Both recognized that the Army's future war-fighting doctrine and expected advances in weapons technology would require the development of a different type of aircraft. The services reasoned that the aircraft had to be able to perform both CAS and battlefield air interdiction (BAI)⁴ missions.

The Air Force proposed development of a new fixed-wing, multi-role fighter, the A-16, to perform the CAS/BAI mission. OSD rejected the request and directed the Air Force to consider all viable aircraft alternatives. The Air Force analyzed various aircraft options and concluded that none could fully satisfy the requirements. It continued to believe that the A-16 would best satisfy the new requirements.

⁴The BAI mission, a subset of the Air Force's larger air interdiction mission, is to attack hostile ground targets that are not in direct contact with friendly forces but are close enough to be of concern.

The Air Force submitted a Cost and Operational Effectiveness Analysis to JCS and OSD favoring acquisition of the A-16 in late 1990. An OSD official told us that the analysis provided by the Air Force also supported the ultimate decision reached by OSD and that developing a new aircraft was considered too costly. OSD therefore directed the Air Force to modify some A-10s and F-16s for the combined CAS/BAI mission. The entire requirement and acquisition review for this decision focused on one category of weapon system (the fixed-wing aircraft). It excluded any discussion of the competitive aspects of the other categories of close support weapons and any analysis of the expected contributions of a growing inventory of attack helicopters and artillery/missile systems.

JCS' Participation in Acquisition Review Process Remains Limited

In response to the Goldwater-Nichols legislation, JCS established the Joint Requirements Oversight Council to review mission need requirements and procurements to prevent unnecessary duplication among and within the services and to ensure that the proper mix of weapon systems is procured.

A JCS official told us that since the Council was established, it has reviewed several proposed close support requirements and follow-on programs, including the Longbow Apache and Comanche helicopter development programs, several long-range artillery replacement programs, the requirement for a fixed-wing replacement for the A-10, and several close support munitions development programs. He also told us, however, that each review had been largely limited to the analysis provided by the service. Such analysis, he added, did not routinely include other "complementary" but "competitive" weapons that were expected to contribute significantly to the mission area or to closely related mission areas. For example, the Council's review of the A-10 replacement issue has been limited to considering fixed-wing aircraft. Because the CAS mission now uses fixed-wing aircraft, the Air Force did not consider other close support alternatives in its analysis. The Council's review of the A-10 did not include the known and potential contributions of the Army's attack helicopters and its artillery/missile systems to the close support mission.

In March 1991, the Council modified its requirements review process to try to get the services to consider the expected contributions of weapon systems in related mission areas—both from within and across the services—when determining individual mission requirements and procurements. JCS began requesting such information from the services.

A JCS official told us that when JCS reviewed the Air Force's Sensor Fuzed Weapon in July 1991, it considered the expected contributions of some systems but not all related Air Force or Army systems. This program is estimated to cost about \$4 billion. Our recently issued report on this weapon recommended that the acquisition review be expanded to include consideration of the contributions of the other Air Force and Army systems. DOD disagreed with our recommendation. Further, DOD said that each service has a valid complementary requirement to engage similar targets and must procure weapons to kill those targets. Army systems, therefore, are not considered appropriate for inclusion in a comparative analysis developed by the Air Force. This position is not consistent with the objectives of the Goldwater-Nichols legislation that all close support weapon systems, regardless of service, be considered when reviewing requirements and making procurement decisions.

Army Close Support Procurements Will Operate in Areas Historically Reserved for the Air Force

The Air Force has multiple missions; two directly support ground troops. Its air interdiction mission is to use a variety of fixed-wing aircraft to delay, disrupt, divert, or destroy the enemy's combat potential before it can be used against friendly forces. This mission involves destroying fixed and moving targets beyond the current range of Army artillery. The other mission is CAS.

Most of the Air Force's planned 26 wings, which include about 2,600 aircraft, could perform air interdiction and CAS missions in support of ground forces. The Air Force is developing plans to replace some of its current aircraft with new or modified aircraft.

The Army is revising its basic war-fighting concept. This concept, AirLand Operations, recognizes that the Army will know where the enemy is most of the time and that it will be possible to defeat the enemy at far greater ranges than those currently possible. New surveillance and other weapon system technologies providing greater range, lethality, and accuracy will make this possible.

The Army's close support procurement plans are intended to support its current doctrine and future war-fighting concept. The Army wants to procure a new generation of attack helicopters, several different long-range artillery systems, and a variety of new missiles and munitions.

Each of these planned systems will attack fixed and moving targets well beyond the current range of Army artillery. This means that a significant

part of Army operations could be conducted in areas technology has traditionally reserved for Air Force fixed-wing aircraft.

Recommendations

As long as DOD's acquisition process establishes requirements as an endless series of narrowly defined tasks and accepts the notion that a weapon system's uniqueness or complementary features are sufficient justification to support procurement, DOD cannot ensure that the right weapons are being procured in the right quantities and at the right times for joint battle areas such as close support. Without knowledge and consideration of the contributions expected from all services' current and planned close support weapon systems, DOD may be procuring too much of some weapon systems and not enough of others.

To be more consistent with the objectives of the Goldwater-Nichols legislation, we recommend that the Secretary of Defense strengthen DOD's analysis of close support mission needs to ensure that each requirement and acquisition decision is made only after full disclosure and evaluation of the expected contributions of all "complementary" close support weapon systems, regardless of service. To accomplish this, we recommend that the Secretary of Defense direct each military service to provide (1) an in-depth mission needs analysis that identifies the expected contributions of all existing close support weapon systems both within its own service and in the other services and (2) similar analyses of the contributions expected from weapon systems being developed and being proposed for development, when each justifies a specific requirement or procurement to JCS and OSD.

While this report deals only with the close support mission, we believe the objectives of Goldwater-Nichols have broad applicability across many missions.

Scope and Methodology

To satisfy our objectives, we examined Air Force, Army, DOD, and contractor documents and analyses related to CAS and close support missions, including the Army's emerging war-fighting concept, various procurement cost and operational effectiveness studies, and congressionally mandated studies of CAS and close support missions. We reviewed various documents on program requirements and procurement decisions. We also reviewed documents pertaining to the acquisitions review performed by the JCS.

We discussed CAS and close support with officials at the Department of Defense, Washington, D.C.; the Training and Doctrine Command, Fort Monroe, Virginia; the Tactical Air Command, Langley Air Force Base, Virginia; the U.S. Army Aviation Systems Command, St. Louis, Missouri; and the Army Combined Arms Center, Ft. Leavenworth, Kansas.

We performed our work from November 1990 to March 1992 in accordance with generally accepted government auditing standards.

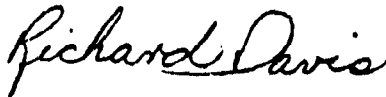
As agreed with your office, we limited the scope of our work to the Army and the Air Force.

As requested, we did not obtain fully coordinated DOD comments on this report. However, we did obtain oral comments on a draft of this report from representatives of the Offices of the Secretary of Defense, the Under Secretary of Defense for Acquisition, the Joint Chiefs of Staff, and the Departments of the Army and the Air Force. We have included their comments where appropriate.

Unless you announce the contents of this report earlier, we plan no further distribution of it until 30 days from its issue date. At that time, we will send copies to the Chairmen of the House and Senate Committees on Armed Services and on Appropriations and the Secretaries of Defense, the Air Force, and the Army. Copies will also be made available to other interested parties upon request.

Please contact me at (202) 275-4141 if you or your staff have any questions about this report. Other major contributors to this report are listed in appendix I.

Sincerely yours,



Richard Davis
Director, Army Issues

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