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# FORCE STRUCTURE

## Department of the Navy's Tactical Aviation Integration Plan Is Reasonable, but Some Factors Could Affect Implementation



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Highlights of [GAO-04-900](#), a report to the Senate and House Committees on Appropriations and the Senate and House Committees on Armed Services

## Why GAO Did This Study

The Fiscal Year 2004 Defense Appropriations Act and the Senate Report for the 2004 National Defense Authorization Act mandated that GAO examine the Navy and Marine Corps' Tactical Aviation Integration Plan. In response to these mandates, this report addresses (1) how Navy and Marine Corps operational concepts, force structure, and procurement costs change; (2) the methodology and assumptions the services used to analyze the potential for integrating the forces; (3) the analytical process the services used to decide which reserve squadrons to decommission; and (4) other factors that might affect implementation of the Plan.

## What GAO Recommends

To enhance the potential that the future tactical aviation force will meet the services' mission needs and ensure more transparency in future decommissioning decisions, GAO recommends that the Secretary of Defense

- direct that the number of needed backup aircraft be assessed,
- develop guidance and methodology for analyzing future decommissioning decisions, and
- direct that future readiness funding for the future tactical aviation force be analyzed.

In written comments, the Department of Defense generally agreed with the recommendations.

[www.gao.gov/cgi-bin/getrpt?GAO-04-900](http://www.gao.gov/cgi-bin/getrpt?GAO-04-900).

To view the full product, including the scope and methodology, click on the link above. For more information, contact George Morse at (757) 552-8108 or [morseg@gao.gov](mailto:morseg@gao.gov).

## FORCE STRUCTURE

# Department of the Navy's Tactical Aviation Integration Plan Is Reasonable, but Some Factors Could Affect Implementation

## What GAO Found

Concerns about the affordability of their prior tactical aviation procurement plan prompted the Navy and Marine Corps to agree to a new Tactical Aviation Integration Plan. Under this Plan, the two services will perform their missions using fewer units of more capable aircraft and reducing total program aircraft procurement costs by \$28 billion over the next 18 years. Operationally, the Navy and Marine Corps will increase the extent to which their tactical aviation units are used as a combined force to accomplish both services' missions. The Plan also reduces the services' tactical aviation force structure by decommissioning five squadrons, thus decreasing the number of Navy and Marine Corps squadrons to 59, and reduces the total number of aircraft they plan to buy from 1,637 to 1,140.

The Department of the Navy based its conclusion that it could meet the Navy and Marine Corps' operational requirements with a smaller force primarily on the findings of a contractor study that evaluated the relative capability of different tactical aviation force structures. GAO's review of the contractor's methodology and assumptions about force structure, budget resources, and management efficiencies suggests that much of the analysis appears reasonable. However, GAO noted some limitations—including the lack of analytical support for reducing the number of backup aircraft—increasing the risk that the smaller force will be less effective than expected.

The Navy and Marine Corps each followed a different process in selecting a reserve squadron to decommission. The Marine Corps made a clear and well-documented analysis of the operational, fiscal, logistical, and personnel impacts of different options that appears to provide decision makers with a reasonable basis for selecting the Reserve unit to decommission. By contrast, the Navy selected its reserve squadron without clear criteria or a documented, comprehensive analysis, and thus with less transparency in its process.

Two other factors that might affect successful implementation of the Plan are the potential unavailability of readiness funding and delays in fielding the new force. Although the contractor recommended that the Navy identify future readiness-funding requirements, to date, the Navy has not conducted this analysis. In addition, the Department of the Navy is experiencing engineering and weight problems in developing the Joint Strike Fighter that will cause it to be delayed until 2013, at least 1 year later than had been projected, and other high risks to the program remain. Because these delays will cause the Navy to operate legacy aircraft longer than expected, they might also increase operations and maintenance costs, making an analysis of future readiness funding requirements even more important.

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## **Abbreviations**

DOD	Department of Defense
GAO	Government Accountability Office

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United States Government Accountability Office  
Washington, DC 20548

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August 13, 2004

Congressional Committees:

The Department of the Navy formerly planned to spend almost \$92 billion by fiscal year 2021 to replace legacy F/A-18C/D, F-14, and AV-8 aircraft with newer F/A-18E/Fs and the future Joint Strike Fighter aircraft. Concerned that it could not afford to purchase as many of these aircraft as originally planned, however, in fiscal year 2002 the Department of the Navy announced a new Tactical Aviation Integration Plan, whereby the Navy and Marine Corps concluded that they would be able to achieve their missions with fewer aircraft and units by operating as a combined force.

Out of concern about how the Navy and Marine Corps' future plans for their tactical aviation forces would affect mission capability, Congress mandated that GAO examine the Navy and Marine Corps' Tactical Aviation Integration Plan.<sup>1</sup> In the Fiscal Year 2004 Defense Appropriations Act, Congress directed GAO to assess Navy and Marine Corps requirements for tactical aviation and the role of Navy and Marine Corps Reserve assets in meeting such requirements.<sup>2</sup> In addition, the Senate Report for the National Defense Authorization Act for Fiscal Year 2004 directed GAO to analyze the Navy and Marine Corps' Plan to determine the validity of the assumptions made in formulating the Plan, the expected impact of the Plan on Navy and Marine Corps force structure, and the ability of the smaller force structure to meet operational requirements.<sup>3</sup> After meeting with your offices, we agreed on a strategy for completing work in response to both mandates and agreed to provide an interim briefing and a final report. We briefed your offices on our results from late February through April 2004.

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<sup>1</sup> Hereinafter referred to as the Plan.

<sup>2</sup> Pub. L. No. 108-87, §8141 (2003).

<sup>3</sup> S. Rep. No. 108-46, at 123 (2003).

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Based on our work in response to these mandates, this final report addresses the following questions:

1. How would Navy and Marine Corps operational concepts, force structure, and procurement costs change under the Plan?
2. What methodology and assumptions did the Navy and Marine Corps use to analyze the potential for integrating tactical aviation assets, and what, if any, limitations affect the services' analysis?
3. To what extent did the Navy and Marine Corps use a thorough and well-documented process to assess which reserve squadrons should be decommissioned in fiscal year 2004 to implement the Plan?
4. What other factors might affect the implementation of the Plan?

To accomplish these objectives, we analyzed the contractor study that supports the Plan by reviewing its methodology, major assumptions, and modeling input and approach. We also obtained information from officials at Navy and Marine Corps Headquarters, Navy and Marine Corps Reserve Headquarters, Joint Forces Command, Atlantic and Pacific Naval Air Forces Headquarters, and Marine Forces Atlantic Headquarters in order to verify and assess both the information contained in the study and the resulting decisions about force structure, procurement plans, and operational impacts. We assessed the reliability of the services' data by reviewing the methodology and pertinent contractor and service information used for the study and the Plan. In addition, as part of our analysis, we visited selected Navy and Marine Corps Reserve tactical aviation units in order to get their perspective on the possible decommissioning of reserve squadrons as well as future roles and missions.

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## Results in Brief

Concerns about the affordability of their future tactical aviation procurement plan prompted the Navy and Marine Corps to agree to a Plan whereby the two services will be performing their missions using fewer units of more capable aircraft and reducing total program aircraft procurement costs from \$92 billion to about \$64 billion over the next 18 years. Operationally, the Navy and Marine Corps will increase the extent to which their tactical aviation units are used as a combined force for both services. The Plan will also reduce the services' tactical aviation force structure by decommissioning three active and two reserve squadrons, thus decreasing the number of Navy and Marine Corps

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squadrons to 59. By decreasing the number of squadrons, the number of aircraft in some squadrons, and the number of backup aircraft, the Department of the Navy would decrease the total tactical aviation aircraft procurement from the original program's 1,637 to 1,140 aircraft, a reduction of 497 aircraft.

The Department of the Navy based its conclusion that it could meet the Navy and Marine Corps' operational requirements with a smaller force primarily on the findings of a contractor study that evaluated the relative capability of different tactical aviation force structures. Although our review of the contractor's methodology and assumptions about force structure, budget resources, and management efficiencies suggests that much of the contractor's analysis appears to be reasonable, we also noted some limitations in the study that add risk. Specifically, we found the following:

- The contractor modeled the Joint Strike Fighters aboard Navy carriers as if all would have the same performance characteristics despite knowing that the Marine Corps' Short Takeoff and Vertical Landing version has significantly less range and payload capability than the Navy's carrier version.
- Following the contractor's recommendation, the Navy decided to reduce the number of backup aircraft it would buy predicated on expected lower attrition rates and improvements in maintenance management without fully analyzing the feasibility of achieving these efficiencies.
- The contractor's force structure analysis showed that the new force had significantly more capability than the current force but relied on aircraft performance scores assigned by a panel of experts. However, a sensitivity analysis performed by the contractor also showed that variations in these scores significantly affected the forces' relative capability and therefore the increased effectiveness might not be as high as reported.

Each of these factors increases the risk that the future smaller force will not be as effective at accomplishing the Navy and Marine Corps' tactical missions as the Department of Navy expects.

The Navy and Marine Corps each followed a different process in selecting a reserve squadron to decommission. The process developed by the Marine Corps Reserve produced a well-documented analysis of the

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operational, fiscal, logistical, and personnel impacts of different options that appears to provide decision makers with a sound basis for selecting the reserve unit to decommission. By contrast, the Navy selected the reserve squadron to decommission without clear criteria or a documented comprehensive analysis supporting its decision. In the absence of standard Department of Defense guidance for analyzing and documenting decommissioning alternatives, a lack of transparency could occur in conjunction with future service force structure decisions.

Two other factors might affect successful implementation of the Plan, including the potential uncertainty about future requirements for readiness funding and delays in fielding the new force. Although the contractor recommended that the Navy identify future readiness-funding requirements and ensure that a mechanism be in place for fully funding these accounts, to date, the Navy has not conducted this analysis. Without an examination of future funding requirements, the Navy cannot know whether sufficient funds will be available to maintain readiness levels that are adequate for the smaller tactical aviation force to meet the mission needs of both the Navy and Marine Corps. In addition, the Department of the Navy is also experiencing engineering and weight problems in developing the Joint Strike Fighter that will cause it to be delayed until 2013—at least 1 year beyond when it had been projected to begin receiving the aircraft—and other risks to the program remain. Because these delays will cause the Navy to operate legacy aircraft longer than expected, they might also increase operation and maintenance costs, making an analysis of future readiness funding requirements even more important.

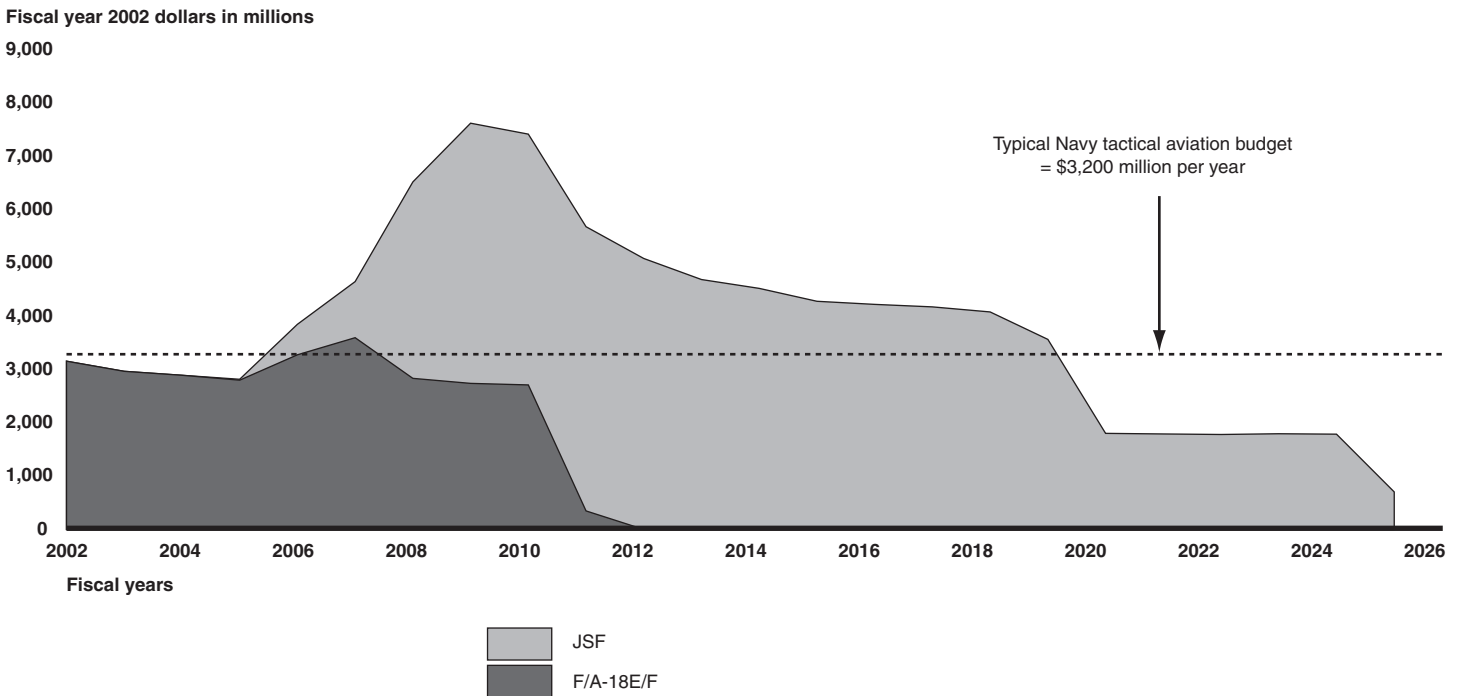
To mitigate the risks associated with implementing the Navy and Marine Corps' Plan and enhance future decommissioning decisions, we are recommending that (1) the Secretary of the Navy conduct additional analyses of the expected efficiencies essential to reducing the number of backup aircraft and the necessary readiness funding and (2) the Secretary of Defense require comprehensive and well-documented analyses when services make decisions about which units to decommission. In written comments on a draft of this report, the Department of Defense generally agreed with our recommendations and cited actions it plans to take to implement them. Although some of the department's proposed actions appear consistent with our recommendations, we believe it needs to take further steps. The department should develop clear criteria for the services to use in making future unit decommissioning decisions and require them to retain documentation of their analyses to facilitate oversight and transparency. The department's comments and our evaluation are on page 21 of this report.



## Background

The Department of Defense's 2001 Defense Planning Guidance tasked the Department of the Navy to conduct a comprehensive review to assess the feasibility of fully integrating Navy and Marine Corps aviation force structure to achieve both effectiveness and efficiency. The Department of the Navy narrowed the study to include only fixed-wing tactical aviation assets because of affordability concerns. Specifically, Navy officials were concerned that the projected procurement budget would not be sufficient to buy as many F/A-18E/Fs and Joint Strike Fighter aircraft as originally planned. The difference between the funding needed to support the Navy's original plan for procuring tactical aircraft and the Navy's projected procurement budget is shown in figure 1.

**Figure 1: Navy's Projected Tactical Aviation Procurement Budget Compared with Original Procurement Plan, Fiscal Years 2002-26**



Source: U.S. Navy.

Note: The profile shown for the Joint Strike Fighter (JSF) for fiscal years 2005-11 reflects funding for both the F/A-18E/F and the Joint Strike Fighter.

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Figure 1 shows that, starting in fiscal year 2005, the Navy's typical aviation allocation of \$3,200 million per year would not be sufficient to support the previous procurement plan for F/A-18E/F and Joint Strike Fighter aircraft.

In December 2001, the Chief of Naval Operations and the Commandant of the Marine Corps jointly commissioned a contractor to study the feasibility of integrating Naval tactical aviation. The study prompted a memorandum of agreement between the Navy and Marine Corps in August 2002 to integrate their tactical aviation assets and buy fewer aircraft than originally planned.

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## Plan Changes the Navy and Marine Corps' Operational Concepts and Reduces Force Structure to Achieve Procurement Savings

The Plan proposes that the Navy and Marine Corps (1) merge operational concepts; (2) reduce the number of squadrons, aircraft per squadron, and backup aircraft; and (3) reduce the total number of aircraft to be procured in the future. The Department of the Navy anticipates that these changes will save approximately \$28 billion in procurement costs over the next 18 years through fiscal year 2021.

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## Navy and Marine Corps Merge Concepts of Operation

Operationally, the Navy and Marine Corps would increase the extent to which their tactical aviation units are used as a combined force for both services. Under the Plan, the Navy and Marine Corps would increase cross deployment of squadrons between the services and would further consolidate missions and operations through changes in aircrew training and the initiation of command-level officer exchanges.

Under the Plan, the Marine Corps would increase the number of squadrons dedicated to carrier air wings, and the Navy would begin to dedicate squadrons to Marine Aircraft Wings. In 2003 the Marine Corps began to provide the Navy with the first of six additional dedicated squadrons to augment four squadrons already integrated into carrier air wings during the 1990s. As a result, each of the Navy's 10 active carrier air wings would ultimately include one Marine Corps squadron by 2012. Concurrently, the Navy would integrate three dedicated squadrons into Marine Aircraft Wings by 2008, primarily to support the Marine Corps Unit Deployment

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Program<sup>4</sup> rotations to Japan. The first Navy squadron to deploy in support of Marine Corps operations would occur in late fiscal year 2004, with other squadrons to follow in fiscal years 2007 and 2008.

As part of the new operating concept, the Department of the Navy would satisfy both Navy and Marine Corps missions using either Navy or Marine Corps squadrons. Traditionally, the primary mission of Navy tactical aviation has been to provide long-range striking power from a carrier, while Marine Corps tactical aviation provided air support for ground forces. Navy and Marine Corps tactical aviation squadrons will retain their primary mission responsibilities, but units that integrate would additionally be responsible to train as well as perform required mission responsibilities of the other service. For example, if a Navy squadron were assigned to the Marine Corps Unit Deployment Program, its pilots would receive more emphasis on training for close air support missions, and, similarly, Marine Corps pilots would place more emphasis on long-range strike missions before deploying with a carrier air wing. Moreover, Navy and Marine Corps officers would exchange Command positions to further develop a more unified culture. For instance, a Marine Corps colonel would command a carrier air wing, while a Navy captain would command a Marine Corps Aircraft Group.

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**Plan Expected to Reduce Total Number of Squadrons, Aircraft per Squadron, and Backup Aircraft**

As indicated in table 1, the Department of the Navy would create a smaller tactical aviation force structure consisting of fewer squadrons, reduced numbers of aircraft per squadron, and fewer backup aircraft. The number of tactical aviation squadrons would decrease from 68 under the previous plan to 59 by 2012. To achieve this reduction of nine squadrons, the department would

- cancel plans to reestablish four active Navy squadrons as anticipated under its prior procurement plan,
- decommission one Marine Corps Reserve squadron as well as one Navy Reserve squadron in 2004, and
- decommission three active Navy squadrons. The first active squadron is scheduled to be decommissioned in fiscal year 2006; two other squadrons are to be decommissioned from fiscal year 2010 through fiscal year 2012.

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<sup>4</sup> Marine Corps Unit Deployment program maintains three tactical aviation squadrons at Iwakuni Marine Corps Air Station, Japan, to meet contingency operations throughout the Western Pacific Theater.

**Table 1: Force Structure Summary for the Previous Program and the Navy and Marine Corps' Integration Plan**

<b>Service/Component</b>	<b>Force structure under previous program</b>	<b>Force structure under integration plan</b>	<b>Reductions in force structure</b>
Navy-Active	40 squadrons/500 aircraft <sup>a</sup>	33 squadrons/370 aircraft	7 squadrons/130 aircraft
Navy-Reserves	3 squadrons/36 aircraft	2 squadrons/22 aircraft	1 squadron/14 aircraft
Marine Corps-Active	21 squadrons/308 aircraft	21 squadrons/210 aircraft	0 squadrons/98 aircraft
Marine Corps-Reserves	4 squadrons/48 aircraft	3 squadrons/30 aircraft	1 squadron/18 aircraft
<b>Total operational aircraft</b>	<b>68 squadrons/892 aircraft</b>	<b>59 squadrons/632 aircraft</b>	<b>9 squadrons/260 aircraft</b>
Backup aircraft	745	508	237
<b>Total aircraft</b>	<b>1,637</b>	<b>1,140</b>	<b>497</b>

Sources: U.S. Navy (data); GAO (analysis).

<sup>a</sup>The Navy currently has 36 active squadrons instead of 40 as listed in the table. The difference in numbers is due to four Marine Corps squadrons that are currently integrated aboard Navy carriers. The Navy's previous plan was to buy enough aircraft to reestablish those four squadrons as Navy units.

Under the Plan, the number of aircraft assigned to some tactical aviation squadrons would be reduced. All Navy and Marine Corps F/A-18C squadrons that transition to the future Joint Strike Fighter aircraft would be reduced from 12 to 10 aircraft. In addition, Navy F/A-18F squadrons will be reduced from 14 to 12 aircraft. Furthermore, by 2006, aircraft assigned to the remaining two Navy and three Marine Corps Reserve squadrons would be reduced from 12 to 10. By reducing the aircraft assigned to squadrons, the size of Navy air wings will transition from 46 to 44 aircraft in 2004, as the Navy procures new aircraft. A notional air wing in the Navy's current force is made up of 46 aircraft comprising a combination of F/A-18C and F-14 squadrons. However, by 2016, carrier air wings would contain 44 aircraft made up of two squadrons of 10 Joint Strike Fighters, one squadron of 12 F/A-18E fighters, and one squadron of 12 F/A-18F fighters.

The Department of the Navy's Plan would also reduce the number of backup aircraft to be procured from 745 (under the previous program) to 508, for a total reduction of 237 aircraft. Backup aircraft consist of those aircraft that are not primarily assigned to active or reserve squadrons. Specifically, backup aircraft are necessary to meet a variety of needs such as

- training new pilots;
- replacing aircraft that are either awaiting or undergoing depot-level repair;
- meeting research, development, and test and evaluation needs;

- attrition during peacetime or wartime operations; and
- meeting miscellaneous requirements, such as adversary training and the Blue Angels demonstration team.

## Plan Expected to Reduce Procurement of Tactical Fighters and Save Procurement Costs

In implementing the Plan, the Department of the Navy expects to reduce the number of tactical aviation aircraft it will purchase by 497—from 1,637 to 1,140. As indicated in table 2, it plans to procure, respectively, 88 and 409 fewer F/A-18E/F and Joint Strike Fighter aircraft. Almost half (237, or 48 percent) of the expected reduction in aircraft procurement is attributable to the plan to have fewer backup aircraft. By reducing the total number of new tactical aviation aircraft to be procured, the Department of the Navy now expects that its new procurement program will cost about \$64 billion, as compared with nearly \$92 billion for the previously planned force, resulting in a savings of approximately \$28 billion.

**Table 2: Previous Program and the Navy and Marine Corps' Integration Plan Aircraft Procurement Summary**

Aircraft type	Previous program procurement	Integration plan procurement	Reductions in aircraft procurement
F/A-18E/F	548	460	88
Joint Strike Fighter	1,089	680	409
<b>Total</b>	<b>1,637</b>	<b>1,140</b>	<b>497</b>

Sources: U.S. Navy (data); GAO (analysis).

## Navy's Analysis Generally Appears Reasonable, but Some Limitations Could Understate Risks

The Department of the Navy based its conclusion that it could meet its operational requirements with a smaller force primarily on the results of a contractor study. The contractor's analysis generally appeared reasonable because it assessed the relative capability of different tactical aviation force structures and included important assumptions about force structure, budget resources, and management efficiencies. However, from our review of the contractor's methodology and assumptions, we identified some limitations in its analysis that may understate the risk associated with implementing some aspects of the Plan. These limitations include (1) the contractor's decision to model only the carrier version of the Joint Strike Fighter despite the Marine Corps' plans to operate Short Take Off and Vertical Landing aircraft on carriers, (2) the contractor's limited studies supporting recommended reductions in backup aircraft,

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and (3) the contractor's method for determining aircraft capabilities used in the force analyses.

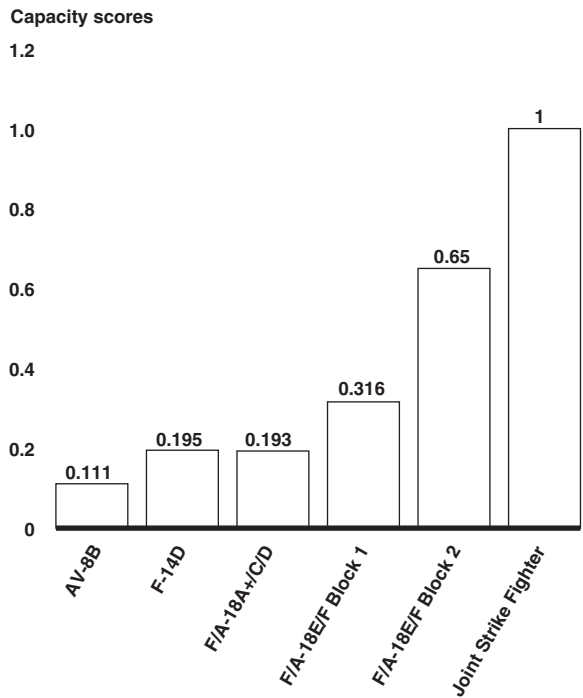
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## Methodology Compared Relative Force Structure Capabilities

The contractor modeled the effectiveness of the current force, the larger force that the Navy had previously planned to buy, and the study's recommended smaller force at three stages of a notional warfight. The warfight was based on a generic composite scenario that was developed with input from the Air Force and Army. It has been previously used by the Joint Strike Fighter Program Office to assess the effectiveness of a joint strike force in terms of phases of a warfight; geographical location of combat forces; the characteristics of targets, such as type and hardness; and whether targets are mobile. During the forward presence phase of the contractor's modeling scenario, one carrier battle group and one amphibious readiness group were deployed, and aircraft operated at a maximum distance of 400 nautical miles from the carrier. In the buildup phase, three carrier battle groups and three amphibious groups were deployed in one theater, and aircraft operated at a maximum distance of 150 nautical miles. During the mature phase, eight carrier battle groups, eight amphibious readiness groups, and 75 percent of all other assets were deployed to land-based sites, and aircraft operated at a maximum distance of 150 nautical miles from the carrier.

To measure combat effectiveness levels, the contractor methodically compared the estimated capabilities of the current force, the previously planned force, and the recommended force to hit targets and perform close air support. To determine the relative capabilities of each aircraft comprising these forces, the contractor convened a panel of experts who were familiar with planned capability and used official aircraft performance data to score the offensive and defensive capabilities of different aircraft across a range of missions performed during the three stages of the warfight. As indicated in figure 2, the experts determined that the Joint Strike Fighter, which is still in development, will be the most capable aircraft and assigned it a baseline score of 1 compared with the other aircraft.

**Figure 2: Capability Scores Determined by Contractor’s Panel of Experts**



Sources: U.S. Navy (data); GAO (analysis).

Figure 2 also shows that based on the capability scores assigned other aircraft, the Joint Strike Fighter is expected to be approximately nine times more capable than the AV-8B Harrier aircraft, about five times more capable than the F-14D and F/A-18 A+/C/D aircraft, three times more capable than the first version of the F/A-18 E/F aircraft, and 50 percent more capable than the second version of the F/A-18E/F. In addition, the contractor measured the percentage of units deployed in order to ensure that Navy and Marine Corps personnel tempo and operational tempo<sup>5</sup> guidelines for peacetime were not exceeded.

The study concluded that, because of the expected increase in the capabilities of F/A-18 E/F and the Joint Strike Fighter aircraft, both the previously planned force and the recommended new smaller force were more effective than today’s force. Furthermore, the new smaller force was

<sup>5</sup> Personnel tempo measures the frequency of deployments and time away from home. Operational tempo measures the intensity of actions for military units by tracking the number of days per quarter that the unit is deployed.

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just as effective in most instances as the previously planned force because the smaller force had enough aircraft to fully populate aircraft carrier flight decks and therefore did not cause a reduction in the number of targets that could be hit. However, the analysis showed that beginning in 2015, there would be a 10 percent reduction in effectiveness in close air support during the mature phase of a warfight because fewer squadrons and aircraft would be available to deploy to land bases. The analysis also showed that the smaller force stayed within personnel and operational tempo guidelines during peacetime.

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### Analysis Included Reasonable Assumptions

The contractor's analysis was based on three key assumptions that generally appeared to be reasonable and consistent with DOD plans. First, it assumed that the future naval force structure would include 12 carrier battle groups, supported by 1 reserve and 10 active carrier air wings, and 12 amphibious readiness groups. The 2001 Quadrennial Defense Review validated this naval force structure and judged that this force structure presented moderate operational risk in implementing the defense strategy. Second, it assumed that the Navy and Marine Corps' tactical aviation procurement budget would continue to be about \$3.2 billion in fiscal year 2002 dollars annually through 2020. This was based on the Department of the Navy's determination that the tactical aviation procurement budget would continue to represent about 50 percent of the services' total aircraft procurement budget as it had in fiscal years 1995 to 2002. Third, it assumed that the Department of the Navy could reduce the number of backup aircraft it buys based on expected efficiencies in managing its backup aircraft inventory.

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### Some Limitations in the Navy's Analysis Understate Risks in Implementing the Plan

Our analysis also showed, however, that certain limitations derived from the contractor's study could add risk to the expected effectiveness of the future smaller force. These limitations are

- the study's modeling assumption that the effectiveness of the Marine Corps' Short Takeoff and Vertical Landing version of the Joint Strike Fighter would be the same as the Navy's carrier version despite projected differences in their capability;
- the study's assumption that certain efficiencies in the management of backup aircraft could be realized, without documenting and providing supporting analyses substantiating how they would be achieved; and
- the study's process for assigning capability measures to aircraft which, because of its subjectivity, could result in an overestimation of the smaller force's effectiveness.



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Projected Capability Differences of Joint Strike Fighter Versions Could Affect Expected Effectiveness of Smaller Tactical Aviation Force

The contractor's study assumed that all Joint Strike Fighters aboard Navy carriers, including those belonging to the Marine Corps, would have the performance characteristics of the carrier version of that aircraft. However, the Marine Corps plans to operate only the Short Takeoff and Vertical Landing version of the aircraft, which is projected to be significantly less capable than the carrier version in terms of range and payload (number of weapons it can carry). The Marine Corps believes this version is needed to satisfy its requirement to operate from austere land bases or amphibious ships in order to quickly support ground forces when needed. But the carrier version's unrefueled range and internal payload are expected to exceed those of the Short Takeoff and Vertical Landing version by approximately 50 and 100 percent, respectively.

The contractor mitigated the differences in the two versions' capabilities by modeling a scenario whereby the aircraft would operate from carriers located 150 miles from the targets during the mature phase of the warfight—well within the range of the Marine Corps' version. By contrast, during Operation Iraqi Freedom, many of the targets struck from carriers would have been outside the range of the Short Takeoff and Vertical Landing version of the aircraft unless in-flight refueling was performed, thereby reducing its effectiveness. The study noted that because of the differences in performance, substitution of the Short Takeoff and Vertical Landing version for the carrier version would result in decreased effectiveness when the Short Takeoff and Vertical Landing version's performance parameters are exceeded. However, the study did not conduct additional analyses to quantify the impact of using Short Takeoff and Vertical Landing aircraft aboard carriers. Therefore, if the Plan is implemented whereby the Marine Corps operates the Short Takeoff and Vertical Landing version of the aircraft exclusively as one of four tactical aviation squadrons aboard each carrier, under a different scenario featuring a greater range to targets, the overall effectiveness of the tactical fighter group could be less than what the contractor's study predicted. Navy officials acknowledged that operating the Short Takeoff and Vertical Landing Joint Strike Fighter aircraft from carriers presents a number of challenges that the Navy expects to address as the aircraft progresses through development.

Projected Efficiencies in Managing Backup Aircraft Were Based on Limited Analysis

The contractor's study recommended cutting 351 backup aircraft based on expected improvements and efficiencies in the Navy's management of such aircraft. The study identified three main factors prompting its conclusion that fewer backup aircraft would be needed.

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- Actual historical attrition rates for F/A-18 aircraft, according to the Navy, suggest that the attrition rate for the F/A-18E/F and Joint Strike Fighter could be lower than expected. The Navy determined that attrition might be only 1 percent of total aircraft inventory, rather than the expected 1.5 and 1.3 percent included in the Navy's original procurement plan for the aircraft respectively<sup>6</sup>; thus, fewer attrition aircraft would suffice.
  - Business practices for managing aircraft in the maintenance pipeline could be improved. According to the contractor, if Navy depots performed as much maintenance per day as Air Force depots, it appears that the Navy could reduce the number of aircraft in the maintenance pipeline; thus, fewer aircraft could suffice.
  - Testing, evaluating, and aircrew training could become more efficient. According to the contractor's study, fewer aircraft would be needed to test and evaluate future technology improvements because of the Navy and Marine Corps' two Joint Strike Fighter variants (the carrier and Short Takeoff and Vertical Landing versions would have many common parts). In addition, advances in trainer technology and the greater sortie generation capability of the newer aircraft could enable them to achieve more training objectives in a single flight; thus, fewer aircraft could suffice.

Although the contractor recognized the potential of these efficiencies when recommending the reduction to the number of backup aircraft, it did not fully analyze the likelihood of achieving them. According to the contractor, it recommended the reduction based on limited analysis of the potential to reduce the number of attrition and maintenance pipeline aircraft. As a result, the contractor also recommended that the Department of the Navy study whether it could achieve expected maintenance efficiencies by improving its depot operations. However, the department has not conducted such an assessment.

The Department of the Navy considered the risk of cutting 351 aircraft too high and instead decided to cut only 237 backup aircraft—the number reflected in the Navy's plan. Historically, the Navy's backup inventory has equaled approximately 95 percent of the number of combat aircraft. The contractor recommended that the Navy reduce its backup aircraft

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<sup>6</sup> We did not assess the reliability of the Navy's data generating the attrition rates for the F/A-18 aircraft.

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Subjectivity in Aircraft  
Capabilities Scoring Could  
Reduce Expected Force  
Effectiveness

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requirement to 62 percent of its planned inventory of combat aircraft. Concerned that this might be too drastic a cut, the Navy decided to use 80 percent when determining the number of backup aircraft in its Plan. Although the Plan's higher ratio of backup aircraft to combat aircraft will reduce operational risk by having more aircraft available for attrition and other purposes, the Navy's 80 percent factor was not based on a documented analysis. Navy officials noted that because of budget limitations, it would be difficult to purchase additional aircraft to support the smaller tactical aviation force in case some of the projected efficiencies are not realized.

The contractor relied on aircraft capability scores assigned by a panel of experts as a basis for comparing the relative effectiveness of the aircraft and alternative force structures examined. The results showed that by 2020, the previously planned and new smaller force would be four times more effective at hitting targets than the current force. However, the panelists subjectively determined the capability scores from official aircraft performance parameters provided by the Navy. The contractor reportedly conducted a "sensitivity analysis" of the aircraft capability scores and found that changing the scores affected the forces' relative effectiveness. Since the contractor did not retain documentation of the analysis, we could not verify the quality of the scoring, nor attest that the relative effectiveness of the new force will be four times greater than the current force as the study reported. Nevertheless, the contractor's acknowledgement that score variations could affect relative force effectiveness raises the possibility that the estimated increases in effectiveness, both for the previously planned force and for the recommended smaller force, might not be as high as the study concluded. Navy and Marine Corps officials agreed that gaining a significant increase in total capability was key to accepting a smaller, more capable tactical aviation force. However, if the capability of the recommended smaller force is significantly less than that indicated by the study, the smaller force's ability to meet both Navy and Marine Corps' mission requirements could be adversely affected.

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## In the Absence of DOD Criteria, the Marine Corps and Navy Used Different Methods and Documentation Standards to Determine Which Reserve Units to Decommission

The Navy and Marine Corps took significantly different approaches toward the task of assessing and documenting their decisions on which reserve units to decommission. The Marine Corps used a well-documented process that clearly showed what criteria were applied to arrive at its decision, whereas the Navy's approach lacked clarity and supporting documentation about how different options were evaluated. DOD has not developed criteria to guide such decommissioning decisions. In a previous report, we reviewed the Air Force's decision to reduce and consolidate the B-1B bomber fleet and found that Air Force officials did not complete a formal comprehensive analysis of potential basing options in order to determine whether they were choosing the most cost-effective units to keep.<sup>7</sup> We also stated that in the absence of standard guidance for analyzing basing alternatives, similar problems could occur in the future. In this instance, the absence of standard DOD guidance for analyzing and documenting decommissioning alternatives allowed the Navy to use a very informal and less transparent process to determine which reserve squadron to decommission in fiscal year 2004. The lack of a formal process could also hinder transparency in making such decisions in the future, which adversely affects Congress's ability to provide appropriate oversight.

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## The Marine Corps Conducted a Comprehensive Analysis to Support Decommissioning Decision

The Marine Corps established a team that conducted and documented a comprehensive review to support its decision about which Marine Corps Reserve squadron to decommission.<sup>8</sup> In conducting its analysis, the Marine Corps assumed that (1) reserve assets that had not been decommissioned must be optimized for integration in future combat roles, (2) mission readiness and productivity are crucial, and (3) the political and legal ramifications of deactivating reserve units must be considered. The study team established a set of criteria consisting of personnel, operational, fiscal, logistical, and strategic factors and applied these criteria when evaluating each of the Marine Corps' four reserve squadrons. Table 3 identifies the selection criteria applied to each squadron.

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<sup>7</sup> U.S. General Accounting Office, *Force Structure: Review of B-1 Process Identifies Opportunity to Improve Future Analysis*, [GAO-02-846](#) (Washington, D.C.: Sept. 6, 2002).

<sup>8</sup> The study team submitted the report to the Commander, 4th Marine (Reserve) Air Wing, on December 7, 2002.

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**Table 3: Marine Corps Criteria for Selecting a Reserve Unit to Decommission**

<b>Personnel</b>	Detailed demographics analysis was conducted to determine the number and status of personnel for each location. The implications of relocating and retraining squadron personnel were examined.
<b>Operational</b>	Unit, pilot, and aircraft readiness, productivity, and efficiency were assessed. Sortie <sup>a</sup> analysis was conducted, and aircraft utilization rates were examined. Support provided for training exercises and other events was analyzed.
<b>Fiscal</b>	Operational and training costs were examined. Cost per flight hour, cost to support combined arms training at Marine Corps Air/Ground Task Force Training Center Twenty-nine Palms, Calif., and operations/maintenance and personnel costs were assessed.
<b>Logistical</b>	Basing impacts and divestiture expenses were examined. Suitability of facilities (billeting, work areas, messing, etc.) and operations, training, and maintenance supportability were assessed.
<b>Strategic</b>	Doctrinal, organizational, and regional issues were examined.

Source: U.S. Marine Corps.

<sup>a</sup>A single mission or flight of an aircraft.

The study results were presented to the Marine Requirements Oversight Council for review and recommendation and to the Commandant of the Marine Corps.<sup>9</sup> The Commandant decided in May 2004 to decommission reserve squadron VMFA-321 located at Andrews Air Force Base, Maryland, by September 2004.

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**The Navy Did Not Conduct a Formal Analysis or Provide Documentation to Support Its Decommissioning Decision**

In December 2003, the Navy decided to decommission one of three Navy Reserve tactical aviation squadrons, VFA-203, located in Atlanta, Georgia. The Chief of Naval Reserve stated that the Navy used a variety of criteria in deciding which unit to decommission. These criteria included the squadrons' deployment history, the location of squadrons in relation to operating ranges, and the location of a reserve intermediate maintenance facility. Navy officials, however, could not provide documentation of the criteria or the analysis used to support its decision. Without such documentation to provide transparency to the Navy's process, we could not determine whether these criteria were systematically applied to each reserve squadron. Furthermore, we could not assess whether the Navy had

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<sup>9</sup> The Marine Requirements Oversight Council advises the Commandant of the Marine Corps on policy matters related to concepts, force structure, and requirements validation.

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systematically evaluated and compared other factors such as operational, personnel, and financial impacts for all Navy Reserve squadrons.

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## Two Other Factors Could Affect the Plan's Implementation and Add Risk

Two other factors could adversely affect the successful implementation of the Plan and increase the risk level assumed at the time the contractor completed the study and the Navy and Marine Corps accepted the Plan. These factors are (1) uncertainty about requirements for readiness funding to support the tactical aviation force and (2) projected delays in fielding the Joint Strike Fighter aircraft that might cause the Department of the Navy not to implement the Plan as early as expected and might increase operations and maintenance costs. If these factors are not appropriately addressed, the Department of the Navy may not have sufficient funding to support the readiness levels required for the smaller force to meet the Navy and Marine Corps' missions, and the transition to the Plan's force might be more costly than anticipated.

The contractor's study stated that because the Navy and the Marine Corps would have a combined smaller tactical aviation force under the Plan, the services' readiness accounts must be fully funded to ensure that the aircraft readiness levels are adequate to meet the mission needs of both services. Furthermore, the contractor recommended that the Navy conduct an analysis to determine the future readiness funding requirements and ensure that the Navy has a mechanism in place to fully fund the readiness accounts. So far, the Navy has not conducted this analysis, nor has it addressed how it will ensure that the readiness accounts will be fully funded because Navy officials noted that they consider future budget estimates to be adequate. However, a recent Congressional Research Service evaluation of the Plan noted that operations and maintenance costs have been growing in recent years for old aircraft and that new aircraft have sometimes, if not often, proved more expensive to maintain than planned.<sup>10</sup> Furthermore, our analysis of budget data for fiscal years 2001-3 indicates that the Department of the Navy's operations and maintenance costs averaged about \$388 million more than what was requested for tactical aviation and other flight operations. Without a review of future readiness funding requirements, the Navy cannot be certain that sufficient funding will be available to maintain

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<sup>10</sup> Congressional Research Service, *Navy-Marine Corps Tactical Air Integration Plan: Background and Issues for Congress* (Washington, D.C., Sept. 2003).

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the readiness levels that will enable the smaller tactical aviation force to meet the mission needs of both the Navy and the Marine Corps.

Delays in fielding the Joint Strike Fighter aircraft, both known and potential, could also affect the successful implementation of the Plan. As a result of engineering and weight problems in the development of the Joint Strike Fighter, there will be at least a 1-year delay in when the Navy and Marine Corps had expected to begin receiving the Joint Strike Fighter aircraft. As noted in the Department of the Navy's most recent acquisition reports to Congress, the Navy has delayed the Short Takeoff and Vertical Landing version from 2010 to 2012 and the Navy's carrier version from 2012 to 2013. Furthermore, in March 2004 we reported that numerous program risks and possible schedule variances could cause additional delays.<sup>11</sup>

Recent Joint Strike Fighter program cost increases could also delay the fielding of the aircraft. In DOD's December 31, 2003, procurement plan, the average unit cost of the aircraft increased from \$69 million to \$82 million. Assuming that the Department of the Navy procures the 680 Joint Strike Fighter aircraft as proposed under the Plan, the total procurement cost will be approximately \$9 billion higher. This increase in cost, when considered within the limits of the expected \$3.2 billion annual procurement budget, will likely prevent the Department of the Navy from fielding the smaller but more effective tactical aviation force as early as expected. Additionally, these delays will oblige the Department of the Navy to operate legacy aircraft longer than expected, which could result in increased operations and maintenance costs. A potential increase in operations and maintenance costs makes it even more important for the Department of the Navy to conduct an analysis to determine its future readiness funding requirements.

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## Conclusions

The contractor's study results provided the Department of the Navy with a reasonable basis for concluding that it could afford to buy a smaller but more capable force that would meet its future operating requirements by using fewer Navy and Marine Corps tactical aviation squadrons of more capable aircraft as a combined force and achieving efficiencies that allow it to reduce the number of backup aircraft needed. However, there are

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<sup>11</sup> U.S. General Accounting Office, *Defense Acquisitions: Assessments of Major Weapon Programs*. GAO-04-248 (Washington, D.C.: Mar. 31, 2004).

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known management and funding risks to realizing the new smaller forces' affordability and effectiveness. Until Navy management assesses the likelihood of future lower attrition rates and aircraft maintenance, test and evaluation, and training requirements, the Navy runs the risk that the number of backup aircraft it plans to procure will not be adequate to support the smaller tactical aviation force and add concern to the Plan's affordability. Furthermore, in the absence of clear DOD guidance citing consistent criteria and documentation requirements for supporting decisions that affect units, such as which Navy and Marine Corps Reserve squadrons to decommission, we remain concerned about the transparency of the process for reducing the force to those with oversight responsibility. The inconsistency in the Marine Corps' and Navy's approaches and supporting documentation confirms the value of such guidance to ensure clear consideration of the best alternative. Finally, until the Department of the Navy knows the readiness funding requirements for operating the new smaller force, it cannot be certain that it can maintain the readiness levels required to meet operational demands. Such an assessment of these requirements would provide a sound basis for seeking proper funding.

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## Recommendations for Executive Action

To enhance the potential that the future Navy and Marine Corps integrated tactical aviation force will meet the mission needs of both services and ensure more transparency when making future decommissioning decisions, we recommend that the Secretary of Defense take the following three actions:

- direct the Secretary of the Navy to thoroughly assess all of the factors that provide the basis for the number of backup aircraft needed to support a smaller tactical aviation force under the plan to integrate Navy and Marine Corps tactical aviation forces,
- develop guidance that (1) identifies the criteria and methodology for analyzing future decisions about which units to decommission and (2) establishes requirements for documenting the process used and analysis conducted, and
- direct the Secretary of the Navy to analyze future readiness funding requirements to support the tactical aviation integration plan and include required funding in future budget requests.



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## Agency Comments and Our Evaluation

In written comments on a draft of this report, the Director, Defense Systems, Office of the Under Secretary of Defense, stated that the department generally agreed with our recommendations and cited actions that it is taking. The department's comments are reprinted in their entirety in appendix I.

In partially concurring with our first recommendation to thoroughly assess all of the factors that provide the basis for the number of backup aircraft, DOD stated that the Department of the Navy's Naval Air Systems Command would complete an effort to review all aircraft inventories to determine the optimum quantity required by July 2004. However, we were not able to evaluate the Navy's study because Navy officials have since told us that it will not be completed until late September or early October 2004.

With regard to our second recommendation to develop guidance that would identify criteria and a methodology for analyzing future decommissioning decisions and require documenting the process, DOD stated that it would change Directive 5410.10, which covers the notification of inactivation or decommission of forces, and require it to contain the criteria and methodology used to make the force structure decision. While we agree that the new guidance, if followed, would disclose these aspects of the decision-making process, it does not appear sufficient to meet the need we identified for consistency and documentation to support force structure decisions. Therefore, we believe that DOD should take additional steps to meet the intent of our recommendation by developing consistent criteria and requiring documentation to ensure transparency for those providing oversight of such decisions in the future.

In partially concurring with our third recommendation related to future readiness funding requirements, the Department of Defense stated that the Department of the Navy is currently developing analytical metrics that would provide a better understanding of how to fund readiness accounts to achieve a target readiness level. We support the development of validated metrics that would link the amount of funding to readiness levels because they would provide decision makers with assurance that sufficient funding would be provided.

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## Scope and Methodology

To determine how Navy and Marine Corps operational concepts, force structure, and procurement costs would change under the Plan, we obtained information about the Navy and Marine Corps' current roles and mission, force structure, and projected tactical aviation procurement programs and conducted a comparative analysis. We also met with Navy and Marine Corps officials at the headquarters and major command levels as well as Congressional Research Service officials to further understand and document the operational, force structure, and procurement cost changes expected if the Plan is implemented.

To determine what methodology and assumptions the Navy and Marine Corps used to analyze the potential for integrating tactical aviation assets and any limitations that could affect the services' analysis, we analyzed numerous aspects of the contractor's study that provided the impetus for the Plan. Specifically, we met with the contractor officials of Whitney, Bradley & Brown, Inc., to gain first-hand knowledge of the model used to assess aircraft performance capability and the overall reasonableness of the study's methodology. We also reviewed the scenario and assessed the key analytical assumptions used in order to evaluate their possible impact on the implementation of the Plan. We examined operational and aircraft performance factors to determine the potential limitations that could affect the services' analysis. Additionally, we held discussions with officials at Navy and Marine Corps headquarters, Joint Forces Command, Naval Air Forces Pacific and Atlantic Commands, Marine Forces Atlantic Command, and the Air Combat Command to validate and clarify how the Plan would or would not affect the ability of tactical aviation forces to meet mission needs.

To determine the process the Navy and Marine Corps used to assess which reserve squadrons should be decommissioned in fiscal year 2004, we obtained information from the Marine Corps Reserve Headquarters and the 4<sup>th</sup> Marine Air Wing showing a comparative analysis of Marine Corps Reserve squadrons. In the absence of comparable information from the Navy, we held discussions with the Chief of Naval Reserve and the Director, Navy Air Warfare, and visited the Naval Air Force Reserve Command to obtain information about the decision-making process for selecting the Navy reserve unit to be decommissioned. We also visited the Commander of the Navy Reserve Carrier Air Wing-20, along with four reserve squadrons, two each from the Navy and Marine Corps Reserves, to clarify and better understand their roles, missions, and overall value to the total force concept.

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To determine what other factors might affect the implementation of the Plan, we analyzed the contractor's study, Congressional Research Service reports, and prior GAO reports for potential effects that were not considered in the final results of the analysis. We discussed these factors with officials from Navy and Marine Corps headquarters as well as Naval Air Forces Pacific and Atlantic Commands and Marine Forces Atlantic Command to assess the impact of the Plan on day-to-day operations.

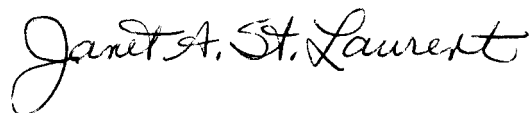
We assessed the reliability of pertinent data about aircraft capability, force structure, and military operations contained in the contractor's study that supports the Plan by (1) reviewing with contractor officials the methodology used for the analysis; (2) reviewing the 2001 Quadrennial Defense Review, prior GAO reports, and service procurement and aircraft performance documents; and (3) conducting discussions with Navy and Marine Corps officials. We concluded that the data were sufficiently reliable for the purpose of this report.

We performed our review from July 2003 through May 2004 in accordance with generally accepted government auditing standards.

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We are sending copies of this report to the Secretary of Defense; the Secretary of the Navy; the Commandant of the Marine Corps; the Director, Office of Management and Budget; and other interested congressional committees and parties. We will also make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

Please contact me on (202) 512-4402 if you or your staff have any questions concerning this report. Major contributors to this report are included in appendix I.



Janet St. Laurent, Director  
Defense Capabilities and Management

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# Appendix I: Comments from the Department of Defense



ACQUISITION  
TECHNOLOGY  
AND LOGISTICS

OFFICE OF THE UNDER SECRETARY OF DEFENSE  
3000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3000

JUL 28 2004

Ms. Janet St. Laurent  
Director, Defense Capabilities and Management  
U.S. General Accounting Office  
Washington, D.C. 20548

Dear Ms. St. Laurent:

This is the Department of Defense (DoD) response to the GAO draft report, GAO-04-900, "FORCE STRUCTURE: Department of the Navy's Tactical Aviation Integration Plan Is Reasonable, But Some Factors Could Affect Implementation," dated June 25, 2004 (GAO Code 350414)

The DoD reviewed the draft report and generally concurs with the report's recommendations. The rationale for the DoD's position is provided at enclosure 1.

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

Sincerely,

Glenn F. Lamartin  
Director  
Defense Systems

Enclosure:  
As stated



GAO DRAFT REPORT – DATED JUNE 25, 2004  
GAO CODE 350414/GAO-04-900

“FORCE STRUCTURE: Department of the Navy’s Tactical Aviation Integration Plan  
Is Reasonable, But Some Factors Could Affect Implementation”

DEPARTMENT OF DEFENSE COMMENTS  
TO THE RECOMMENDATIONS

**RECOMMENDATION 1:** The GAO recommended that the Secretary of Defense direct the Secretary of the Navy to thoroughly assess all of the factors that provide the basis for the number of backup aircraft needed to support a smaller tactical aviation force under the plan to integrate Navy and Marine Corps tactical aviation forces. (Page 20/GAO Draft Report)

**DOD RESPONSE:** The Department partially concurs with this recommendation. The DoN is currently reviewing all aircraft inventories to determine the optimum quantity required for each type of aircraft. Naval Air Systems Command is leading this effort in conducting productive ratio (inventory optimization) reviews for all aircraft by July 2004.

**RECOMMENDATION 2:** The GAO recommended that the Secretary of Defense develop guidance that: (1) identifies the criteria and methodology for analyzing future decisions about which units to decommission and (2) establishes requirements for documenting the process used and analysis conducted. (Page 20/GAO Draft Report)

**DOD RESPONSE:** The Department partially concurs with this recommendation. DoD Directive 5410.10 currently provides for a DoD notification of any significant inactivation or decommissioning. We agree that this can be implemented through paragraph 3.2.2 of this directive modified to read:

3.2.2. The written request will contain all pertinent information concerning the matter, including the reason for the action; **the criteria and methodology used in making this force structure decision**, the number of personnel affected by the action; the total number of employees, when appropriate; dollar amounts involved; the estimated effect on the local economy, and anticipated Congressional interest, including the names of members who will be notified. A draft of any proposed press announcement should accompany this request, or a statement will be included that no press announcement is contemplated.

The Department will make the appropriate change.

Note: Page numbers in the draft report may differ from those in this report.

**RECOMMENDATION 3:** The GAO recommended that the Secretary of Defense direct the Secretary of the Navy to analyze future readiness funding requirements to support the tactical aviation integration plan and include required funding in future budget requests. (Page 20/GAO Draft Report)

**DOD RESPONSE:** The Department partially concurs with this recommendation. The DoN is currently developing analytical metrics that they expect will provide them a better understanding of how to fund readiness accounts to achieve a target readiness level. These metrics and modeling techniques are being applied to the flight hour, maintenance and training accounts to better support fleet readiness. The DoN has implemented the Fleet Response Plan (FRP) with a goal to have six carriers deployed within thirty days and two more by ninety days. Execution of this plan in FY06 is envisioned to have these carriers' target readiness levels of C1.7 (very good) to C3.0 (good). The Department supports this effort, and will wait to see how the results of the current execution compare to past readiness before considering any additional actions.

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# Appendix II: GAO Contacts and Staff Acknowledgments

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## GAO Contacts

Richard G. Payne (757) 552-8119  
George O. Morse (757) 552-8108

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## Acknowledgments

In addition to those named above, Willie J. Cheely, Jr.; Kelly Baumgartner; W. William Russell, IV; Michael T. Dice; Cheryl A. Weissman; Katherine S. Lenane; and Monica L. Wolford also made significant contributions to this report.



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