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GAO

Report to the Chairman and Ranking Minority Member, Subcommittee on Military Personnel, Committee on Armed Services, House of Representatives

August 1999

MILITARY PERSONNEL

Actions Needed to Better Define Pilot Requirements and Promote Retention

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United States General Accounting Office
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National Security and
International Affairs Division

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August 20, 1999

The Honorable Steve Buyer
Chairman
The Honorable Neil Abercrombie
Ranking Minority Member
Subcommittee on Military Personnel
Committee on Armed Services
House of Representatives

This report responds to the request of the Chairman and former Ranking Minority Member that we review and identify reasons for the reported military pilot shortages and offer solutions to address the issue. Specifically, we determined (1) the services' reported and projected estimates of their pilot shortages, (2) the basis for the services' pilot requirements, (3) key factors that account for the reported pilot shortages, and (4) concerns that are causing pilots to consider leaving the military.

We are sending copies of this report to Senator Wayne Allard, Chairman, and Senator Max Cleland, Ranking Minority Member, Subcommittee on Military Personnel, Senate Committee on Armed Services; Senator Ted Stevens, Chairman, and Senator Daniel K. Inouye, Ranking Minority Member, Subcommittee on Defense, Senate Committee on Appropriations; and Representative Jerry Lewis, Chairman, and Representative John P. Murtha, Ranking Minority Member, Subcommittee on Defense, House Committee on Appropriations. We are also sending copies of this report to the Honorable William S. Cohen, Secretary of Defense; the Honorable Lewis Caldera, Secretary of the Army; the Honorable John H. Dalton, Secretary of the Navy; the Honorable F. Whitten Peters, Secretary of the Air Force; and General James L. Jones, Commandant of the Marine Corps. Copies will also be made available to others upon request.

If you have any questions about this report, please contact Brenda S. Farrell or me at (202) 512-5140. Other key contributors to this report are listed in appendix III.

Mark E. Gebicke
Director, National Security
Preparedness Issues

Executive Summary

Purpose

The Department of Defense (DOD) reported shortages of approximately 2,000 pilots at the end of fiscal year 1998 and projected that shortages would continue for several years. Retaining qualified pilots is important not only to ensure that operational requirements can be met, but also to recoup the substantial investments the services make in training their pilots.

Concerned about reports of pilot shortages, the Chairman and former Ranking Minority Member of the Subcommittee on Military Personnel, House Committee on Armed Services, asked GAO to review and identify reasons for the reported pilot shortages and offer solutions to address the issue. Specifically, GAO determined (1) the services' reported and projected estimates of their pilot shortages, (2) the basis for the services' pilot requirements, (3) key factors that account for the reported pilot shortages, and (4) concerns that are causing pilots to consider leaving the military.[1]

Background

At the end of fiscal year 1998, DOD had about 28,000 active duty commissioned and warrant officer pilots. These included approximately 13,300 pilots in the Air Force; 6,600 pilots in the Navy; 4,800 warrant officer pilots in the Army; and 3,300 pilots in the Marine Corps. The Army is the only service that uses warrant officers as pilots.

Generally, DOD pilots follow career paths that require them to serve in both cockpit and nonflying positions. These positions range from operational positions that have a direct combat mission to nonoperational positions that exist to carry out support activities, training functions, and other noncombat related activities. Pilot requirements are based on cockpit and operational positions needing aviation expertise as well as on a number of nonflying positions needed to develop pilots' leadership skills for advancement purposes. Additional considerations in establishing requirements include the need to permit sufficient time between deployments and the fact that a certain percentage of pilots will not be available for assignment at any given point in time due to factors such as education and training, medical conditions, and transfers between assignments.

[1]GAO has several additional, ongoing reviews requested by Congress related to military personnel issues, including an analysis of data from a broad military personnel survey to be implemented later this year, a GAO survey of servicemembers in retention critical specialties, and an historical examination of military retention rates.

All pilot candidates must complete basic flight training, lasting 1 to 2 years, to earn their initial qualifications, or wings. According to DOD, the cost to train each military pilot through basic flight training is about $1 million; the cost to fully train a pilot with the requisite operational experience can be more than $9 million. These costs will vary significantly depending on the type of aircraft.

Upon entering pilot training, pilots begin to receive aviation career incentive pay (ACIP), commonly referred to as flight pay, which was designed to attract and retain officers in a military aviation career. Once pilots complete their initial aviation commitment of 6 to 8 years, the services are further authorized to offer bonuses, called aviation continuation pay (ACP), to encourage pilots to continue in their military career beyond their initial obligation. Currently, the services are authorized to offer ACP to pilots through 14 years of aviation service. Pending legislation contains provisions that would authorize the services to continue these ACP payments through a pilot's 25th year of aviation service. DOD's pilots, whether assigned to flying or nonflying positions, are eligible to receive both ACIP and ACP, provided they meet the other eligibility criteria. ACIP can be as high as $840 a month. ACP is authorized up to $25,000 a year; the largest bonus currently offered is $22,000 a year.

Results in Brief

The services currently report that no unit is deploying without 100 percent of its pilots, and they believe that they will continue to be able to meet their operational missions. The services are able to fill their operational cockpits by extending some pilots on deployments and by sending senior pilots to what have traditionally been junior cockpit positions. However, the Air Force and the Navy, and to a lesser extent the Army and the Marine Corps, are all reporting that they are unable to fill some nonflying positions that they have designated for pilots. The services project that these shortages will continue for several years but the extent of these shortages has not been specifically determined. While the services have procedures to review their requirements, they have not comprehensively assessed whether all of their required positions truly need to be filled with active duty military pilots. If other personnel could fill some of these nonflying positions, the services could reduce their pilot requirements and thereby reduce their reported shortages. DOD needs to clearly determine the magnitude of the shortages and understand the extent to which the shortages are temporary or longer lasting before the services implement wholesale and potentially costly changes to their current aviator management systems.

The significance of reported and projected pilot shortages is difficult to ascertain because the basis for current pilot requirements has not been firmly established or documented. For example, while the Air Force has examined its nonflying positions, established certain priorities, and made the decision to leave more than 1,000 positions reserved for pilots unfilled, it has not formally transferred the 1,000 empty positions to other communities and is still carrying them as pilot requirements. The services have not sufficiently explained which nonflying positions active duty pilots must fill nor have they classified positions according to their operational nature or designated which positions are needed for career advancement purposes. In addition, the Air Force was unable to break down its data on pilot requirements and inventories in a way that would allow this type of comprehensive assessment. Without such information, the services cannot easily evaluate which positions it must fill on a priority basis or assess whether other personnel such as retired military personnel, reservists, warrant officers, military personnel who are not pilots, DOD civilians, or contractors could fill some positions in times of shortages.

Although data on pilot requirements is incomplete, GAO identified three key factors that are contributing to the services' reported and projected pilot shortfalls. First, the Air Force and the Navy reduced the number of pilots they recruited during the personnel reductions that occurred through most of the 1990s. This action has unintentionally contributed to an insufficient number of pilots to fill the overall current pilot requirements. Second, the Navy and the Marine Corps have experienced delays in their training pipelines due to problems in coordinating training phases, a lack of spare parts, and other factors. These delays have increased training times and reduced the number of pilots available for their first assignments. Third, many pilots are leaving the military before retirement since today's economy provides many career opportunities for pilots in private industry. The first two factors have resulted in what may be temporary shortages since the number of pilots entering pilot training has increased and the Navy and the Marine Corps are addressing the training backlog.

Pilots are reporting a number of concerns that are leading them to consider leaving the military—the high pace of operations, inadequate spare parts and equipment to effectively do their jobs, and dissatisfaction with leadership that, in their view, too easily accepts unacceptable demands on service personnel. Although these concerns are not unique to pilots, GAO identified two concerns that have particular relevance to pilots. First, many pilots are now being asked to remain in cockpit positions, which means they are not being given the opportunity to serve in other types of

career-enhancing positions. Some of these pilots have become concerned that they will not be competitive for promotion. In contrast, some pilots are pleased to be able to spend more time in the cockpit and have, in fact, expressed their dissatisfaction with assignments that take them away from flying. Both the Air Force and the Navy have considered fly-only career tracks in the past, but to date neither has adopted options that would match individuals who wish to fly additional duty with extra flying duty or instituted a fly-only career track that might deal more permanently with cyclical shortages.

A second concern is the ACP. A pilot's decision to accept a bonus no longer provides assurance that the pilot will stay in the military until the pilot is eligible to retire. Chief complaints voiced by pilots are that the ACP eligibility dates are outdated and that the end of the bonus payment at year 14 represents a cut in pay. Pending legislation, originally requested by DOD, would address this concern by giving the services the flexibility to offer bonus payments through a pilot's 25th year of aviation service.

GAO is making a number of recommendations to promote more accurate data on pilot requirements. These recommendations are intended to help the services identify opportunities to reduce their pilot requirements and, in doing so, reduce their reported shortages. GAO is also making recommendations to address pilot concerns that are causing pilots to consider leaving the military.

Principal Findings

The Air Force and the Navy Are Reporting the Greatest Pilot Shortages

The services currently report that they are able to fill their operational positions and that no unit is deploying without 100 percent of its pilots. The services have been able to fill their operational cockpits by extending some pilots on deployments and by sending senior pilots to positions formerly filled by more junior servicemembers. As a result, the current reported shortages are occurring primarily in the nonoperational flying and support positions.

The Air Force and the Navy are reporting the greatest shortages; within these two services, the shortages are more apparent in some pilot specialties than in others. At the end of fiscal year 1998, the Air Force projected that its greatest shortages would occur during fiscal years 2002 to

2007, primarily among its fighter, tactical airlift, and bomber pilots. The Air Force projected overall shortages of between 1,900 and 2,155 pilots, or between 14 and 16 percent of its pilot requirements. Fighter pilot shortages were projected to reach 820 pilots, or 17 percent of its fighter pilot requirements. Tactical airlift pilot shortages were projected to reach 311 pilots, or 15 percent of the tactical airlift pilot requirements. Likewise, the Air Force projected a shortage of 294 bomber pilots, or 28 percent of the bomber force pilot requirements. Despite these reported shortages, the Air Force believes that it will be able to continue to fill its operational cockpit positions and that shortages will occur in nonoperational positions.

The Navy believes that it experienced its greatest shortage of 1,153 pilots in fiscal year 1998, though it projects that a shortage will continue indefinitely. The Navy's shortage of 1,153 pilots, out of a requirement of 7,712 pilots, represented about 15 percent of its pilot requirements. In fiscal year 1998, the Navy was short 536 helicopter pilots, or 17 percent of its helicopter pilot requirements. In the case of propeller aircraft, the Navy was short 311 pilots, or 17 percent of its propeller aircraft pilot requirements. In the jet community, the Navy was short 216 pilots, representing about 10 percent of its jet pilot requirements. As in the Air Force, nonoperational positions will continue to be most affected by the shortages.

Basis for Pilot Requirements Has Not Been Clearly Established or Documented

Although the Air Force and the Navy are reporting shortages and predicting a continuation of those shortages, the services have not comprehensively assessed whether all of their required positions need to be filled with active duty military pilots. Currently, the Air Force's nonflying positions represent slightly more than 20 percent of its total pilot requirements and the Navy's nonflying positions represent 22 percent of its pilot inventory. These figures lack precision, however, because this type of breakdown does not capture the extent to which the flying and nonflying positions carry an associated operational or combat-related function as opposed to a nonoperational or support function. Disparate databases do not permit these services to uniformly report data on their pilot requirements and inventories nor do they enable the services to identify any imbalances in the various types of positions. In addition, job descriptions do not clearly explain why positions require active duty military pilots. If some positions could be filled with other personnel—such as navigators, warrant officers, retired military personnel, DOD civilians, contractors or reservists with the required aviation expertise—active duty pilot requirements, and thereby shortages, could be reduced. It is also possible that aviation expertise, while desirable, might not be absolutely necessary for some positions.

Predictions about future shortages must also be viewed within the limitations under which such predictions are made. Historically, pilot shortages have been recurrent and difficult to predict. For example, the Air Force revised its projections in April 1999 and is now projecting 355 fewer shortages than were projected at the end of fiscal year 1998.

Several Factors Are Contributing to Reported Shortages

GAO has identified three factors that are contributing to the services' reported shortages. First, the Air Force and the Navy reduced the number of pilots they recruited during the reductions in force during the 1990s to avoid the involuntary separation of pilots already in the force. This decision unintentionally contributed to an insufficient number of pilots to fill the overall current pilot requirements. Consequently, certain year groups are atypically small and current aviation personnel managers are challenged to find ways to fill requirements as this population matures through the workforce. The Air Force, for example, reduced active duty pilot accessions from more than 1,500 in fiscal year 1990 to approximately 500 annually during fiscal years 1994 to 1996. Recognizing that it needed to increase accessions, the Air Force has steadily increased its pilot production since that time. In fiscal year 1990, the Navy accessed 1,039 pilots; in fiscal year 1994 the Navy accessed only 471 pilots but has increased accessions since then.

Second, the Navy and the Marine Corps, which share the same pilot training facility, have experienced training delays due to problems in coordinating training phases, a lack of spare parts, and other factors. As a result, pilots have been delayed in reporting to their first operational assignments by as many as 40 weeks. The delays have left entry-level positions empty, and the requirement for new ensigns and lieutenants is going unmet.

Finally, pilots state that factors, such as a good job market, are making a career in private industry more attractive. Civilian airlines are experiencing an increased demand for pilots, and projections show this demand for experienced military pilots will likely continue. The airlines can ultimately pay greater salaries with less stringent schedules than the services. According to the Air Force, a pilot who currently leaves the military with 16 years of service is typically earning a regular military compensation of

about $78,000 a year, or more, depending on the location.[2] Although it will take the pilot more than 5 years to earn a comparable salary, since newly hired pilots start at the bottom in private industry, that same pilot could potentially earn as much as $160,000 a year before retiring at age 60.

Pilots' Concerns Are Contributing to Low Retention

The services have conducted studies of personnel matters during the past few years. While not all of the results are projectable to the entire pilot population, they did identify sources of frustration for military pilots. In addition, GAO administered questionnaires to more than 180 pilots in the Air Force and in the Navy from several different aviation career specialties. Although GAO also cannot project to the universe of pilots from this limited number, the responses were similar to the factors the services have identified in their studies. DOD surveys show that along with other military personnel, pilots are concerned about retirement and health care benefits, the high pace of operations, inadequate spare parts and equipment to effectively do their jobs, and dissatisfaction with leadership that, in their view, too easily accepts unacceptable demands on service personnel. However, certain concerns are specific to pilots. For example, a number of pilots raised concerns about the lack of opportunities for career development and promotions. While some pilots expressed concerns about the reduced opportunities for pilots to seek nonflying positions to broaden their experience and prepare for greater responsibilities, others expressed their desire to spend their careers exclusively in the cockpit.

Pilots also raised concerns about the ineffectiveness of the current retention bonus system that stops after 14 years of aviation service. Many pilots did not view the current bonus system as a viable retention tool. In fact, a pilot's decision to accept a bonus no longer provides the services with the assurance that the pilot will stay in the military until the pilot is eligible to retire at 20 years of service. The Air Force, for example, has seen increasing numbers of pilots resign after 14 years of service during the past 4 years. A chief complaint voiced by pilots is that the ACP eligibility dates are based on outdated assumptions. While it was previously assumed that pilots would stay until retirement once they reached 14 years of service, some pilots told us that they now see the end of the bonus payment at year 14 as a cut in pay and are more likely to leave their military service rather

[2]In computing a pilot's regular military compensation, the Air Force includes basic pay, basic allowance for subsistence (nontaxed), basic allowance for housing (also nontaxed), and the equivalent of the tax advantage that is derived from these last two categories.

than stay. DOD has developed a proposal that would authorize the services to continue bonus payments through a pilot's 25th year of aviation service. Provisions substantially similar to the DOD proposal are contained in pending legislation. The proposed legislation, if approved, will give the services the flexibility to implement their new bonus programs in a manner that will address the pilots' concerns. The Navy has already developed a model to offer bonuses to pilots at key career decision points throughout their careers in order to be a true bonus rather than an entitlement. However, GAO believes that the services might be able to phase out the bonus earlier than a pilot's 25th year of aviation service since pilots are rarely in the cockpit at that point in their careers.

Recommendations

GAO recommends that the Secretary of Defense direct the services to take the following actions:

- Develop criteria and detailed job descriptions for designating positions to be filled with pilots, classify the positions according to their operational and flying status, and specify the types of duties that make pilots essential. Moreover, for jobs that are held for pilots based on reasons of career development and rotation, descriptions should contain a clear justification.
- Using the newly developed criteria, analyze each pilot position to identify those positions where active duty pilots are not required and take the necessary actions to fill those positions with other personnel possessing appropriate expertise, such as warrant officers, retired military, contractors, DOD civilians, reservists, or navigators.
- Revise their databases so that the services can (1) uniformly report data on future pilot requirements and inventories and (2) identify any imbalances in their operational and nonoperational flying and nonflying positions.

To the extent that shortages exist after these recommendations are implemented, we recommend that the Secretary of Defense direct the services to take the following actions:

- More fully evaluate the merits of a fly-only career path for a segment of the pilot community. In the short term, identify those pilots desiring additional flying duty and match them to this extra duty to the extent possible.
- If the pending legislation to extend the ACP is enacted, only offer the bonus to those pilots who make affirmative decisions to continue their

career rather than to all pilots reaching specified gates. This would preclude the bonus program from being interpreted as an entitlement.

Agency Comments and GAO's Evaluation

In written comments on a draft of this report, DOD partially agreed with four of GAO's five recommendations, but stated that GAO's executive summary did not represent the sum and substance of the report as a whole in that it did not reflect the positive steps DOD had taken to address pilot issues. DOD also commented that GAO's recommendations were actually refinements to DOD's own initiatives. GAO added information to its executive summary to acknowledge DOD's actions and to better explain how GAO's recommended actions differ from ongoing efforts.

In disagreeing with GAO's fifth recommendation about the proposed bonus system DOD said that its current bonus systems are tied precisely to key career decision points and do not occur at arbitrary points in time, as GAO had originally suggested. GAO agrees that arbitrary is not a fair characterization of these points in time and has deleted this reference. GAO has revised its recommendation to better reflect its intent that the bonus system be offered to pilots as a reward for affirmative career decisions rather than being interpreted as an entitlement. In addition, GAO has clarified its report to emphasize that some assumptions about the success of bonuses in encouraging pilots to stay until retirement may be outdated and should be revisited.

In partially agreeing with GAO's other recommendations, DOD outlined existing and ongoing activities that it believes satisfy the intent of GAO's recommendations. Although DOD has taken positive steps to address pilot issues, GAO believes that DOD needs to build on these steps by establishing criteria for designating positions for pilots and identifying specific positions where active duty pilots are not needed. These actions would enable DOD to more systematically identify how positions could be filled with other personnel.

DOD also suggested several technical changes to the draft, which we have incorporated where appropriate. DOD's comments are presented in their entirety in appendix II.

Contents

Abbreviations

ACIP	aviation career incentive pay
ACP	aviation continuation pay
AIR, Inc.	Aviation Information Resources, Incorporated
ALPA	Air Line Pilots Association
DOD	Department of Defense
UPAS	Universal Pilot Application Service

Introduction

Military pilots serve in both flying and nonflying positions, and the services take several factors into account when they establish their pilot requirements. It takes several years and millions of dollars to produce pilots who are fully trained to serve in operational units. Due to the high costs associated with each loss of a pilot from the military, the services rely on incentive pays to retain their qualified pilots.

Requirements Include Flying and Nonflying Positions

At the end of fiscal year 1998, the Department of Defense (DOD) reported that it had about 28,000 active duty commissioned and warrant officer pilots.[1] These included approximately 13,300 pilots in the Air Force, 6,600 pilots in the Navy, 4,800 warrant officer pilots in the Army, and 3,300 pilots in the Marine Corps. The Army is the only service that uses warrant officers.[2]

The services include cockpit and nonflying positions when they determine their pilot requirements and take several factors into account. To determine the number of pilots they need to fill their operational cockpits, the services follow Defense guidance that defines the missions upon which they are to establish their operational requirements. From this guidance, the services calculate the structure of their squadrons and the number of crews for each aircraft by considering such things as the frequency and duration of sorties, time to repair aircraft and conduct routine maintenance, and crew rest time. The services also consider the number of additional pilots they need to support the squadron missions. These latter pilot requirements include positions such as squadron commanders, operations officers, squadron instructors, and safety officers.

Requirements for a given combat aircraft are fairly consistent; however, cockpit requirements for support aircraft will vary for specific types of aircraft, depending on their mission. For example, an Air Force C-9 aircraft used for medical evacuations within the Atlantic Command has a crew-seat ratio of three pilots per seat, whereas the same aircraft used for transporting personnel within the same command has a crew-seat ratio of

[1]This figure does not include pilots beyond paygrade O-5. It also does not include student pilots who are in basic flight training and have not earned their wings.

[2]Army warrant officers usually enter the service as enlisted personnel and are selected, based on their superior performance, to serve as specialists in the warrant officer community. In some cases, personnel will join the service and immediately enter the warrant officer program. Warrant and commissioned officers follow separate career paths and are subject to separate pay scales. Warrant officer pilots typically fly throughout their careers.

two pilots per seat. Air Force officials indicated that the pilot requirement for the medical evacuation aircraft is greater to enable the aircraft to operate around the clock in a combat environment. The total number of pilots needed to fill the cockpits is determined by multiplying the crew-seat ratio by the number of seats in the cockpit (which in the case of the C-9 is two). Therefore, each aircraft used for medical evacuations requires six pilots, and each aircraft used to transport personnel requires four pilots. This figure is then multiplied by the number of aircraft required to carry out a particular mission. For example, if 10 C-9 aircraft are needed for medical evacuations, the Air Force will have a requirement for 60 pilots. If 10 aircraft are needed to transport personnel, the Air Force will have a requirement for 40 pilots to operate the same number of aircraft.

Air Force C-130 aircraft used for search and rescue or electronic jamming have a crew-seat ratio of two pilots per seat. The C-130 aircraft has two cockpit pilot positions. Therefore, the total pilot requirement is four. If 10 C-130 aircraft are required to carry out search and rescue missions, the Air Force will have a requirement for 40 pilots. Alternatively, C-130 aircraft used in special operations have crew-seat ratios of 1.5 pilots per seat, reducing the pilot requirement for each aircraft to three. According to Air Force officials, the primary reason for the difference in the crew-seat ratios for these C-130 aircraft is the expected lower number of hours that the aircraft will be used each day. If 10 C-130 aircraft are required to carry out special operations, the Air Force will have a requirement for 30 pilots.

In contrast, crew-seat ratios for Air Force fighter aircraft do not show this variance because their missions do not change. For example, Air Force data for fiscal years 1997 through 2004 show a constant crew-seat ratio of 1.25 for F-15 and F-16 aircraft.

After the services determine their operational cockpit positions, they consider a number of other factors to determine their remaining requirements. These factors, which are not as quantitative as those that are used to determine operational cockpit requirements, include requirements to send pilots to operational staffs, joint duty assignments, assignments to the Office of the Secretary of Defense, staff positions for career enhancement, and pilot instructor positions. These requirements are added to the number of pilots required to meet operational flying missions.

The services anticipate that a certain percentage of their pilots will not be available for assignment at any given point in time due to factors such as education and training, medical conditions, and transfers between

assignments, and adjust their total pilot requirements upward accordingly. Currently, the Air Force uses a factor of 12 percent and the Navy uses a factor of 10 percent.

The Services Use Special Pays to Retain Their Pilots

Under ideal conditions, it takes DOD approximately 1½ to 2½ years, depending on the type of aircraft, to produce a fully trained, operational pilot. All military pilots, whether they will fly fixed- or rotary-wing aircraft, receive about 1 to 2 years of undergraduate pilot training. After completing their undergraduate pilot training and receiving their wings, graduates in all of the services then receive additional advanced specialized aircraft training before they are assigned to an operational unit.

The cost of a pilot's training and flying experience varies depending on the type of aircraft. According to DOD, the cost to train each military pilot through basic flight training is about $1 million, and the cost to fully train a pilot with the requisite operational experience can be more than $9 million. In exchange for their expensive training, each pilot incurs a commitment to serve an additional 6 to 8 years of aviation service following pilot training.[3] For example, the Air Force estimates a training cost of slightly more than $1 million to get an F-15 pilot through initial training and another $2 million through flight lead/aircraft commander qualifications. For an F-15 pilot separating at the end of the 8-year service obligation, the Air Force estimates that it will forfeit an investment of about $8 million. These figures include those costs associated with operating and maintaining the pilot training commands as well as those costs associated with operating and maintaining the aircraft used for training purposes in the operational squadrons. The figures also include the pay and allowances for command, staff, and support personnel at the training commands, but do not include the pay and allowances of the pilots in training. The Army estimates that it has invested about $2 million by the time an Apache helicopter pilot completes the service obligation.

In view of the investment in training its pilots, the services currently rely on a system of special pays to promote retention and avoid the cost of replacing pilots who leave. Upon entering basic flight training, each new pilot currently begins to receive aviation career incentive pay (ACIP),

[3]The Air Force will raise the commitment to 10 years beginning in fiscal year 2000. Pilots can also incur other obligations to serve in the military at various points in their military careers, usually for shorter periods of time, for such things as accepting orders to new assignments or attending particular schools.

commonly referred to as flight pay. The ACIP, which was designed to attract and retain officers in a military aviation career, starts at $125 a month for up to 2 years of service and rises over the years to $840 a month for a pilot with 15 to 23 years of aviation service. For the period of service after 22 years, the amount gradually decreases until it reaches $250 a month after 25 years of service.

Once pilots complete their initial aviation commitment, the services are authorized to offer bonuses, called aviation continuation pay (ACP), to encourage them to continue in their military career beyond the initial aviation obligation. The services have offered this incentive even in those cases where pilots have already incurred an additional obligation to serve the military for a few more years.[4] Current law[5] authorizes the services to pay ACP bonuses of up to $25,000 per year to aviators for each additional year of commitment if they have completed between 6 and 13 years of aviation service and agree to remain on active duty to complete 14 years of aviation service. Currently, the Air Force offers $22,000 per year to all pilots with the required years of aviation service who sign a commitment to stay in the service 5 additional years and smaller dollar amounts to those who sign a commitment for 1, 2, or 3 years. The Marine Corps offers $12,000 a year to pilots in targeted aircraft specialties where the shortages are critical. The Navy targeted its ACP bonuses to critically short pilot communities in the past but is now offering a flat 2-year bonus of $12,000 per year to all eligible pilots. The Army began offering aviation continuation pay for the first time in fiscal year 1999. Currently, the Army is offering $12,000 a year to Apache helicopter pilots. Table 1.1 presents the fiscal year 1999 ACP program by service.

[4]We previously reported on the ACP bonus in our report entitled Aviation Continuation Pay: Some Bonuses Are Inappropriate Because of Prior Service Obligations (GAO/NSIAD-95-30, Oct. 14, 1994).

[5]37 U.S.C. 301b.

Table 1.1: ACP by Service (fiscal year 1999)

Service	Annual payment	Duration	Eligibility
Air Force	$22,000	Long term[a]	All eligible pilots
	$12,000	3 years	
	$9,000	2 years	
	$6,000	1 year	
Navy	$12,000	2 years	All eligible pilots and naval flight officers
Marine Corps	$12,000	Long term	Pilots and naval flight officers in critically short aircraft specialties
Army	$12,000	Long term	Apache pilots

[a]Long term is defined as an agreement to stay through 14 years of aviation service.
Source: GAO from service data.

Military pilots, whether assigned to flying or nonflying positions, are eligible to receive both ACIP and ACP, provided they meet the other eligibility criteria.

Objectives, Scope, and Methodology

In response to concerns of the Chairman and former Ranking Minority Member, Subcommittee on Military Personnel, House Committee on Armed Services, about the potential impact of pilot shortages, we reviewed and identified reasons for the pilot shortages and solutions to alleviate the shortages. Specifically, we determined (1) the services' reported and projected estimates of their pilot shortages, (2) the basis for the services' pilot requirements, (3) key factors that account for the reported pilot shortages, and (4) concerns that are causing pilots to consider leaving the military.

To determine the extent of projected pilot shortages, we gathered data on pilot shortages from each of the services. We also gathered data on past shortages so that we could identify trends and place an historical perspective on the projected shortages. We concentrated on Air Force and Navy data when we conducted our analyses because these two services are reporting the greatest number of pilot shortages. Furthermore, we limited our scope to active duty pilots.

To determine the basis for pilot requirements, we documented the procedures used in determining requirements and what process the services follow to validate these requirements. In pursuing this objective,

we discussed methodologies with officials from the Office of the Secretary of Defense and the military services. We gathered data on Air Force and Navy flying and nonflying pilot requirements and worked closely with service officials to resolve discrepancies that appeared in different data sets that the services provided to us. In addition, we conducted our own analysis to categorize the flying and nonflying pilot positions according to whether they were operational or nonoperational. Our definition of operational positions, whether flying or nonflying, included those positions that exist primarily for conducting and supporting combat activity. Our definition of nonoperational positions included those positions that exist primarily to carry out support activities, training functions, and other noncombat related activities. We also reviewed 275 Air Force justifications for positions to be filled by active duty military pilots.

To identify factors contributing to reported shortages, we met with officials in each of the services to gain their perspectives on factors contributing to pilot shortages. In addition, we reviewed past retention studies conducted by the Congressional Research Service, the Congressional Budget Office, and private research organizations including the Commonwealth Institute and RAND.

To analyze the reasons why pilots are leaving the service, we reviewed quality-of-life surveys conducted by the Air Force and the Navy. In addition, to corroborate the results of these surveys, we administered our own questionnaire to more than 180 pilots in the Air Force and the Navy at 5 installations and conducted follow-on discussions with more than 120 of the pilots who responded to our questionnaire.[6] We selected the installations in order to talk to pilots in a number of different specialties. These included Air Force fighter and tactical airlift pilots and Navy helicopter pilots, jet pilots, and propeller aircraft pilots. While we cannot project our results to the universe of pilots from our limited number of questionnaires, the responses we received were consistent with existing studies, and the comments from the participants were instructive.

To determine the extent to which job opportunities exist for military pilots with the commercial airlines, we met with representatives from private industry, including the Air Line Pilots Association (ALPA) and the Universal Pilot Application Service (UPAS) and gathered data from Aviation Information Resources, Inc. (AIR, Inc.).

[6]Some navigators were included in these discussions.

To help us identify any lessons learned and possibilities for solutions from foreign militaries, we conducted interviews with defense officials from the German, British, and Australian embassies in Washington, D.C., and the Canadian National Defense Forces in Ottawa, Ontario. We also consulted the government auditing agencies of Germany, Australia, Canada, and Britain.

We performed our work at the following locations:
Directorate for Officer and Enlisted Personnel Management, Office of the Assistant Secretary of Defense, Washington, D.C.;
Air Force Personnel Center, Randolph Air Force Base, Texas;
Naval Bureau of Personnel, Arlington, Virginia;
Headquarters, U.S. Air Force, Arlington, Virginia;
Headquarters, Marine Corps, Quantico, Virginia;
Davis-Monthan Air Force Base, Tucson, Arizona;
Langley AFB, Norfolk, Virginia;
Naval Air Station, Cecil Field, Florida;
Naval Air Station, Jacksonville, Florida; and
Naval Station, Mayport, Florida.

We conducted our review between July 1998 and June 1999 in accordance with generally accepted government auditing standards.

The Air Force and the Navy Are Reporting the Greatest Pilot Shortages

The services currently report that no unit is deploying without 100 percent of its pilots, and they believe that they will continue to be able to meet their operational missions. The services have been able to meet their operational commitments by sending senior pilots back to junior positions and having pilots spend more time on deployments. In all communities, therefore, the shortages are occurring almost exclusively in nonoperational positions.

Currently, the Air Force and the Navy are reporting the greatest number of pilot shortages, and within these two services, the shortages are more apparent in some pilot specialties than in others. The two services project that their pilot shortages in nonflying positions will continue for the next several years, but that they will continue to be able to fill their operational cockpits. It is important to note, however, that shortages are historically recurrent and the services are limited in their ability to accurately project future pilot inventories.

The Services Report That They Can Fill Their Operational Requirements

The services currently report that they are able to fill their operational flying positions and that no unit is deploying without 100 percent of its pilots. The services report that this is at some cost, however, as they are only able to fill their flying positions by sending pilots back into the cockpit at higher ranks and having pilots spend more time on deployments. As a result of these actions, the shortages are occurring primarily in nonflying positions, and the services believe that they will continue to be able to fill their operational flying positions.

Air Force officials have made cockpit positions a staffing priority, and they are making a concerted effort to fill these positions before they fill their nonflying positions. The Air Force is filling its cockpit positions by sending senior-graded pilots back into the cockpit. Currently, approximately 3,100 pilots, or 54 percent of majors and lieutenant colonels, are filling junior cockpit positions normally filled by lieutenants and captains. Under ideal conditions, these pilots would be assigned to career development assignments to prepare them for future leadership positions. Generally, when a pilot reaches the major and lieutenant colonel level, the pilot would serve in positions such as squadron commander or operations officer.

The Chief of Naval Operations has set a goal that no unit will deploy without 100 percent of its required pilots—and the Navy has reported that no operational cockpit is going empty. The Navy has worked to fill its cockpits by extending the length of time that first tour operational pilots spend on sea tours from 36 to 42 months and by reducing the length of time

a pilot spends in shore tours from 36 months to 30 months. To accomplish this, the Navy is leaving some nonflying billets empty.

Current and Predicted Pilot Shortages

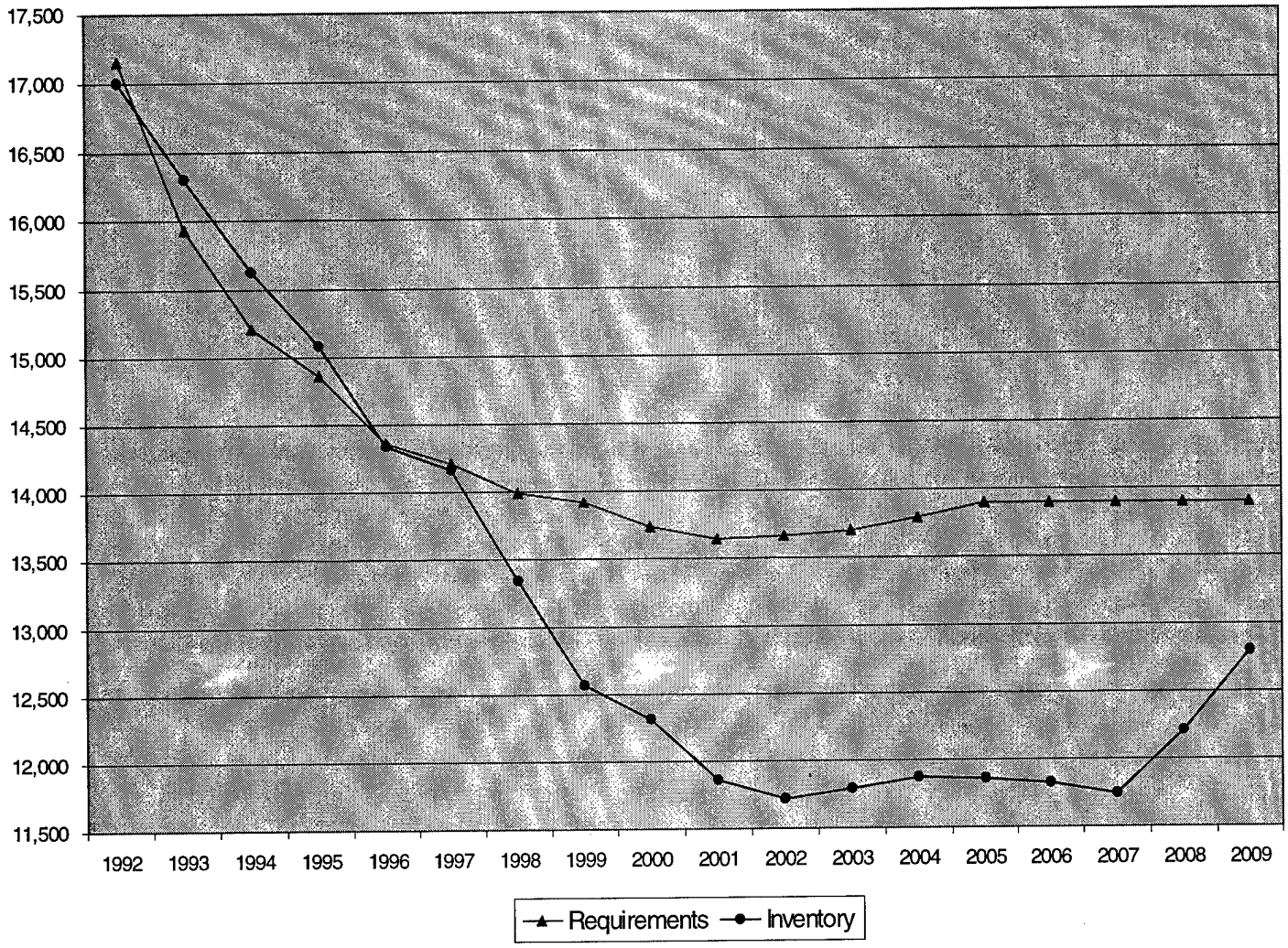
Despite being able to fill their operational positions, each of the services is reporting pilot shortages, but to varying degrees. At the end of fiscal year 1998, the Air Force anticipated that its greatest shortages would occur in fiscal year 2007, while the Navy reported that its greatest shortages already occurred in fiscal year 1998. The Army is only experiencing significant shortages within its Apache helicopter pilot community and believes it can address the shortages with management tools already available to it. The Marine Corps anticipates increasing shortages of fixed-wing pilots until fiscal year 2005. As noted, all services have given priority to filling their operational flying positions, and as a result, shortages are occurring almost exclusively in nonoperational positions.

Air Force Shortages Will Peak in Fiscal Year 2007

At the end of fiscal year 1998, the Air Force reported that it had a shortage of 648 pilots, or 5 percent of its 13,986 pilot requirement. The shortages were in the fighter and tactical airlift pilot communities. The fighter pilot specialty had a requirement of 4,876 pilots, with a shortage of 499, or 10 percent of fighter pilot requirements. Tactical airlift pilot requirements were 2,054, with a shortage of 113 pilots, or 6 percent of the tactical airlift pilot requirements.

At the end of fiscal year 1998, the Air Force anticipated that its most critical shortages would occur during fiscal years 2002 through 2007, when it projected shortages of between 1,900 and 2,155 pilots, or between 14 and 16 percent of its overall pilot requirements. Figure 2.1 displays the actual Air Force's stated pilot requirements and its inventory for fiscal years 1992 through 1998 and projected requirements and inventory for fiscal years 1999 through 2009. The divergence between requirements and the supply of pilots that begins in 1997 can be attributed in part to the affects of reduced pilot accessions in the early 1990s. This will be discussed in more detail in chapter 4.

Figure 2.1: U.S. Air Force Pilot Requirements Versus Inventory, Fiscal Years 1992-2009



Note: Air Force data include both flying and nonflying positions.

Source: GAO from fiscal year 1998 U.S. Air Force data.

The Air Force projected that its greatest shortage would occur in fiscal year 2007, and would continue in the fighter and tactical airlift communities; the Air Force also projected that shortages will begin to emerge in bomber pilot communities, peaking in 2007. The Air Force projected shortages of 15 percent of its tactical airlift pilots, 17 percent of

its fighter pilots, and 28 percent of its bomber force pilot requirements. Table 2.1 displays the key projected shortages for Air Force pilots in fiscal year 2007.

Table 2.1: Key Projected Air Force Pilot Shortages, Fiscal Year 2007

Aircraft type	Requirement[a]	Projected force size	Shortage	Shortage as a percentage of requirement
Tactical airlift	2,015	1,704	311	15
Fighters	4,715	3,895	820	17
Bombers	1,049	755	294	28

[a] Includes both flying and nonflying requirements. All aircraft types are not included.

Source: U.S. Air Force data from end of fiscal year 1998.

Navy Shortages Peaked in Fiscal Year 1998

Navy data shows that its greatest shortage of pilots was in fiscal year 1998. The Navy's shortage of 1,153 pilots, out of a requirement of 7,712 pilots, represented about 15 percent of its pilot requirements. Navy data also show that the greatest number of shortages occurred among those pilots who fly helicopters, followed by those who fly propeller aircraft, and, finally, jets. As shown in table 2.2, in fiscal year 1998, the Navy was short 10 percent of its requirements for jet pilots, 17 percent of its helicopter pilot requirements, and 17 percent of its propeller aircraft pilot requirements.

Table 2.2: Key Navy Pilot Shortages, Fiscal Year 1998

Aircraft type	Requirement[a]	Force size	Shortage	Shortage as a percentage of requirement
Jets	2,221	2,005	216	10
Helicopters	3,195	2,659	536	17
Propeller aircraft	1,845	1,534	311	17

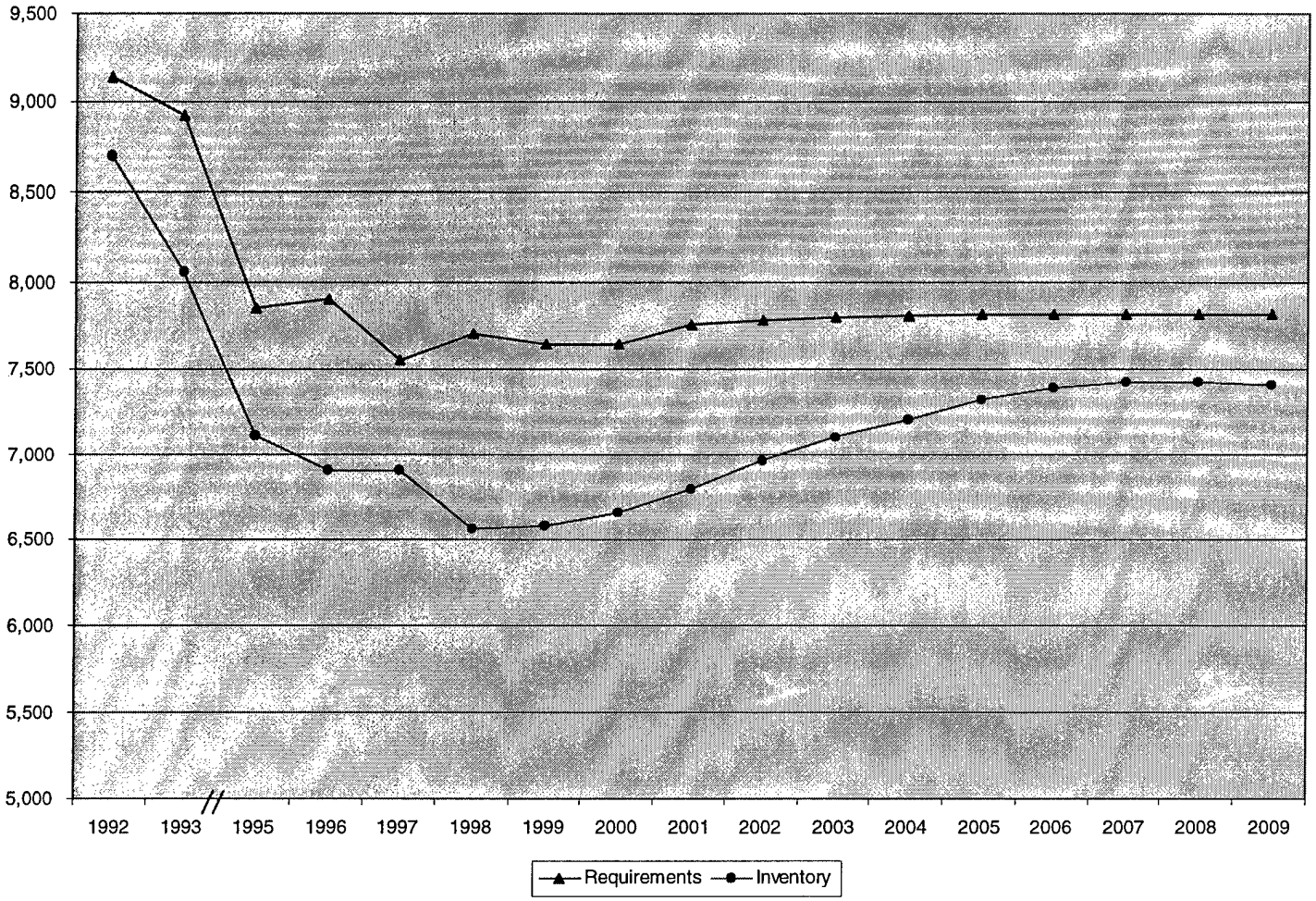
[a] Includes both flying and nonflying requirements. All aircraft types are not included.

Source: U.S. Navy data.

Over the next 5 years, the Navy projected that, if actions it is currently taking are successful, its pilot shortages will dissipate, but not disappear.

The overall shortage of Navy pilots is projected to improve from 15 percent to 8 percent by fiscal year 2004. The Navy projected that its propeller pilot community will be slightly healthier, with a shortage of 213 pilots out of a requirement of 1,845 pilots. This shortage represents 12 percent of the Navy's propeller pilot requirements, and shows an improvement from the shortage of 17 percent that the Navy experienced in fiscal year 1998. The jet pilot community is projected to improve slightly, from a shortage of 10 percent in fiscal year 1998 to 9 percent in fiscal year 2004, representing a shortage of 189 pilots out of a fiscal year 2004 jet pilot requirement of 2,211 pilots. Finally, the helicopter community is projected to see the most improvement, with its shortage declining from 17 percent in fiscal year 1998 to 5 percent in fiscal year 2004, when the Navy projects it will be short 161 pilots out of a requirement for 3,307 helicopter pilots. Figure 2.2 displays the Navy's pilot requirements and inventory for fiscal years 1992 through 1998 and projected requirements and inventory for fiscal years 1999 through 2009.

Figure 2.2: U.S. Navy Pilot Requirements Versus Inventory, Fiscal Years 1992-2009[a]



[a]The Navy's data from fiscal year 1994 was incomplete and is not included.

Note: Navy data include both flying and nonflying positions.

Source: GAO from U.S. Navy data and projections as of February 1999.

Army Shortages Are Limited to Apache Helicopter Pilots

According to Army data, in fiscal year 1998, the Army had an overall requirement of 4,745 warrant officer pilots and an inventory of 4,799 warrant officer pilots, for a surplus of 54 warrant officer pilots, or 1 percent. At the end of fiscal year 1998, the Army reported a shortage of 106 pilots out of a requirement of 1,059 pilots in its Apache helicopter pilot

force, or 10 percent. The Army projected that it would be able to meet its future Apache helicopter pilot requirements by (1) offering the ACP beginning in fiscal year 1999, (2) allowing certain pilots who were not promoted to stay on active duty, and (3) allowing others who left the service to return to active duty. The Army did not foresee a shortage for the rest of its helicopter fleet.[1]

Marine Corps Fixed-wing Pilot Shortages Will Peak in Fiscal Year 2005

The Marine Corps reported an overall shortage of 406 pilots at the end of fiscal year 1998, representing a shortage of about 11 percent of its overall requirement of 3,676 pilots. The Marine Corps reported shortages in its fixed-wing community–with a shortage of 311 pilots out of a requirement of 1,452 pilots, or 21 percent of requirements at the end of fiscal year 1998. The rotary-wing community reported a shortage of 95 pilots out of a requirement of 2,224 pilots, or about 4 percent of requirements.

The Marine Corps projected an increasing shortfall in the fixed-wing community culminating in a shortage of 402 pilots, or 29 percent of its requirement for 1,411 fixed-wing pilots in fiscal year 2005. Meanwhile, the rotary-wing community is predicted to experience a surplus of 145 pilots, or 7 percent above the 2,033 helicopter pilot requirements, in fiscal year 2005.

Pilot Shortages Are Recurrent and Difficult to Predict

It is important to note that pilot shortages in general tend to be recurrent. While the services undertake efforts to control the cycles of gains and losses in the pilot communities, the difficulties inherent in predicting the behavior of individuals make these efforts particularly challenging for personnel planners.

A previous GAO study shows that pilot shortages are not a new phenomenon. In 1982, for example, we reported that the Navy experienced or projected pilot shortages of between 10 and nearly 26 percent between fiscal years 1977 and 1983.[2] In that same report, we also found that the Marine Corps experienced or projected a pilot shortage of between 3 and 14 percent during the same time frame. In addition, the Air Force

[1]Unlike the other services, the Army has relatively few fixed-wing aircraft. The Army currently has 5,005 rotary-wing aircraft and 276 fixed-wing aircraft.

[2]Millions Spent Needlessly in Navy and Marine Corps' Aviation Bonus Program (GAO/FPCD-82-56, Aug. 9, 1982).

experienced pilot shortages in 7 of the fiscal years between fiscal year 1988 and fiscal year 1997, ranging from a high of 9 percent in fiscal year 1989 to a low of slightly less than 1 percent in fiscal year 1992.

Because of the difficulties inherent in making predictions, DOD's ability to predict future inventories is also limited. For example, in 1988, DOD reported to Congress that the Air Force had a shortage of about 1,300 mid-grade pilots. DOD further predicted that by fiscal year 1994, the Air Force would be short 2,900 pilots. Instead of experiencing this shortage, the Air Force had a surplus of 413 pilots, or about 3 percent of its requirements, in fiscal year 1994. Finally, mid-fiscal year 1999 figures demonstrate these points. For example, the Air Force now projects, as of April 1999, that its shortages will not reach their nadir until fiscal year 2008 and at that point will be about 1,800 rather than the 2,155 that the Air Force projected just 6 months before.

Opportunities May Exist to Reassess and Better Document Pilot Requirements

The current and projected shortages reported by the services must be viewed within the context of how they determine and document their pilot requirements. Pilot requirements are based on many other factors in addition to the number of cockpits that must be filled. For example, the services must reserve additional nonflying positions to provide pilots with opportunities for career development and relief from tours of duty where pilots are likely to be away from home. However, we found that the services have not comprehensively assessed all of the positions reserved for pilots to determine whether they truly need to be filled with active duty military pilots. If other military and civilian personnel who cost less and take less time to train could fill some positions, the services may be able to reduce their pilot requirements and thereby their reported shortages. Moreover, improved classification of pilot positions by their operational or nonoperational nature would help the services decide which positions should be filled on a priority basis in times of shortages and to better evaluate which positions might be filled by personnel other than active duty pilots.

The Services Reserve Nonflying Positions for Pilots for a Number of Reasons

As noted in chapter 1, the services consider a number of factors in establishing their pilot requirements. As a result of their requirements determination processes, a substantial number of nonflying positions are included in their requirements. Accordingly, a number of nonflying positions for pilots are needed to permit them to advance in their careers and avoid excessive deployments away from home. Pilots in the Air Force, the Navy, and the Marine Corps are commissioned officers and, as such, they are required to fill duties in addition to their flying responsibilities. The usual career progression for pilots includes rotations through flying and nonflying positions because the services view staff assignments as essential to the development of officers who will assume greater leadership responsibilities. In addition, other opportunities for pilots to receive graduate school education or training require them to be assigned to nonflying billets at certain times in their careers. Nonflying positions also permit pilots respites from deployment cycles and offer opportunities for pilots to participate in community and family activities and engage in academic pursuits. Such assignments allow pilots intervals at home between deployments, which some officials believe favorably affects retention.

The Air Force's nonflying positions currently represent slightly more than 20 percent of its total pilot requirements, and the Air Force expects this to

remain relatively constant over the next several years. The Navy's nonflying positions currently represent 22 percent of its pilot inventory.

Job Descriptions for Nonflying Positions Do Not Fully Explain the Requirement for Pilots

Job descriptions for nonflying positions do not explain why the positions have to be filled by active duty pilots. For example, the Air Force prepares job descriptions to demonstrate why active duty pilots should fill nonflying positions and provided us with a sample of pilot justifications for 275 Air Force Headquarters staff positions. Pilots in these nonflying positions perform a range of duties, including planning deployments, providing guidance for developing cockpit avionics and displays, and evaluating modernization proposals to existing and future aircraft. In these job descriptions the Air Force demonstrated that particular work centers require a mix of pilots and other personnel. However, the justification for a specific number of pilots was not clear because the job descriptions did not explain how these designations or skill mixes were established. For example, one job description called for a pilot with the rank of major to serve in a policy and programs division within a test and evaluation directorate. However, the job description also stated that the work center consists of six aviators, six officers who are not aviators, and two civilians. It did not demonstrate how the mix of personnel was determined. While the Navy maintains brief descriptions for its different positions, these descriptions also do not clearly explain why these positions need to be filled with active duty pilots.

Personnel Other Than Active Duty Pilots Might Be Able to Fill Some Requirements

Several opportunities exist to reduce current active duty pilot requirements and fill those positions with other personnel. In 1997, we recommended that the services develop criteria and review the duties of each nonflying position to identify those that could be filled by personnel other than pilots.[1] We noted that such an assessment could allow the services to reduce their pilot requirements. These other personnel could include warrant officers, retired military, contractors, DOD civilians, reservists, or navigators and naval flight officers. During our current review, we found that the Air Force has converted more than 500 positions formerly reserved for aviators and is filling them with other Air Force officers. The Air Force has also examined its nonflying positions, established certain priorities,

[1]DOD Aviator Positions: Training Requirements and Incentive Pay Could Be Reduced (GAO/NSIAD-97-60, Feb. 19, 1997).

and made the decision to leave more than 1,000 positions reserved for pilots unfilled. However, the Air Force has not formally transferred the 1,000 empty positions to other communities and is still carrying them as pilot requirements. We also found that the Navy has left certain nonflying positions unfilled and has not formally transferred its nonflying positions to other communities.

The Navy is currently predicting an excess of naval flight officers beginning in fiscal year 2001, increasing to a surplus of 344 naval flight officers by fiscal year 2004. The Navy also reports that most of its nonflying positions are interchangeable and can be filled by either pilots or naval flight officers and that it takes less time and money to train a naval flight officer than a pilot. This extra pool of aviators created by the surplus of naval flight officers could be used during pilot shortages to fill some of the nonflying positions currently reserved for pilots. The Air Force also has a surplus of navigators that could be used to fill nonflying positions.

In addition, the Navy is exploring the possibility of filling a few positions, such as hangar deck officers and fuels officers, with limited duty officers[2] and chief warrant officers. The Navy recently explored this issue in June 1999. The Navy has also prioritized its general and unrestricted officer positions that do not require flying or combat operations to determine how many should be filled by air, surface, and submarine warfare officers. However, since retention challenges exist in all warfare communities, the Navy is reluctant to pass the aviator share of these positions on to other communities. This continuing problem reflects the importance of thoroughly reviewing whether civilians or others could fill some positions.

The Air Force addressed the issue of how to best fill its nonflying positions at a conference on April 13, 1999. One of the recommendations coming out of this conference was to examine the Air Force nonflying positions and identify alternatives to filling them with pilots. Alternatives being considered include using civilian contractors, reserve officers, and nonpilots and allowing former active duty pilots to return to military service. Returning former active duty military pilots to the cockpit is not entirely new. Since 1995, the Air Force's recall program has resulted in 114 pilots being returned to active duty. The Army has instituted a recall

[2]Limited duty officers are former enlisted personnel who, on the basis of their outstanding performance, compete to become commissioned officers. They enjoy the same precedence and exercise the same authority as unrestricted commissioned officers. However, their promotion potential is limited to the Navy rank of captain.

program for former active duty Army pilots. This voluntary recall program has resulted in 111 pilots accepting, with nearly all now on active duty. Similarly, the Navy has an active duty recall program focusing on intermediate strike instructor pilots associated with Naval reserve units.

Through our work, we found that the British Royal Air Force provides an example of aviator requirements being reduced successfully. The Royal Air Force, which has 3,714 pilots and navigators (of the equivalent of major rank and below), is experiencing pilot shortages. After analyzing 1,230 ground-based aviator positions, the Royal Air Force determined that 465 or 38 percent could either be transferred to other branches or eliminated. This reduction in requirements was the second major round of cuts for the Royal Air Force in recent years. In the last round, more than 250 positions were removed or transferred. In addition, the Royal Air Force reviewed nonoperational flying positions and identified an additional 61 positions for removal or transfer. Each squadron was asked to rate its aviator positions for aviator essentiality. Headquarters personnel reviewed these justifications and returned questionable justifications to the squadrons for confirmation. This difficult process resulted in a dramatic cut in requirements. Royal Air Force officials also told us, however, that their actions increased the number of ground-based personnel needed to fill the positions previously designated for aviators, and that it would take 5 to 8 years to fully staff these positions with ground-based personnel.

We acknowledge that converting pilot positions will be a long-term process and that it will take time for other communities to absorb pilot requirements that may be transferred to them. However, given the high costs and length of time associated with training pilots, we continue to believe that converting pilot requirements has merit.

Current Reporting of Flying and Nonflying Positions Has Limited Utility

The services' reporting of data on flying and nonflying positions lack precision because this type of breakdown does not capture the extent to which these positions carry an associated operational or primary military function as opposed to a nonoperational or support function. Without this information, it is difficult to evaluate which positions the services should fill on a priority basis and whether some positions could be filled by other personnel during times of shortages.

Operational positions, whether flying or nonflying, include those positions that exist primarily for conducting combat activity. Positions that are operational and flying would include cockpit positions that have a combat

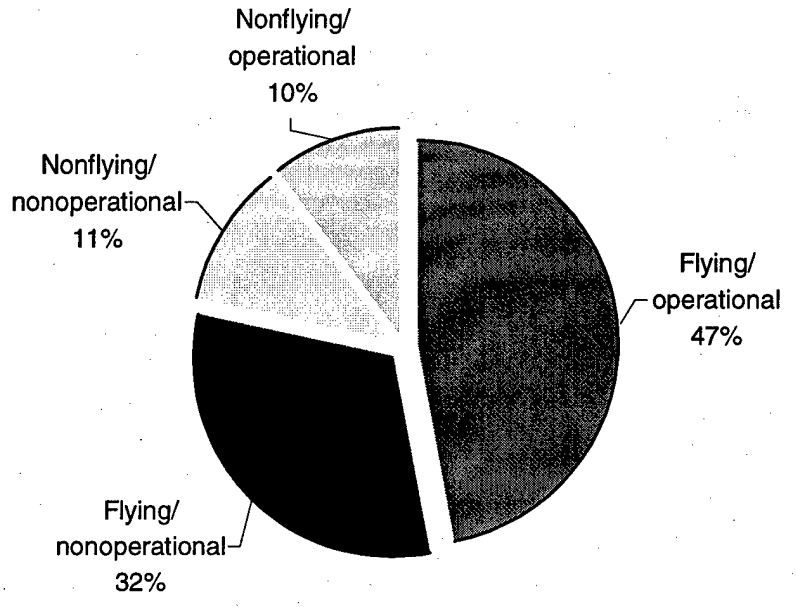
mission. Positions that are operational but nonflying require a pilot because of the pilot's aviation background, experience, or warfare expertise; however, these positions do not require a pilot to operate an aircraft in support of specific military operations. Examples of positions that are operational and nonflying would include catapult and arresting gear officers on an aircraft carrier and joint staff officers who develop operations plans.

Pilots in nonoperational positions carry out support activities, training functions, and other noncombat related activities. Nonoperational positions that have a flying aspect are designated for pilots who fly frequently in the performance of their duties but do not have a direct combat mission, such as flight instructors and test pilots. Nonoperational positions that do not have a flying requirement are designated for pilots based on the needs of the service to fill officer billets. These positions may draw on the pilot's expertise or they may be general enough for any officer to perform. These positions would include positions such as accident investigators, advisors to foreign militaries, military academy teachers, and recruiters.

We attempted to analyze the extent to which Air Force and Navy pilots are serving in positions that are flying, nonflying, operational, and nonoperational. We concentrated on these two services when we conducted our analyses because they are reporting the greatest number of shortages. The Navy provided us with figures to demonstrate its pilot distribution according to these categories. According to mid-fiscal year 1999 data provided by the Navy, its total pilot inventory was 5,575.[3] About 3,200 of these pilots were in operational positions. Of these, approximately 2,600 pilots were in operational positions that are flying and 600 pilots were in operational positions that are nonflying. The Navy also had 2,375 pilots in nonoperational positions. Of these, 1,750 pilots were in flying positions and 624 pilots were serving in nonoperational billets that are nonflying. Figure 3.1 displays the percentages of Navy pilots that fill these different types of positions.

[3]These figures exclude about 745 pilots who were categorized as unavailable for duty because they were in transit between duty stations, in training, on medical leave, or imprisoned.

Figure 3.1: Distribution of Inventory of Navy Pilots by Category, as of April 1999



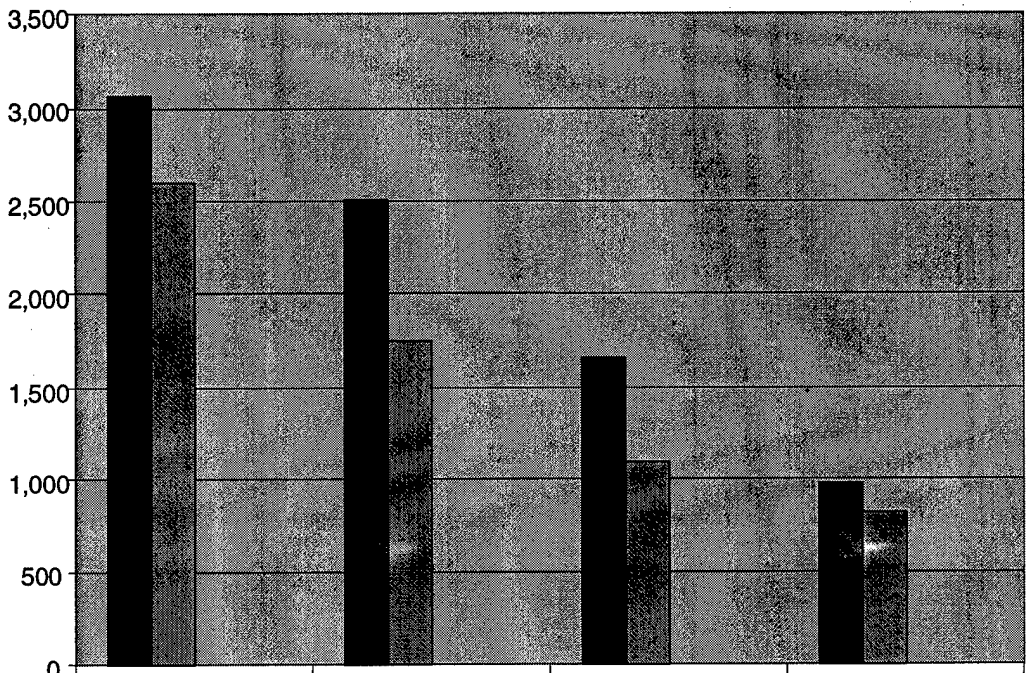
Source: GAO from U.S. Navy data.

Certainly, the justification is greatest for military pilots to fill flying operational positions since this is what they have been trained to do. The possibility exists that personnel other than active duty military pilots could fill some of the flying nonoperational and nonflying positions. Especially during a period of critical pilot shortages, it is not clear why the Navy is filling 624 positions that are both nonflying and nonoperational with pilots. These 624 positions represent 55 percent of the Navy's mid-fiscal year 1999 shortage of 1,130 pilots and provide the Navy with several possibilities to fill some of these positions with personnel other than active duty military pilots.

This type of analysis is also useful in that it can identify for the services the extent to which they are filling their positions on a priority basis. For example, Navy data show that the Navy is currently experiencing a 15-percent shortage in its flying operational positions, a 30-percent shortage in its flying nonoperational positions, a 34-percent shortage in its nonflying operational positions, and 16-percent shortage in its nonflying nonoperational positions. As previously noted, the Navy has been able to fill its operational cockpits by extending some pilots on deployments and

by sending senior pilots to positions formerly filled by more junior service members. The Navy is meeting the nonflying levels by using both pilots and naval flight officers. Figure 3.2 shows the number of positions, by category, and the extent to which each category is filled.

Figure 3.2: Navy Pilot Positions and Inventories



	Flying/ operational	Flying/ nonoperational	Nonflying/ operational	Nonflying/ nonoperational
Positions	3,067	2,512	1,659	973
Inventory[a]	2,602	1,751	1,097	820
Shortage	-465	-761	-562	-153
Shortage as a percent of requirement	15%	30%	34%	16%

[a]Nonflying/operational and nonflying/nonoperational inventories include both naval flight officers and pilots.

Source: GAO from U.S. Navy data.

The Air Force provided us with a breakdown of its flying and nonflying positions but was unable to identify which of the nonflying positions were

nonoperational. Currently, approximately 1,000, or 36 percent of the Air Force's nonflying positions are vacant. These positions are equivalent to 47 percent of the 2,155 pilot shortages that the Air Force projects will occur in fiscal year 2007. Although it may not be realistic to assume that the Air Force could convert all 1,000 positions, they do provide the Air Force with several opportunities to reevaluate its requirements and fill some of these positions with personnel other than active duty military pilots.

Several Factors Are Contributing to Reported Pilot Shortages

Several factors have contributed to the services reported current and projected pilot shortages. First, the Air Force and the Navy reduced their new pilot entries (accessions) during the military downsizing that began in the early 1990s. Because fewer pilots entered the force, the services are now reporting shortages in relation to their pilot requirements. In addition, the Navy and the Marine Corps have experienced training delays that have resulted in pilots reporting to the final phase of their training as many as 40 weeks late. Furthermore, the current economy is providing military pilots with job opportunities in private industry and pilots are finding the pay and benefits associated with those job opportunities attractive.

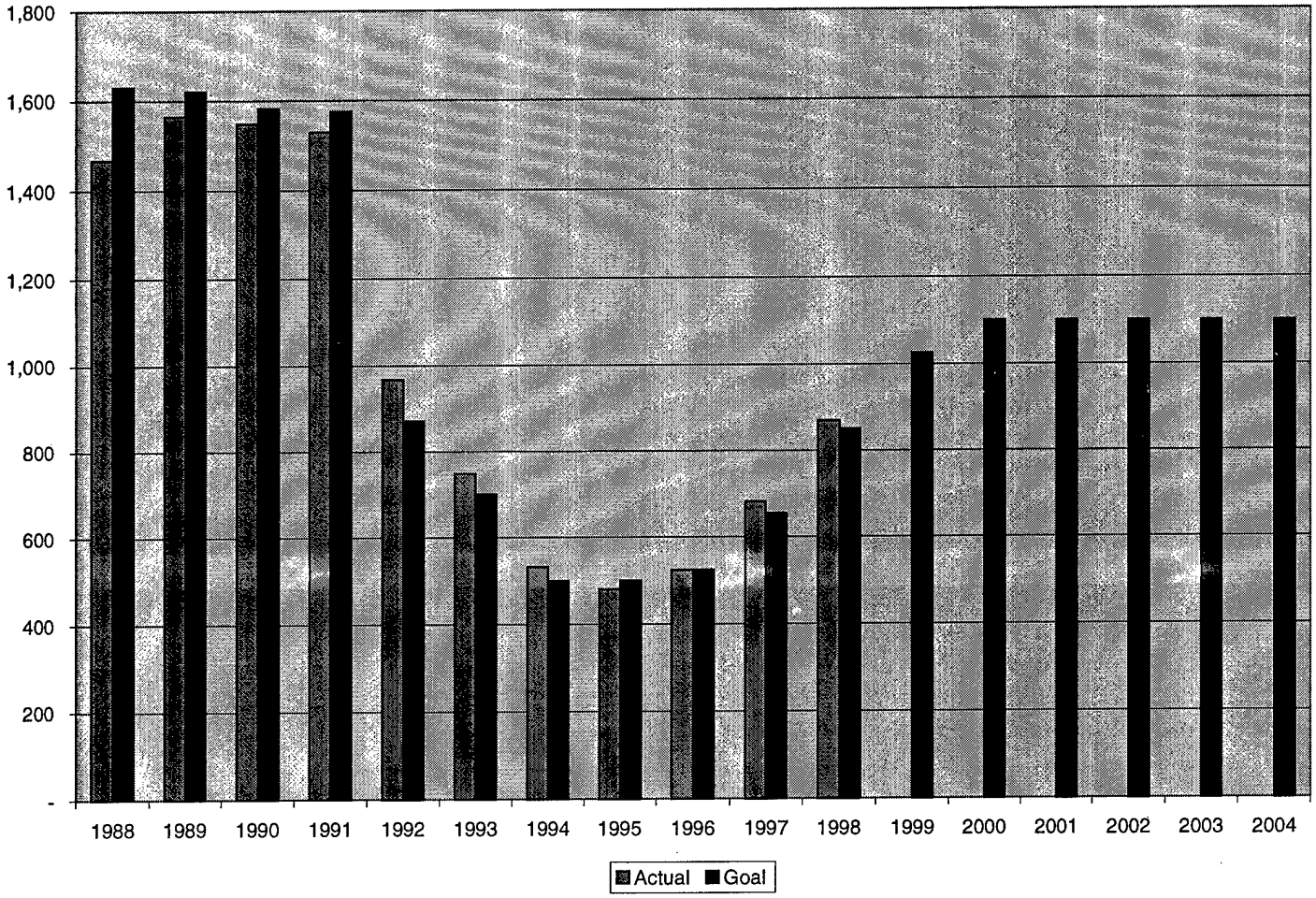
The Air Force and the Navy Reduced Pilot Accessions in the 1990s

During the military force reductions that took place during this decade, the Air Force and the Navy significantly reduced their pilot recruiting goals and actual new pilot accessions. One of the intended purposes behind these decisions was the desire to arrive at a smaller force by taking in fewer new pilots instead of forcing highly experienced and highly trained pilots already in the force to leave the military. Although the decisions to reduce accessions may have helped the services avoid involuntary personnel separations, they have produced the unintended consequences that the services are facing today. The services did not foresee today's operating environment, which includes a high level of military operations, a much smaller force, a sustained good economy, and an expanding private airline industry that provides military pilots with ample civilian job opportunities. Consequently, these actions have produced insufficient numbers of pilots to support current requirements, which has contributed to the services' need to retain more pilots. Certain year groups are atypically small, and current aviation personnel managers are challenged to find ways to fill requirements as this smaller pilot population matures through the workforce.

The Air Force, for example, reduced active duty pilot accessions from more than 1,500 new pilots in fiscal year 1990 to approximately 500 new pilots each year during fiscal years 1994 through1996. Recognizing that it needed to increase accessions, the Air Force has steadily increased its pilot production since that time. The service accessed approximately 900 new pilots in fiscal year 1998 and expects to meet its capacity of 1,100 new pilot accessions by fiscal year 2000. The capacity to access pilots beyond 1,100 is limited by the current number of training facilities and training slots for new, inexperienced pilots. Figure 4.1 shows Air Force pilot actual accessions and goals for fiscal years 1988 through 1998 and projected goals for fiscal years 1999 through 2004. The lack of a gap between accessions

and goals during these fiscal years reflects the decision to lower the accession goals during this time.

Figure 4.1: U.S. Air Force Pilot Goals and Accessions, Fiscal Years 1988-2004

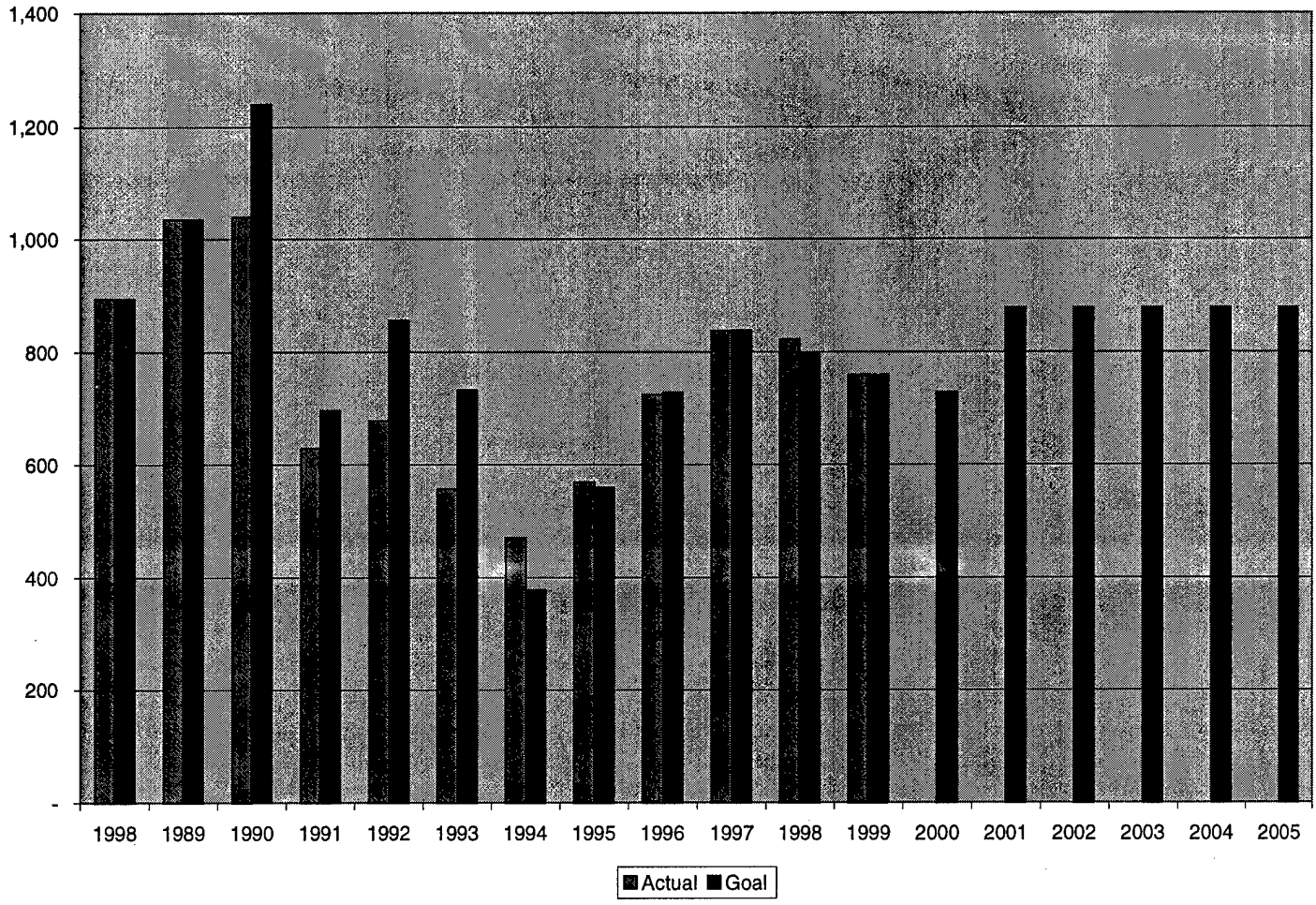


Source: GAO from U.S. Air Force data.

The Navy experienced a similar pattern. In fiscal year 1990, the Navy accessed 1,039 student pilots; in fiscal year 1994, the Navy accessed just 471 student pilots. In fiscal year 2000, the Navy will access 728 new pilots and thereafter will access 878 student pilots each year for the foreseeable future. Figure 4.2 shows Navy pilot actual accessions and goals for fiscal

years 1988 through 1999 and projected goals for fiscal years 2000 through 2005.

Figure 4.2: U.S. Navy Pilot Goals and Accessions, Fiscal Years 1988-2005



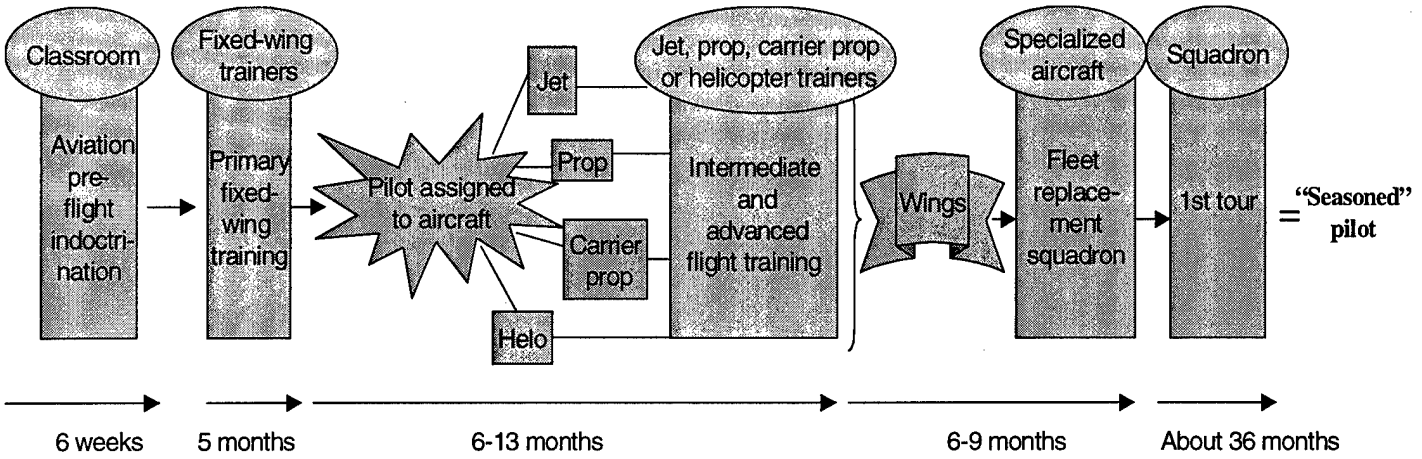
Source: GAO from U.S. Navy data.

The Navy and the Marine Corps Have Experienced Significant Delays in Their Training Pipelines

In addition to problems with pilot accessions, the Navy and the Marine Corps have experienced significant delays in moving new trainees through their new pilot training pipelines. In some cases, it has taken 40 weeks longer than expected to produce trained pilots. These delays have further contributed to the pilot shortages. Fiscal year 1998 data show that there were about 600 new Navy student pilots still in training who should have already reported to their first operational assignments. This increase in training time, coupled with the smaller numbers of new pilots created by reduced accessions, has exacerbated the shortfalls in both the Navy and the Marine Corps. However, the Navy now has a working group to better integrate the different phases of training to minimize delays and to identify choke points.

For the most part, Navy and Marine Corps student pilots train side-by-side, and all pilots must first complete naval undergraduate pilot training, which is divided into several segments, before they receive their initial qualifications, or wings. These segments include aviation preflight indoctrination, primary fixed-wing training, intermediate flight training, and advanced flight training. Preflight indoctrination takes place in a classroom setting. Primary fixed-wing training takes place in fixed-wing trainer aircraft, regardless of the type of aircraft the Navy or the Marine Corps aviator will ultimately fly. Following the preflight indoctrination and the primary fixed-wing training, the services decide what aircraft the pilot will fly depending on the pilot's grades, the desires of the pilot, and the needs of the service. The pilot in training begins to specialize at this point in time and is assigned to one of four tracks to receive the intermediate and advanced flight training. These tracks are (1) jet aircraft, (2) carrier propeller aircraft, (3) propeller aircraft, and (4) helicopters. Upon successful completion of the advanced flight training, pilots receive their wings. New pilots then proceed to a fleet replacement squadron, at which point they receive specialized training in a specific type of operational aircraft. Depending on the type of aircraft, this specialized training will take an additional 6 to 9 months. It is at this point in time that a pilot is prepared to report to his or her first operational squadron. At the completion of this 3-year operational tour, the Navy and the Marine Corps consider the pilot to be "seasoned." Figure 4.3 displays the planned training pipeline from commissioning through the completion of the first operational assignment.

Figure 4.3: Naval Undergraduate Pilot Training Pipeline



Note: The Navy also adds in travel times of roughly 2 weeks between each training segment.

Source: GAO from U.S. Navy and U.S. Marine Corps information.

Marine Corps pilots follow the same training track, with the exception that they, like all other new Marine Corps officers, are required to attend the Basic School at Marine Corps Base Quantico, which lasts 26 weeks, prior to reporting to pilot training.

Data provided by the Navy in June 1999 illustrating current training times—from the beginning of pilot training through the assignment to a fleet replacement squadron—demonstrate the magnitude of the training delays. For example, the planned time to train for a jet pilot through the fleet replacement squadron is 30 months, but the actual time to train was 45 months, representing a delay of 15 months or approximately 65 weeks. In the case of propeller aircraft, the planned time to train is 24 months, but the actual time to train was 30 months, representing a delay of 6 months or approximately 26 weeks. In the case of helicopters, the planned time to train is 24 months, but the actual time to train was 28 months, representing a delay of 4 months or approximately 16 weeks.

Data provided to us by the Marine Corps, as of February 1999, demonstrate the delays pilots in training have been experiencing even before they reported to the fleet replacement squadron. For example, the planned time to train a jet pilot through wings—including the 26 weeks for Marine Corps Basic School and 4 weeks for travel—is 105 to 119 weeks, depending on the

training aircraft used. However, the actual time to train was 145 to 153 weeks, or a delay of 32 to 41 weeks, depending on the type of jet trainer used. In the case of propeller aircraft and helicopters, the planned time to train to earn wings is 90 weeks, and the actual time to train was 120 to 129 weeks, or a delay of 30 to 39 weeks.

Navy officials attributed these delays to several factors. For example, while the services may have emphasized getting a student pilot through a particular phase of the pilot training, these phases were not properly coordinated, and backlogs occurred while student pilots waited to report to the next segment. Additional problems have occurred at the fleet replacement squadrons. Officials attributed many of the delays during this phase of training to a lack of spare parts, available aircraft for training, mechanical problems with some trainer aircraft, and shortages in enlisted air crew. They explained that the fleet replacement squadrons find themselves competing with the operational squadrons for parts and aircraft, and they have often been given lower priority.

The Navy has contracted with a private firm to help the Navy and the Marine Corps to better align the different phases of training in order to decrease the delays between segments and better coordinate all areas of training. As a result, delays have come down between 6 and 26 percent, depending on the community.

Today's Economy Provides Pilots With Civilian Job Opportunities

The potential for job prospects in private industry, the allure of potentially large salaries, and the appeal of private airline retirement packages are currently providing military pilots with attractive options. Commercial airline hiring projections made by private industry suggest that the current demand for experienced military pilots will likely continue. Projections of airline hiring factor in an increased requirement for pilots caused by growth in the regional and major airline industries and mandatory airline pilot retirement at age 60. Any increases that result from airline industry expansion or continuing favorable economic conditions will further fuel the commercial airlines' need for pilots. Military pilots possess skills that are readily transferable to the airlines industry. They have received extensive formal training in areas such as aircraft systems, aerodynamics, air traffic control procedures, and meteorology. Further, military pilots can be easily trained on the jet and/or heavy aircraft qualifications required by the airlines.

DOD closely monitors data produced by Aviation Information Resources, Incorporated (AIR, Inc.), which studies various trends within the commercial airline industry. Currently, this company is projecting significant growth among the private airlines. In a 1998 job market analysis, AIR, Inc., reported that 57,019 pilots were employed by the 14 major U.S. airlines in 1998 and projected that 40,000 new job openings to fly large jets would occur due to industry growth, pilot attrition, and retirement by 2007. The AIR, Inc., analysis also projected that the number of U.S. commercial aircraft would grow from 7,334 aircraft in 1997 to 9,218 aircraft by the year 2005. In terms of retirement, the analysis reported that many pilots hired during a big hiring surge in the mid-1960s are now retiring. The analysis showed that there were more than 1,150 major airline pilot retirements in 1997 and projected that there would be an additional 16,400 pilot retirements by 2007. For one major airline alone, AIR, Inc., projected that 54 percent of that company's pilots would retire between 1998 and 2008.

Military pilots find the potential for large salaries and lucrative retirements attractive. Although initial private airline salaries are low, they can grow significantly. AIR, Inc., reported in 1998 that the average annual pay for pilots in the first year of employment in the 14 major airlines was $30,144. However, AIR, Inc., also reported that this average salary could rise to $161,052 for an airline captain who has more than 10 years of employment in 1 of the 14 major airlines. (Of the 14 major airlines, AIR, Inc., reported that the salary range for pilots in the highest bracket is between $92,424 and $195,480.) In addition, the airlines offer generous retirement packages. AIR, Inc., estimated that the value of a 30-year career with one of the three largest major airlines for a pilot, hired at age 30, who flies until age 60 and enjoys a normal retirement, is between $6.7 to $8.0 million. (It is very unlikely that a military pilot could fulfill a minimum military service obligation and a 30-year career with a commercial airline. However, a military pilot may be able to complete a 29-year career.)

Military pilots also consider the fact that airline salaries are driven totally by seniority within a particular airline. Although increased experience within the military, a private regional airline, or another major airline might make a pilot more competitive for employment, this additional experience will have no bearing on the pilot's salary with the particular airline. One consequence of this structure is that military pilots experience a reduction in their pay before they start receiving the larger salaries.

The following scenario illustrates this. According to the Air Force, a typical military pilot with 10 years of experience who is promoted at

normal rates currently receives an annual regular military compensation[1] of about $57,000. When flight pay is added, the salary grows to approximately $65,000. (This figure assumes that a pilot has not accepted a retention bonus and also does not include any local cost of living adjustments, which vary depending on where a pilot is assigned.) In addition, a pilot with 10 years experience is likely to be assigned to a nonflying position in the military that will reduce his or her competitive status in the airline industry. If that pilot decides to leave the military and finds employment with 1 of the 14 major airlines, that pilot will receive an average starting salary of about $30,000, representing a salary reduction of about half of the military compensation. However, this pilot is facing the potential for greater pay and benefits. By the 6th year, that same pilot will receive a private industry average salary of about $88,000 and will have 6 years of contributions into a retirement plan, increased retirement benefits, and increased seniority in the airline. The pay alone will be approximately equivalent to the salary the pilot would receive had he or she stayed in the military. A typical salary for a military pilot with 16 years of service is about $78,000. When flight pay is added in, the pay is equivalent to approximately $88,000.

The Air Force has calculated that military pilots who ultimately leave the military to go to a private airline lose a percentage of their lifetime earnings in each additional year that they stay in the military. Several factors account for this. First, the initial pay differential increases as the military salary rises. Second, the number of years in which a pilot can participate in a commercial airline retirement plan decreases. Finally, military pilots will attain seniority in the commercial airlines, and the associated larger salaries, later in their careers. According to Air Force calculations, the total career earnings of a pilot who enters the military at age 22, leaves the military after 9 years, is hired by a private airline, and then retires at age 60 is $4,368,460. Conversely, the total career earnings of a pilot who enters the military at age 22, accepts a retention bonus, retires at 20 years of service, receives military retirement pay, is hired by private industry, and then retires at the mandatory age of 60, is $4,063,472. According to Air Force calculations, it will cost the military member almost $305,000 to remain in the service until retirement.

[1]In computing a pilot's regular military compensation, the Air Force includes basic pay, basic allowance for subsistence (nontaxed), basic allowance for housing (also nontaxed), and the equivalent of the tax advantage that is derived from these last two categories.

In addition to job opportunities and potentially more lucrative pay and benefits packages, many pilots are attracted to private industry by the promise of a better quality of life and a chance to spend more time with their families. Military members often work long hours and spend extended periods of time away from their homes. Conversely, private industry officials told us that many commercial pilots work no more than 15 days a month. Although these pilots may spend many of these nights away, they will also spend the remainder of the month at home. Private industry officials described a commercial pilot's job as the best "part-time" job an individual could find.

There is, of course, a down side to joining private industry, and one of the biggest problems is a lack of job security. In the early 1990s, for example, the airline industry laid off approximately 2,000 pilots. Because the airlines operate exclusively under a seniority-based system that is company specific, a commercial pilot with years of experience who leaves one airline to join another will be hired at a entry-level salary. Commercial pilots in mid-career can expect to experience significant salary reductions should the airline industry face future downturns.

Pilot Concerns Are Contributing to Low Retention

Air Force and Navy actions to reduce pilot accessions during DOD's reductions in force and the training delays in the Navy and the Marine Corps have produced reported pilot shortages and are driving the need to retain more pilots in the service. Furthermore, this need to retain additional pilots is exacerbated by an increase in pilot resignations. The services have conducted several studies over the past several years and have identified frustrations that pilots state they are experiencing in their military careers. We administered our own questionnaire to more than 180 Air Force and Navy pilots at several different installations and held small group discussions with over 100 of these individuals. While we cannot project the results of our own questionnaires to the pilot community as a whole, our results were consistent with the findings that the services have identified in their own surveys. The services have taken certain actions to respond to these concerns. However, opportunities exist for additional action.

Indicators Show a Retention Problem

In general, the services are currently experiencing retention problems in their pilot communities. DOD uses several indicators to measure retention, including the cumulative continuation rate, the ACP take-rate, and number of pilot resignations. A full description of the cumulative continuation rate and the ACP take-rate is in appendix I. Although the indicators used by the services are limited in their predictive value, these three indicators show that retention is currently an issue in the Air Force and the Navy. For example, between fiscal years 1997 and 1998, the Air Force's pilot cumulative continuation rate declined from 71 percent to 46 percent. The Air Force bonus take-rate for all of its contracts declined from a high of 81 percent in fiscal year 1994 to 42 percent in fiscal year 1998. The number of Air Force pilot resignations increased from 498 in fiscal year 1996 to 1,052 in the first 10 months of fiscal year 1998.

Based on the same indicators, the Navy is also experiencing a retention problem. The Navy's cumulative continuation rate declined from 39 percent in fiscal year 1997 to 32 percent in fiscal year 1998. The Navy's bonus take-rate for pilots declined from 50 percent in fiscal year 1994 to 21 percent in fiscal year 1998. The number of pilot resignations in the Navy actually decreased from 316 resignations in fiscal year 1996 to 299 resignations in fiscal year 1997, but then increased to 347 resignations in fiscal year 1998.

Surveys Show Consistent Areas of Dissatisfaction

The Air Force and the Navy have conducted different studies in recent years that have identified reasons why pilots are leaving or are considering leaving the service. While all of the results are not projectable to the entire pilot population, the results of these surveys show that along with other military specialties, pilots are concerned about retirement and health care benefits and other quality of life issues. In addition, there are areas of concern that are particularly relevant to pilots, including the pace of operations, limited spare parts and equipment, senior military and civilian leadership, aviator retention bonuses, and promotion opportunities and assignments.

We administered our own questionnaire to more than 180 pilots in the Air Force and the Navy and conducted small group discussions with more than 120 pilots who responded to our questionnaire at several different Air Force and Navy bases.[1] Our questionnaire results and discussions identified the same primary reasons for pilot separations as disclosed by the Air Force and the Navy studies.

Examples of some DOD surveys we reviewed include an Air Force-administered "Careers and New Directions" survey in 1996 of random groups of personnel who intended to remain in the service and of other groups of personnel who had established a date of separation. Pilots were included in this survey. In 1997, the Air Force also administered a quality of life survey to more than 200,000 personnel. Again, this survey included pilots. In 1998, the Air Force conducted phone interviews with pilots who did not take a retention bonus. The Navy has also administered different studies in recent years. These include an aviator retention study conducted by a Navy aviator retention team in 1997, a retention study conducted by the Navy's Atlantic Command in 1997, a retention study conducted by the Pacific Command in 1998, and a second 1998 retention study that was conducted by the Naval Postgraduate School.

Concern About High Pace of Operations

According to the 1997 Air Force quality of life survey administered to more than 200,000 personnel, one of the critical issues facing the Air Force during the past several years has been the high level of operations. Additionally, other studies have shown that Air Force pilots who declined

[1]Some navigators were included in these discussions.

the retention bonus in fiscal years 1996 through 1998 cited the pace of operations, additional duties, and family issues as primary concerns.

The Air Force reported that since 1995, there has been a slow, but steady increase in the number of reported temporary duty days and the number of hours worked by military personnel. Other work that we have done supports this observation.[2] For example, the Air Force reported that since about 1989, the average number of personnel deployed for operations other than war has more than quadrupled, from about 3,400 personnel in 1989 to about 14,600 personnel in 1997. We found that deployments are concentrated in a small percentage of career fields and that 5 percent of Air Force active duty personnel accounted for 27 percent of the temporary duty assignments in fiscal year 1998. Pilots, for example, comprised 4 percent of total active duty personnel, but accounted for 9 percent of total temporary duty assignments.

In response to our questionnaire and small group discussions, Air Force pilots identified the frequency and length of deployments and lack of clear mission objectives as their primary concerns. The Air Force pilots we met expressed concerns specifically about the frequency of deployments to Southwest Asia, the austere living conditions, and the inability to train during those deployments. They questioned the need for a sizeable, constant presence in that area, and suggested that they would be better off training in U.S. air space and deploying on an as-needed basis. They also expressed concerns about the Air Force expeditionary force initiative that, though intended to add more predictability to pilot deployments, would result in an increase in the length of Air Force deployments from 45 to 90 days. Navy pilots had a different expectation about the length of deployments since naval deployments are typically 6 months in length. However, Air Force and Navy pilots alike raised concerns about the pace of operations between deployments. Several Navy pilots told us that the schedule between deployments is often more demanding than the deployments themselves. One pilot said that he often gets more sleep and communicates with his wife more often via e-mail while on deployment than he does when he is working 10- to 12-hour days between deployments.

The services have taken several actions to address these concerns. For example, the Chairman of the Joint Chiefs of Staff has been working to

[2]Military Operations: Impact of Operations Other Than War on the Services Varies (GAO/NSIAD-99-69, May 24, 1999).

reduce the number of deployments and exercises. This includes a 15-percent reduction in joint exercises in fiscal year 1998 and plans for an additional 5-percent reduction in service exercises in fiscal years 1999 and 2000. The Navy has mandated a 25-percent reduction in operational duties associated with the Inter-Deployment Training Cycle. The Air Force recently reduced Southwest Asia unit rotations from 90 to 45 days. The Air Force is currently reorganizing itself into an expeditionary force with the explicit intent of providing greater stability and predictability in deployments and will increase the length of deployments back to 90 days. Under this reorganization, air crews and support teams will be assigned to 1 of 10 expeditionary forces, 2 of which would be on call for 1 90-day deployment every 15 months. This reorganization is still in development and is to be implemented on January 1, 2000.

Concerns About Constrained Resources

Pilots further expressed their concerns about conducting their missions with inadequate resources. Navy pilots surveyed by the U.S. Atlantic Fleet in 1997 reported low job satisfaction due to a lack of flight time and poor parts support. They complained about additional nonflying demands and other exercise requirements and "doing more with less." The pilots in our survey cited aging fleets, a lack of spare parts, and increased demands on aircraft maintainers as sources of concern. Pilots in both services told us that they only learn on a day-to-day basis whether or not they will be able to fly on training missions due to the limited number of operating aircraft in their squadrons. These pilots expressed concerns that they are not maintaining their requisite combat skills under these conditions. Other work we have done in the Air Force has shown that this perceived shortage of spare parts may be due more to deficiencies in forecasting requirements, inventory management, repair problems, and budgeting problems.[3] Nevertheless, the perception of the pilots we interviewed was that spare parts are not available to them and that aircraft mechanics spend an inordinate amount of time inefficiently removing working parts from one aircraft to repair another. In fact, when we asked pilots to provide us with the single change that would encourage them to stay in the military, one of the Navy pilots' top answers was a fix for spare parts shortages. The pilots also expressed their concerns for their enlisted mechanics, adding that it is difficult for them to motivate their enlisted personnel in such a difficult work environment.

[3] Air Force Supply: Management Actions Create Spare Parts Shortages and Operational Problems (GAO/NSIAD/AIMD-99-77, Apr. 29, 1999).

In response to these concerns, the Navy has added $4.2 billion to spare parts and flying hour funding over 4 years to fully fund flight hour programs, spare parts, and maintenance. In our work on the Air Force flying hour program, we found that programmed hours were not flown for a number of reasons, but that lack of funding was not a cause for underflying the program.[4]

Concerns About Leadership

On another theme related to these issues, many pilots also expressed through discussions and in responses to questionnaires their frustration with military and civilian leadership above their immediate chain of command. They perceived reluctance on the part of leadership to stand up and say no to expanded work under decreasing budgets and reduced manpower. They added that DOD needs to cut back on its commitments to match the personnel reductions in the force, suggesting that military and civilian leaders are holding pilots to new missions within old structures.

Concerns About the Bonus System

Pilots also have voiced concern about compensation, including retirement and health care issues and—particularly for pilots—the effectiveness of the bonus system. The Navy's Retention Group found that pilots were frustrated by the erosion of compensation and benefits. The Air Force's 1997 Quality of Life survey indicated that pilots believe their pay and benefits were not as good as those offered in the private sector. In a survey of pilots conducted by the Navy's Atlantic Fleet Command in 1997, pilots said that, while the bonus "sweetens the pot for fence sitters," it did not affect the decision of many polled to stay in the service. Of the 80 bonus takers we interviewed, only 32, or 40 percent, told us that they were very likely or definitely planning to stay in the military after they completed their current obligation. All others were undecided, somewhat unlikely, or very likely to leave the military.

The pilots we met with also raised concerns about the inequities in the current bonus system and stated that it is not working effectively for a number of reasons. The bonus was developed in order to encourage aviators to stay through their 14th year of service. Until very recently, most bonus recipients continued their military service—after their bonus payments terminated—to retirement. Prior to fiscal year 1995, the Air

[4]Defense Budget: Observations on the Air Force Flying Hour Program (GAO/NSIAD-99-165, July 8, 1999)

Force expected 93 percent of pilots who accepted a bonus obligating them to stay in the military through their 14th year of aviation service to then go on and stay until they were eligible to retire at 20 years. However, in fiscal year 1998, the Air Force projected that only 25 percent of pilots who accepted a bonus will stay until they are eligible to retire. In addition, some pilots we talked to complained about the perceived "cut in pay" that occurs when a pilot reaches 14 years of aviation service and is no longer eligible to receive bonus money. Air Force data confirms this concern.

DOD has reviewed the shortcomings in the current bonus system—including the fact that the 14-year cutoff date for the ACP is no longer effective at retaining pilots—and Congress is considering legislation that would expand the authority of the services to provide bonuses. DOD has developed a proposal that addresses the concern about the 14-year cutoff date by allowing the services to offer up to $25,000 a year to aviators through their 25th year of aviation service. It requires that the pilot must have completed the minimum service requirement and signed an agreement to serve at least 1 additional year in order to receive the ACP. The DOD proposal does not, however, require the services to identify a critical shortage in an aviation specialty in order to offer the ACP. Moreover, although the proposal would authorize the services to pay the bonus through a pilot's 25th year of aviation service, we believe that paying the bonuses up to that point may be unnecessary since pilots are rarely in the cockpit at that point in their careers. Provisions substantially similar to DOD's proposal are included in pending defense authorization legislation.

The Navy has already developed a model, called Aviation Career Continuation Pay, to implement this new system. If the proposal becomes law, the Navy plans to offer bonuses to individuals at major career decision points rather than focusing on gates based on specific years of service. The bonus would be offered to those, for example, who are beginning a department-head tour or those who agree to take on an additional tour of sea duty, and they would allow the Navy to reward aviators who decide to make the Navy a career. This would also make the ACP a true bonus, rather than an entitlement. We believe that the outline of the Navy's model addresses some of the pilot concerns about the current system.

Concerns About Career Progression

Pilots are also concerned about career progression and promotion opportunities. Military pilots are normally required to serve in a variety of positions in order to be promoted and to develop the necessary leadership skills. In the ideal career path within the Air Force, for example, lieutenants

fill cockpit positions to develop pilot proficiency and become mission ready during their first tour assignments. Upon completing this tour, pilots are normally promoted to the rank of captain and report to their second assignment. The focus of this tour is to increase the depth of their cockpit experience and to enable the pilots to assume greater squadron responsibilities. Senior captains report to a third assignment and begin performing duties aimed at broadening their experience and preparing them for increased leadership responsibilities. These pilots will serve in positions such as weapons school instructors, test pilots, and staff assignments. These pilots also focus on professional and educational development activities, which could include work on a master's degree. Successful pilots can expect to be promoted to the rank of major during this assignment. Subsequent assignments at the major and lieutenant colonel level emphasize leadership enhancement and career broadening assignments to include positions as squadron commanders, operations officers, and joint duty assignments.

However, many pilots are now being asked to remain in cockpit positions, rather than serving in career-enhancing positions, and pilots we met raised concerns about the lack of opportunity for career development and promotions. These pilots have "grown up" in a military environment in which they have seen separation incentives, 15-year retirements, and forced early retirements after 20 years of service. They do not see the military as a guaranteed job. Some Air Force pilots raised concerns to us about being sent back to junior flying positions and not getting assignments to the traditional military leadership positions. These pilots believe that the personnel assignment and promotion systems are no longer synchronized since they believe they will be penalized for their nontraditional career paths. For example, pilots in the Air Force perceive that promotion boards still expect them to gain staff and education experiences to be competitive for promotion. In addition, Navy officials are concerned about pilots being promoted without the requisite career developing experiences.

While some pilots expressed their concerns about the reduced opportunities for pilots to seek nonflying opportunities to broaden their experience and prepare for greater responsibilities, others expressed a desire to spend their careers exclusively in the cockpit. Some of the pilots we spoke with said that, in essence, the Air Force is creating a fly-only path, and they suggested that the services do this formally. The Navy pilots surveyed by the Atlantic Command specifically expressed the desire to fly more, stating that they joined the Navy to fly military aircraft. Similarly, over 60 percent of the pilots we questioned stated that the number one

reason they joined the service was for excitement and love of flying. The Navy's Retention Team reported that two of the primary comments from pilots concerned the increased workload and collateral duties and the pilots' desire to eliminate the current focus on secondary duties. Pilots told us that they lose their edge in the cockpit when they go to staff positions. They said these nonflying duties are an incentive to leave the service as soon as they complete their service obligation in order to join the airline industry while they were still current in their flying skills.

The Army's warrant officer community offers an example of a fly-only career path that works well. The warrant officers are brought from the enlisted corps and are given helicopter flight training, but they do not take on leadership positions. The aviation leadership positions are reserved for a small corps of commissioned officer pilots in the Army. The warrant officer pilots have a higher retention rate than their commissioned officer counterparts in other services.

While the Air Force does not have a fly-only career path, it is implementing a program that allows senior pilots to volunteer to return to the cockpit. The purpose of this program, called Phoenix Aviator 20, is to make it more attractive for pilots to stay in the Air Force until they can retire at 20 years of service. It is designed to ease the transition at retirement from a military to a commercial airline career. Among the provisions, pilots who enroll in the program will, during their last 3 years of service, be assigned a tour of duty that guarantees them flying experience in order to keep their flight credentials current. During this time, the Air Force will provide financial assistance for the military pilot to obtain his or her certifications. In addition, the military pilot will be guaranteed a job interview with private industry. The program is relatively new, and slightly fewer than 400 military pilots have enrolled during its first year.

In addition, we met with officials from the British Royal Air Force who described their fly-only career path option called the Specialist Aircrew. The Specialist Aircrew, which was introduced in the early 1970s, is designed to be a retention measure. This option is reserved for pilots who have been asked to remain in the service, but reach the age of 38 without having been promoted to the rank of major. At that point, a pilot can choose to become part of the Specialist Aircrew and remain in the cockpit. The Royal Air Force limits the size of the Specialist Aircrew, which currently comprises nearly 25 percent of the Royal Air Force pilot population. By becoming a member of the Specialist Aircrew, a pilot agrees to stay in the Royal Air Force until age 55, is given an enhanced rate of flying pay and is

promised a flying position for the duration of his or her career. However, if a pilot is promoted to major before the age of 45, that pilot has the option of going back into the traditional career path. The Royal Air Force considers its Specialist Aircrew pilots to be expert pilots.

The Navy does not support the concept of a fly-only career path because it views this option as inconsistent with its current promotion and assignment systems. The Air Force does not support this track because it believes that the existence of this type of career path would take flying opportunities away from pilots who remain on the leadership track. Nevertheless, we found that the services are, at least on a temporary basis, creating a fly-only career track by returning many pilots to flying duties. As we previously stated, the Air Force is currently sending 54 percent of its majors and lieutenant colonels to fill junior cockpit positions normally filled by lieutenants and captains, and the Navy has extended the time that first tour operational pilots spend at sea from 36 to 42 months. If the services were to implement a fly-only career path, we believe that they should put controls on it similar to the British model—such as limiting the number of personnel who go into this system to an elite corps, limiting the promotion potential, and requiring an extended obligation.

In order to gain a better understanding of why pilots are leaving the military, DOD is currently conducting a comprehensive survey of more than 60,000 active duty military members that will examine the reasons servicemembers are leaving the military. DOD anticipates that the results of this survey, which we plan to analyze, will be available in calendar year 2000.[5]

[5] In addition, we have other ongoing reviews requested by Congress related to military personnel issues. These include a survey of servicemembers in retention-critical specialties and an historical examination of military retention rates.

Conclusions and Recommendations

Conclusions

The services currently report that no unit is deploying without 100 percent of its pilots, and they believe that they will continue to be able to meet their operational missions. Nevertheless, the Air Force and the Navy, and to a lesser extent the Army and the Marine Corps, are reporting pilot shortfalls, and they project that these shortages will continue for several years. However, the full extent of these reported shortages has not been identified because neither the Air Force nor the Navy have comprehensively assessed their nonflying positions to determine whether they truly need to be filled with active duty military pilots. Opportunities may exist to reduce pilot requirements and thereby reduce the reported shortages. Shortages can pose significant challenges because each pilot replacement costs DOD millions of dollars in training costs and years of investment in training time and experience. We believe that DOD needs to clearly determine the magnitude of the shortages and understand the extent to which the shortages are temporary or longer lasting before the services implement wholesale and potentially costly changes to their current aviator management systems.

An important first step is to determine whether or not pilot requirements are valid. If an assessment determines that not all positions now designated for pilots are needed to (1) meet operational flying and support positions; (2) provide career advancement opportunities; or (3) enable the pace of operations for pilots to remain within acceptable limits, then pilot requirements could be reduced. Exploring how some positions might be filled by personnel other than active duty military pilots offers the biggest payoff because this would make available more active duty pilots to fill requirements in the cockpit. Moreover, filling positions with personnel other than pilots can provide the services with increased flexibility because these other populations do not require as much time and money to train as pilots require.

Both the Air Force and the Navy maintain requirements for pilots to fill flying and nonflying positions and, to a certain degree, have developed job descriptions for these positions. However, the job descriptions do not clearly state why the positions have been reserved for active duty pilots. Thus, we believe it is difficult for anyone in the chain of command to validate the established requirements. We further believe it would be beneficial for the services to classify their pilot positions according to their operational nature and include specific statements in the job descriptions to show whether the positions are operational flying, operational nonflying, nonoperational flying, or nonoperational nonflying. Where positions are

designated to provide pilots with opportunities for career development and relief from tours of duty where pilots are likely to be away from home, this should be clearly noted. By revising their databases to account for pilot positions according to their flying and operational status, service officials could more uniformly report shortages, more easily evaluate which positions they must fill on a priority basis, and better assess whether some positions could be filled by other personnel in times of shortages. These personnel could include retired military personnel, reservists, active duty military officers who are not pilots, DOD civilians, and contractors. We also believe that it would be beneficial for the services to reconstruct their databases to reflect this type of analysis and capture the extent to which their pilot requirements have an operational and flying aspect. Doing so would enable all of the services to report future pilot requirements and inventories in a uniform manner and identify any future imbalances in their operational and nonoperational flying and nonflying positions.

An important second step to clarifying the extent of shortages is to separate out those contributing factors that are temporary in nature and are not attributable to retention. Doing so will more accurately identify the degree and type of corrective action that is required. Some of the reported shortages, for example, can be attributed to the fact that the Air Force and the Navy reduced their accessions during the reductions in force in the mid-1990s to avoid the involuntary separation of pilots already in the force. The unintended consequence of the reduced accessions is that aviation personnel managers are now challenged to find ways to fill current requirements from year groups of pilots that are insufficient in size to fill those requirements. However, this condition will resolve itself as this population matures through the workforce. Other shortages can be attributed to the fact that two of the services have experienced significant delays in their pilot training pipelines that have left entry-level positions empty. Although these delays create the illusion that additional shortages exist, this condition will be resolved as the services reduce their training delays.

Finally, we believe that some of the reported shortages can be defined in terms of retention, and DOD needs to understand what pilots consider when they make their decisions to stay in or leave the service. Although many of the pilots' concerns may be shared by military members in other specialties and are not unique, we identified two concerns that have particular relevance to pilots.

One factor that clearly needs to be addressed is the pilot assignment system. Currently, the Air Force is sending approximately 3,100 majors and lieutenant colonels back to the cockpit to fill positions normally filled by lieutenants and captains, and the Navy has increased the length of time that first tour operational pilots spend on sea tours from 36 months to 42 months. By increasing the time pilots serve in cockpit positions, the services have taken pilots away from traditional career tracks, which has led pilots to become concerned that they will not be competitive for promotion within the military in the future. Such concerns, if unaddressed, could fuel retention problems. In contrast, other pilots are pleased to be able to spend more time in the cockpit and have, in fact, expressed their dissatisfaction with assignments that take them away from flying. These disparate views about the merits of flying more suggest that no single solution will address the concerns of all pilots and that a variety of approaches may be needed. In light of these disparate views and the current stresses that are being placed on the personnel management systems, it would be beneficial if the services could identify pilots desiring additional flying duty and assign them according to their preferences. In the longer term, the services might wish to make this process more formal by establishing a fly-only career path for a segment of their pilot communities.

A second factor that needs attention is the bonus system. Many pilots do not view the current bonus system as a viable retention tool, and a pilot's decision to accept a bonus no longer provides assurance that the pilot will stay in the military until the pilot is eligible to retire. The Air Force, for example, has seen increasing numbers of pilots resign after 14 years of service during the past 4 years. Chief complaints voiced by pilots are that the ACP eligibility dates are based on outdated assumptions and pilots see the end of the bonus payment—at year 14—as a cut in pay. These complaints are occurring at the same time that pilots see potentially lucrative career opportunities in private industry.

DOD has reviewed the current bonus system and developed a proposal to address the shortcomings. Congress is considering legislation with provisions substantially similar to DOD's proposal that would expand the current bonus authority by allowing the services to offer up to $25,000 per year to aviators through their 25th year of aviation service. Pilots could perceive this new program as an entitlement if the program is not properly implemented. On the other hand, the Navy has developed a model to implement the pending legislative changes that we believe has merit. Under this plan, the Navy would offer bonuses to individuals at major career

decision points and provide the Navy with the capability to reward pilots who make an affirmative decision to make the Navy a career. Doing so would make the ACP a true bonus rather than an entitlement.

DOD is currently conducting a comprehensive survey of more than 60,000 active duty military members that will examine the reasons servicemembers are leaving the military. DOD anticipates that the results of this survey, which will be shared with us, will be available sometime next year.

Recommendations

We recommend that the Secretary of Defense direct the services to take the following actions:

- Develop criteria and detailed job descriptions for designating positions to be filled with pilots, classify the positions according to their operational and flying status, and specify the types of duties that make pilots essential. Moreover, for jobs that are held for pilots based on reasons of career development and rotation, descriptions should contain a clear justification.
- Using the newly developed criteria, analyze each pilot position to identify those positions where active duty pilots are not required and take the necessary actions to fill those positions with other personnel possessing appropriate expertise, such as warrant officers, retired military, contractors, DOD civilians, reservists, or navigators.
- Revise their databases so that the services can (1) uniformly report data on future pilot requirements and inventories and (2) identify any imbalances in their operational and nonoperational flying and nonflying positions.

To the extent that shortages exist after these recommendations are implemented, we recommend that the Secretary of Defense direct the services to take the following actions:

- More fully evaluate the merits of a fly-only career path for a segment of the pilot community. In the short term, identify those pilots desiring additional flying duty and match them to this extra duty to the extent possible.
- If the pending legislation to extend the ACP is enacted, only offer bonuses to those pilots who make affirmative decisions to continue their career rather than to all pilots reaching specified gates. This would preclude the bonus program from being interpreted as an entitlement.

Agency Comments and Our Evaluation

In written comments on a draft of this report, DOD partially agreed with four of our five recommendations, disagreed with one recommendation, and stated that our executive summary did not represent the sum and substance of the report as a whole in that it did not reflect the positive steps DOD had taken to address pilot issues. DOD also commented that our recommendations were actually refinements to the DOD's own initiatives. We have added information to our executive summary to acknowledge DOD's actions and to better explain how our recommendations differ from ongoing efforts.

With respect to developing criteria and detailed justifications for pilot positions, DOD said that, while it partially agreed with our recommendation, it had long-standing procedures to review billet requirements against operational mission requirements, including pilot requirements. DOD further stated that these procedures provide data sufficiently detailed and accurate to support legislative language addressing a broad spectrum of pilot initiatives. DOD noted that the services have procedures for reviews of rated officer requirements. We note, however, that despite these procedures the Air Force and the Navy found it necessary to conduct special meetings in April and June 1999, respectively, to review their own requirements for pilots in nonflying positions. In addition, while we agree that DOD has procedures to review pilot requirements, the procedures do not provide the criteria used to justify a pilot filling a particular position. Our recommendation would have DOD establish criteria and detailed job descriptions, classify the positions according to their operational and flying status, and specify the types of duties that make pilots essential. This would enable the services to possibly reduce their pilot requirements and enable them to better decide which positions should be filled on a priority basis in times of shortages.

DOD also partially agreed with the intent of our recommendation to identify those active duty pilot positions that could be filled with other personnel. It noted that it has filled pilot positions with recalled active duty pilots, warrant officers, reserve officers, and limited duty officers. Although it is true that the services have filled some positions with personnel other than pilots, there has been no systematic means of analyzing pilot positions to determine what other types of personnel might be used to fill the positions. Our recommendation is intended to encourage systematic consideration of all possible alternative means of filling pilot positions during periods of shortages.

While DOD partially concurred with the intent of our recommendation on uniformly reporting data, it believed that its current databases were sufficient to respond to DOD's requirements. DOD saw no advantage to a single cross-service database that would track pilots given each service's unique culture and mission. We did not, however, recommend a single database, but rather that the services revise their databases so that they can uniformly report data. During our review, we encountered several instances of inconsistent reporting. For example, in March 1999 hearings before the Subcommittee on Military Personnel, House Committee on Armed Services, the Air Force reported shortages of 648 pilots at the end of fiscal year 1998, and the Navy reported shortages of approximately 500 pilots as of March 1999. These reported shortages were not comparable since the as-of dates were different, and the Navy's data did not include those pilots whose training had been delayed. Comparable data that we obtained showed that, as of the end of fiscal year 1998, the Navy had a shortage (including those pilots whose training had been delayed) of 1,153 pilots. Consistent data presentations, as our recommendation suggests, would assist DOD and Congress in deciding how best to address pilot shortages.

DOD also partially agreed with our recommendation that the services consider the merits of a fly-only career path, but said that such a track has been studied by each service, and in some cases tested. It further commented that these tests have found that instituting a fly-only career track created a different set of problems for the services. In addition, DOD noted that the challenge currently facing the services is a staff shortage, not a cockpit shortage. DOD also acknowledged that a percentage of pilots just want to fly and have little desire for nonflying assignments. DOD agreed that a fly-only career path could be considered at a later date, when it would be addressed within a broad context that considers areas such as compensation, retirement, and advancement of individuals in this type of career progression path. We agree with DOD that this option would need to be considered within the broad context outlined by DOD.

In disagreeing with our fifth recommendation about the proposed bonus system, DOD said that its current bonus systems are tied precisely to key career decision points and do not occur at arbitrary points in time, as we had originally suggested. We agree that arbitrary is not a fair characterization of these points in time and have deleted this reference. We have also revised our recommendation to better reflect our intent that the bonus system be offered to pilots as a reward for affirmative career decisions rather than being interpreted as an entitlement. In addition, we

have clarified our report to emphasize that some assumptions about the success of bonuses in encouraging pilots to stay until retirement may be outdated and should be revisited.

Pilot Retention Measurements

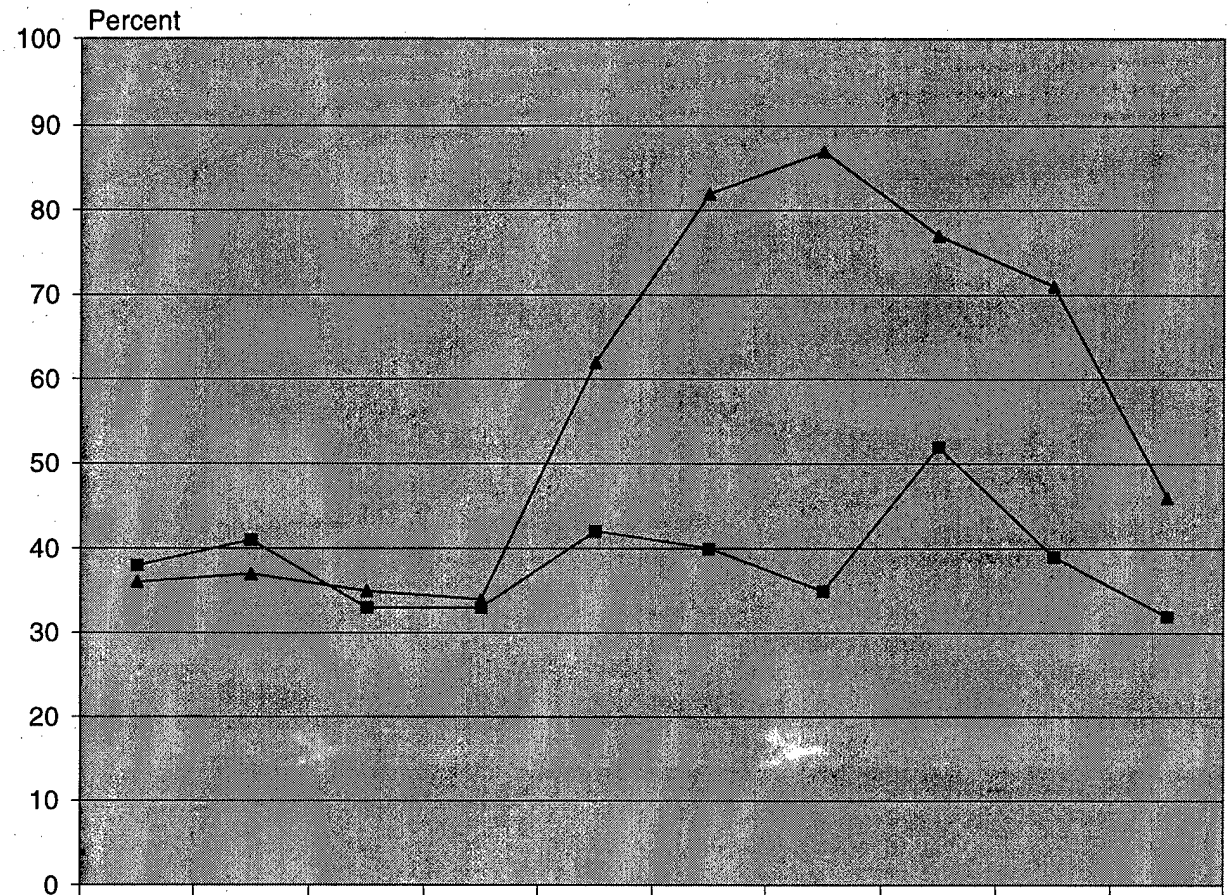
The services use two statistical measures to monitor pilot retention.

Cumulative Continuation Rate

The cumulative continuation rate, commonly referred to as a "retention rate," measures the tendency of pilots who start pilot training together to remain on active duty beyond their minimum service commitment. The services measure the propensity of a cohort of pilots in a particular year group to stay in the military for a specified additional number of years. The Air Force measures the propensity of an aviator in the 6th year of service to stay through the 11th year of service while the Navy measures the propensity of an aviator in the 7th year of service to stay through the 12th year of service. For example, the Navy uses two data points to monitor pilots who entered pilot training in 1986. The first measure would be 7 years after their accession, in 1993, while the second would be 12 years after their accession, in 1998. In this case, for every hundred pilots who were still on active duty in 1993 (7 years after accession), 32 remained on active duty in 1998 (12 years after accession). This represents a pilot cumulative continuation rate for fiscal year 1998 of 32 percent.

The cumulative continuation rate varies depending on the years selected, and anomalies may not carry into the future. For example, several times in the late 1980s and early 1990s, the services (except for the Army) changed the minimum service obligation—which created artificially high cumulative continuation rates since not all individuals in the cohort were eligible to leave active duty when it was measured. These variations make it difficult to identify a normal loss rate. Other factors, such as differences in the populations in specific cohorts, further stress its limitations. When the services quote changes in the retention rates of pilots, they are not quoting the actual number of pilot losses, but rather an estimate based on an entire cohort's behavior. Figure I.1 shows the Navy and the Air Force's cumulative continuation rates from 1989 to 1998.

Figure I.1: Navy and Air Force Cumulative Continuation Rates, Fiscal Years 1989-98



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Navy CCR	38	41	33	33	42	40	35	52	39	32
Air Force CCR	36	37	35	34	62	82	87	77	71	46

Note: The Air Force spike between fiscal year 1993 and 1995 and the Navy spike in fiscal year 1996 are due to multiple minimum service obligation extensions that reduced the number of pilots eligible to leave active duty during those years.

Source: GAO from DOD data.

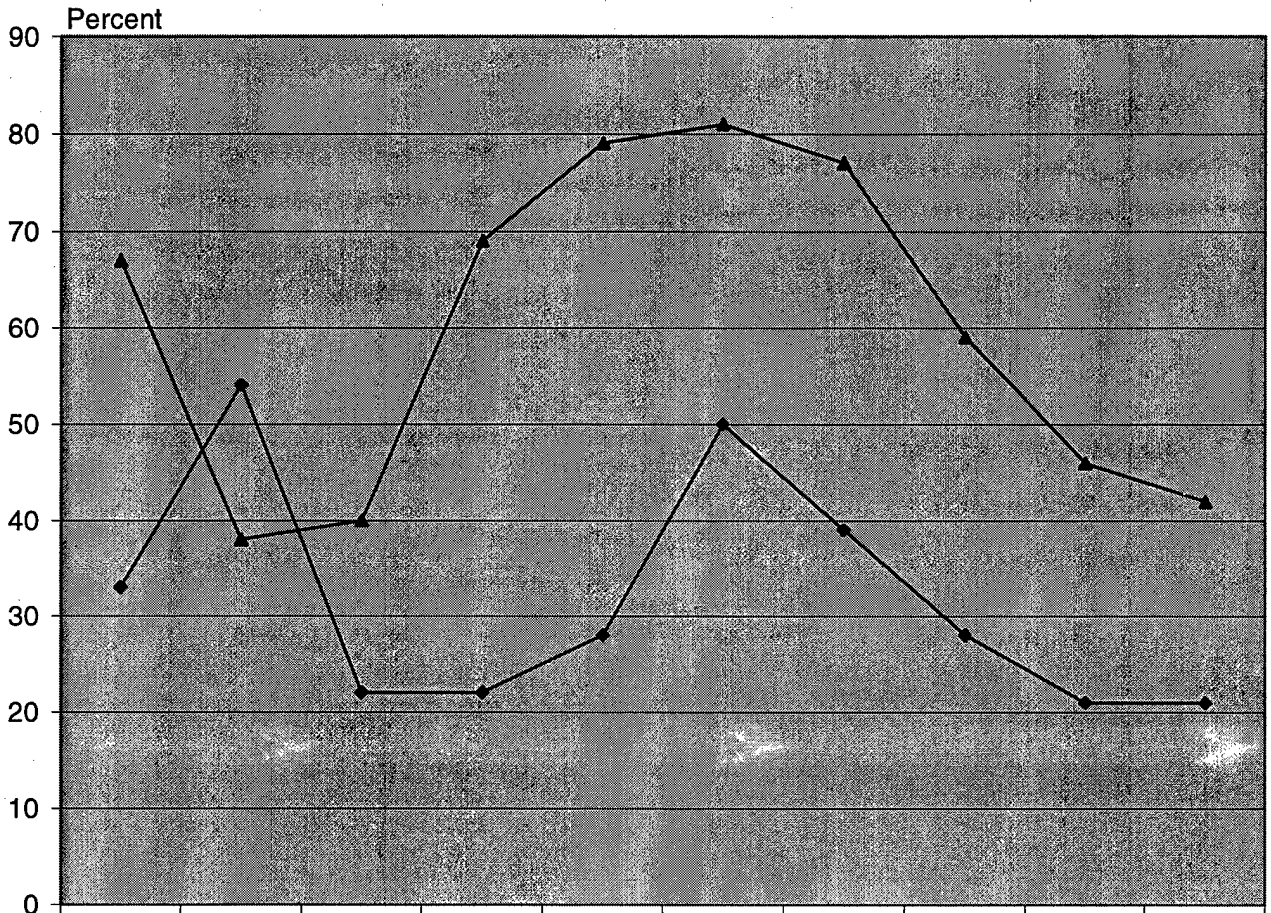
Aviator Continuation Pay Take-Rates

The ACP take-rate measures the percentage of aviators, of those who are eligible in a particular year, who take a bonus in exchange for an agreement to extend their service commitment through 14 years of service. By law, ACP is only offered to those aviators in critical aviation specialties who

have completed their minimum service obligation, but have completed less than 13 years of aviation service. With the exception of the Army, the services have offered the bonuses for time frames as short as 1, 2, or 3 years. The bonus take-rate is considered the leading indicator of near-term aviator retention because service experience has shown that 90 percent of pilots separate within a year of declining a bonus.

It is important to note that not all pilots are eligible for the bonus at any given point in time and that the bonus take-rate only measures the percentage of pilots who take the ACP out of those who are eligible in a given year. Because the services simply measure the number of aviators out of the number eligible, a high bonus take-rate could signal that a service has given bonuses to too many aviators. For example, if a service had a community of 100 pilots, and 30 pilots took the bonus, this would represent a 30-percent take-rate. Since the take-rate represents the number of pilots who accepted a bonus, rather than the number of pilots that the service wanted or needed to take it, the take-rate could be 30-percent and still fulfill the needs of the service. The services could fill 100 percent of their goals and still report a 30-percent take-rate. The Navy and the Marine Corps currently do not tie their goals or desired take-rates to requirements. Instead, they base their take-rate projections on historical patterns and educated guesses of how many pilots are likely to take the bonus in the future. Additionally, since the ACP is offered to different aviation specialties in different years, for differing periods of time, and the take-rate for communities that have not been offered the ACP in the past is usually higher, the variations in take-rates can stem from many different causes. Figure I.2 shows the ACP take-rates for the Navy and the Air Force for fiscal years 1989 to 1998.

Figure I.2: Navy and Air Force Pilot ACP Take-Rates, Fiscal Years 1989-98



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Navy	33	54	22	22	28	50	39	28	21	21
Air Force	67	38	40	69	79	81	77	59	46	42

Source: GAO from U.S. Navy and Air Force data.

Comments From the Department of Defense

ASSISTANT SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, DC 20301-4000

FORCE MANAGEMENT POLICY

05 AUG 1999

Mr. Mark E. Gebicke
Director, National Security Preparedness Issues
National Security and International Affairs Division
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Gebicke:

This is the Department of Defenses (DoD) response to the General Accounting Office (GAO) draft report, "MILITARY PERSONNEL: Actions Needed to Better Define Pilot Requirements and Promote Retention" dated July 2, 1999 (GAO Code 703255/OSD Case 1857). DoD concurs, in part, with the intent of recommendations one, two, three and four; and does not concur with recommendation five. Technical and clarifying comments were provided separately.

Pilot retention is a top priority for the senior civilian and uniformed leadership within the Department of Defense. Their actions have resulted in an aggressive and integrated set of initiatives to address requirements, production, retention, prioritization, and tempo management.

See pp. 10 and 61.

Unfortunately, the Executive Summary and recommendations -- the two most commonly read portions of any GAO report -- do not represent the sum and substance of the report as a whole. Although many initiatives by the Department and Services are fairly mentioned in the body of the report, the Executive Summary paints a contradictory picture of inaction and mismanagement--often disputing the body of the report itself. Further, we believe several of GAO's recommendations are actually refinements to programs and initiatives that have served the Department and the Services well for several years. The other GAO recommendations that suggest potentially new pilot retention study areas have in-fact been reviewed by several Services and careful decisions made not to further pursue them.

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

Sincerely,

Francis M. Rush, Jr.
Principal Deputy

Enclosure:
As stated

GENERAL ACCOUNTING OFFICE DRAFT REPORT
DATED JULY 2, 1999
(GAO CODE 703255) (OSD CASE 1857)

"MILITARY PERSONNEL: ACTIONS NEEDED TO BETTER DEFINE PILOT REQUIREMENTS AND PROMOTE RETENTION"

Now on pp. 9 and 60.

RECOMMENDATION 1: GAO recommends that the Secretary of Defense direct the Services to develop criteria and detailed job descriptions for designating positions to be filled with pilots, classify the positions according to their operational and flying status, and specify the types of duties that makes pilots essential. Moreover, for jobs that are held for pilots based on reasons of career development and rotation, descriptions should contain clear justification.(p.10, p. 69/GAO Draft Report).

DoD RESPONSE: Partially concur with intent. The Office of the Secretary of Defense fully supports the proven policies and methodologies currently in use by the Military Departments that identify, verify and man rated billets. Data derived from these established mechanisms has proven sufficiently detailed and accurate to support legislative language addressing a broad spectrum of pilot recruiting and retention initiatives. The Military Departments have longstanding procedures that review billet requirements against operational mission requirements. Included in these established processes are rated officer requirements. Air Force Instruction (AFI) 38-201, dated May 94 (w/changes effective January 1999), devotes a chapter to the annual review process for rated officer requirements. This established review process drove the Air Force's September 1996 decision to establish a new officer specialty code (16G), which converted 535 rated staff billets to non-rated officer requirements. Navy's SECNAVINST 5010.1B (Nov 93) establishes the review procedures within that Service. Utilization of these established review procedures generated current Navy initiatives in the reduction of non-flying aviation billets through redesignation of these billets to other communities. The Marine Corps' well-established biannual billet review process analyses the structure and manpower needs of non-primary MOS requirements (B-Billets). This review process shifts unjustified rated officer requirements to NFOs or other operational fields.

It is these proven review processes that have allowed the Services to maintain 100% cockpit manning while operating in a steadily increasing operational tempo environment coupled with the greatest increase in commercial airline pilot hiring since the advent of commercial aviation.

The proposed report should identify criteria currently used by the Services that in the view of GAO merit reexamination, and the basis for such recommendation.

Now on pp. 9 and 60.

RECOMMENDATION 2: GAO recommends that the Secretary of Defense direct the Services to utilize the newly developed criteria (recommendation 1) to analyze each pilot position to identify those positions where active duty pilots are not required and take the necessary actions to fill those positions with other personnel, such as warrant officers, retired military, contractors, DoD civilians, reservists, or navigators. (p.10, p. 69/GAO Draft Report)

New on pp. 33-34.

DoD RESPONSE: Partially concur with intent. Again, the Department has made full use of data resulting from the Military Departments established review criteria, as described in our response to recommendation 1. In consideration of the latter part of this GAO recommendation the Military Departments continue to make extensive use of navigators/NFOs in unfilled non-flying pilot billets.The Air Force briefed GAO on the results of the April 1999 Senior Air Force Leadership Rated Summit which approved a strategy for filling rated headquarters staff vacancies, unfortunately no mention is made of this level of engagement in the GAO draft report. Also, it was unfortunate that GAO failed to mention the Air Force's pilot recall program that since 1995 has brought 114 pilots back to active duty. The Navy's review process initiated an ongoing program whereby Limited Duty Officers (LDO) and warrant officers now perform duties previously designated for rated officers. All Services currently make extensive use of their respective Reserve Components and actively seek separated servicemembers who desire to voluntarily return to active duty. Pending legislative initiatives (repeal of reduction in retired pay) could provide an attractive option for retired members to perform in a civil service capacity.

Now on pp. 9 and 60.

RECOMMENDATION 3: GAO recommends that the Secretary of Defense direct the Services to revise their databases so that the Services can uniformly report data on future pilot requirements and inventories and identify any imbalances in their operational and non-operational flying and non-flying positions. (p.10, p.70/GAO Draft Report)

DoD RESPONSE: Partially concur with intent. As stated earlier the Department makes full use of current Service data to address a broad spectrum of pilot retention initiatives to include proposed legislative actions. The Department sees no advantage to a standardized single data base for tracking pilots given each Services unique culture and mission. The manpower planning and requirements products currently produced by each Service is responsive to DoD's requirements.

Now on pp. 9 and 60.

RECOMMENDATION 4: GAO recommends that if shortages exist after implementation of recommendations 1-3, the Secretary of Defense direct the Services to more fully evaluate the merits of a fly-only career path for a segment of the pilot community. In the short term, identify those pilots desiring additional flying duty and match them to this extra duty to the extent possible. (p.10, p.70/GAO Draft Report)

DoD RESPONSE: Partially concur with intent. We approached this recommendation from the standpoint that the challenge currently facing the Services is a staff shortage, not a cockpit shortage. A fly-only track while good for cockpit strength could potentially exacerbate the current rated pilot staff shortages challenging the Services. A fly-only track has been studied by each Service, and in some cases tested. In each case the Service found that filling cockpits with fly-only pilots created a different set of challenges associated with absorbing new pilots into cockpits in order to gain experience and returning mid and senior grade pilots to cockpit assignments in order to continue their professional development. The Department agrees that a percentage of pilots just want to fly, and have little desire for non-flying assignments. At a later date a fly-only option would certainly be a consideration, but would best be addressed in a broader context that considers areas such as compensation, retirement, and advancement of individuals in this type of career progression path.

Now on pp. 9 and 60.

RECOMMENDATION 5: GAO recommends that if shortages exist after implementation of recommendations 1-3, and if the pending [pilot bonus] legislation is enacted, the Secretary of Defense direct the Services to examine the current bonus system and make changes that will better align retention bonuses to pilots at key career decision points throughout their military careers, rather than at arbitrary points in time that may have no relation to these decision points. (p.10, p.70/GAO Draft Report)

See pp. 10 and 62.

DoD RESPONSE: Do not concur. Current bonus systems are keyed precisely to key career decision points: payable first when a member completes his or her initial active duty service obligation for undergraduate pilot training, and at termination of those service agreements, provided the member has completed less than 13 years of service. These are not "arbitrary" points, and they are the points in time permitted within current legislation at which decisions to continue service must be made.

If passed, the proposed changes to Aviation Career Continuation Pay will provide substantially more latitude than earlier versions. Services will submit plans to OSD for approval, including the rationale for specific bonus strategies recommended. This has been the process by which aviation bonus plans have been approved each year since first enacted in 1989. The recommendation implies that this is not the case.

We would welcome GAO recommendations and rationale with respect to most effective structures of bonus pays to encourage the most successful retention profile for current and future readiness.

GAO Contacts and Staff Acknowledgments

GAO Contacts

Mark E. Gebicke, (202) 512-5140
Brenda S. Farrell, (202) 512-5140

Acknowledgments

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