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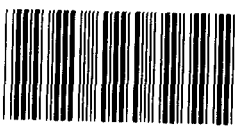
Briefing Report to the Chairman, Subcommittee on Defense, Committee on Appropriations, House of Representatives

December 1987

AIR FORCE PILOTS

Developing and Sustaining a Stable, Combat-Ready Force



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The Honorable Bill Chappell, Jr.
Chairman, Subcommittee on Defense
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

This report discusses the Air Force's rated management process and related issues. The Air Force uses this process in managing its rated force (i.e., pilots/navigators in the grades of lieutenant through lieutenant colonel). The objective of the process is to develop and maintain a pilot/navigator inventory that meets the Air Force's stated requirements while maintaining a credible combat posture. We focused our review on the career paths of pilots, since they represent over two-thirds of the rated force. The results of our work are summarized below and described in more detail in the appendixes. Our objective, scope, and methodology are discussed in appendix IV.

Department of Defense's position is that military pilots are primarily officers and secondarily pilots. They should therefore be trained to be "total" officers and to be competitive in their careers with other non-pilot officers. The Air Force believes that intense specialization may limit an officer's usefulness. Training pilots to be total officers, however, has increased requirements for pilots because they are often assigned to professional military education and career-broadening positions not requiring rated officers.

The rated management process has undergone some changes over the past decade, but the Air Force has been unable to maintain (1) a pilot inventory equal to total pilot requirements, especially for individual major weapon systems or (2) a stable, combat-ready force. The Air Force's fiscal year 1987 requirement was for 23,499 pilots for about 7,200 aircraft. Since fiscal year 1980, inventory/requirements imbalances have ranged from an inventory deficit in fiscal year 1981 of 1,107 pilots to an excess of 256 pilots in fiscal year 1984 to a projected inventory deficit of 970 pilots in fiscal year 1992. In fiscal year 1985, when total

inventory exceeded the Air Force's stated requirements by 211 pilots, individual weapon system imbalances included a bomber pilot inventory that exceeded requirements by 589 pilots and a fighter pilot inventory shortage of 658 pilots.

A primary problem in achieving and maintaining a pilot inventory equal to requirements is that operational units cannot accept and give new pilots the opportunity to become experienced at a fast enough rate. New pilots, to become experienced, must fly a certain number of hours (500 hours for most fighter aircraft) in their primary aircraft at an operational unit. Accumulating 500 hours of flying experience usually takes about 2-1/2 years in an operational unit; shortly after that time the pilot is often transferred to a new assignment. As a result, many fighter aircraft, positioned in strategic locations throughout the world, are being flown by pilots the Air Force considers inexperienced. For example, of 607 F-15 and F-16 pilots assigned to the Alaskan, European, and Pacific theaters in February 1987, 310, or about 51 percent, were inexperienced.

The Air Force attempts to bring the number of flight school graduates (new pilots) and the number of these pilots who can be accepted into operational units into a proper balance. This balance can be achieved by reducing the need for new pilots, increasing the operational units' capacity for absorbing new pilots each year, or a combination of the two. Reducing the number of new pilots needed each year by reducing requirements and/or increasing pilot retention is likely to be the most cost-effective approach. It costs $5.3 million to provide training and experience for an F-16 pilot, $6.2 million for an F-4 pilot, and $7.5 million for an F-15 pilot. This training and experience includes flight school, major weapons system lead-in training, and the initial 3-year operational tour. Increasing pilot retention would save money and have a positive impact on readiness.

The Air Force has taken actions to reduce pilot requirements and increase retention levels. For example, the Tactical Air Command has efforts underway or planned that are expected to eliminate the need for 491 rated positions by the end of fiscal year 1989. Air Force efforts to retain pilots in service longer are focused on factors over which they have some control, such as family considerations, length of duty day, and the number of additional duties.

The Air Force does not offer pilots an alternative career path dedicated primarily to flying aircraft. By offering pilots this career option, the Air Force may be able to

enhance job satisfaction, increase retention, reduce the number of new pilots that must be trained each year, and increase the percentage of experienced crews. Such a new approach, however, could have adverse effects, such as limiting the availability of trained and experienced officers for other positions.

DOD said that the major Air Commands and the Air Staff are continually developing initiatives, reviewing programs and requirements, and exploring alternatives to increase absorption, balance inventories and requirements, improve pilot retention, and maintain readiness. However, we found that there has been no overall study examining the advantages and disadvantages of offering pilots an alternative career path with a focus on the pilot as specialist rather than total officer. Given the current and anticipated force structure, this alternative career path could be evaluated for its potential in helping meet pilot inventories within budget constraints. In such an evaluation, questions like the following could be addressed:

-- What types and how many requirements could be reduced by offering an alternative career path to pilots?

-- Would some pilots be more likely to stay in the service longer if such an alternative is available? How much longer?

-- What would be the effect of this alternative career path on the line units' military capability?

-- With an alternative career path, would the reduced need for new pilots be equal to or greater than the operational units' reduced capacity to accept new pilots?

DOD, in its comments on our report, generally concurred with our findings but provided additional information and updated data. DOD said that the Air Force will evaluate the cost benefit of creating a 20 year career path that places a pilot in a flying position for 80 to 100 percent of the career. DOD also noted that Air Force leadership has identified several disadvantages to an alternative career path. While we recognize that an alternative career path could have disadvantages, they could be more than offset by other factors. A thorough evaluation of the cost benefit of an alternative career path could help decide if it is worthwhile.

Copies of this report are being sent to the Chairman, Subcommittee on Defense, Senate Committee on Appropriations;

the Chairmen, Senate and House Committees on Armed Services; the Secretaries of Defense and the Air Force; the Director, Office of Management and Budget; and other interested parties.

Sincerely yours,

Harry R. Finley
Senior Associate Director

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ABBREVIATIONS

DOD	Department of Defense
GAO	General Accounting Office
MAC	Military Airlift Command
PME	professional military education
TAC	Tactical Air Command
TAF	Tactical Air Forces

THE OFFICER CAREER DEVELOPMENT PROGRAM

The Department of Defense's (DOD's) position is that military pilots are primarily officers and secondarily pilots and that they should therefore be trained to be "total" officers and to be competitive in their careers with other officers. Each officer who expects to be promoted to top senior grades must be aggressive in perfecting performance and in acquiring diversified job experience, schooling, and education. The Air Force believes that intense specialization may limit an officer's usefulness.

The Air Force's career development program provides a 30-year path intended to mold the pilot into a total officer in preparation for ever-increasing levels of management responsibility. After the initial 6 years of flight training, operations assignments become interspersed with professional military educational tours, staff supervisory administrative positions, and career-broadening assignments not requiring pilots. A pilot's suggested career progression, as presented in Air Force Regulation 36-23, can be divided into five phases. The first 5 years constitute the initial phase; years 6 through 11, the intermediate development phase; years 12 through 17, the advanced development phase; years 18 through 22, the staff phase; and the years beyond 22, the executive phase. DOD, in comments on this report, said that this Air Force regulation is being completely rewritten. Scheduled for publication in December 1987, the revision will phase in some professional military education and career-broadening assignments later in an officer's career. The phases, as described in the current Air Force regulation, are as follows.

INITIAL PHASE

The first 5 years of a pilot's career include undergraduate flight training, qualification in an operational aircraft, and unit-level assignment to increase flying experience. The primary emphasis is placed on establishing flying skills. Table I.1 shows the Tactical Air Command's (TAC's) cost to provide training and experience to an F-4, an F-15, and an F-16 fighter pilot over this initial phase.

Table I.1: Cost of a Fighter Pilot

	F-4	F-15	F-16
Basic costs (officer training, undergraduate pilot training)	$ 397,818	$ 397,818	$ 397,818
Fighter training (lead-in training course)	1,018,272	1,539,523	1,376,355
Mission qualification training	186,652	216,389	138,807
3-year operations tour	4,547,679	5,350,551	3,380,532
Total	$6,150,421	$7,504,281	$5,293,512

By the end of this phase, the Air Force expects each pilot to have completed Squadron Officer School either in residence (on temporary duty status for 8-1/2 weeks) or by correspondence. The school's mission is to provide for the professional development of company grade officers so that they can better perform and value their roles in the conduct and support of combat operations and other Air Force missions. The Air Force suggests that officers consider applying for the Air Staff Training Program. The program's objective is to develop a potential resource of future Air Force leaders by stimulating the early career growth of some of the more promising young officers (about 35 officers selected each year) during a 12-month training tour at Air Force Headquarters.

INTERMEDIATE DEVELOPMENT PHASE

The intermediate development phase extends from years 6 through 11 of the pilot's career. The initial portion is usually devoted to refining flight and leadership skills. This period is also considered an opportune time for pilots to move into other operational areas such as flight safety, flight-test maintenance, or experimental testing. Some majors are selected to attend a 9-1/2 month residency course at the Air Command and Staff College. Its purpose is to prepare selected officers for the command and staff duties of majors and lieutenant colonels. Residency is limited to about 400 U.S. Air Force officers each year. The Air Force suggests that non-selectees complete the study by correspondence or seminar programs.

During this phase, about 5 percent of the officers are assigned to support functions and move into the "supplement." The supplement includes pilots, with the rank of lieutenant colonel and below, who serve in support duties at all levels, in positions not requiring rated personnel. These officers continue

to be considered rated resources and represent a readily available resource of active duty pilots and navigators to augment operational units in a contingency, provide rated presence in selected support career fields, and broaden the experience base of the rated force. Tours in non-flying assignments permit rated officers to obtain experience outside operations, provide a flow of middle managers to the support areas, and ensure that adequate resources are available for sustained conflicts.

One way a rated officer can enter a support field is to attend the Air Force Institute of Technology. The Institute's mission is to provide education and training to meet the Air Force's technological, scientific, and other professional requirements. Only the highest qualified officers (less than 1 percent) attend. When possible, officers graduating from the Institute with advanced degrees are assigned to positions in their academic specialties.

Pilots and navigators may continue their operational training in schools designed to develop flight skills and instructor abilities. This training makes it possible for officers to enter squadron supervisory positions and qualify for more responsible staff duties.

During this phase, the Air Force wants officers who demonstrate potential and desire to be exposed to operational staff positions in wings or air divisions. These assignments, according to the Air Force, provide the necessary foundation for exceptionally qualified officers who eventually attain staff positions at the numbered Air Force headquarters, major command headquarters, or Air Force Headquarters. These officers are carefully chosen from those who have established outstanding performance records.

ADVANCED DEVELOPMENT PHASE

During this phase, which extends from years 12 through 17, officers make their most significant advances. Earlier assignments should have provided experience that could be used in lower level supervisory positions and in staff positions at all levels. Officers in this career phase fill most operational staff positions. A few become squadron commanders.

During the advanced development phase, the major commands identify officers who show significant potential for assignment to command positions early in the next phase. The Air Force views command experience as very important, both to the Air Force and to the officer. Command duty gives the Air Force opportunities to evaluate officers' capabilities in leadership positions and gives an officer the chance to acquire knowledge of

managerial techniques required for future high-level responsibilities. Desirable prerequisites for potential commanders include completion of an intermediate professional military education school, recent flying experience in mission aircraft, and a diversified background, including higher level headquarters experience.

An officer should complete a senior service school, either in residence or through correspondence or seminar, to further enhance management capabilities. The Air War College is the senior school in the U.S. Air Force professional military education system. Its mission is to prepare senior officers for high command and staff positions, with about 140 Air Force officers attending each year.

STAFF PHASE

The staff phase, from years 18 through 22, involves command and responsible staff positions at wing, major command, and Air Staff levels.

EXECUTIVE PHASE

The executive phase is the last of the five phases. Officers who have continued to be promoted to the rank of colonel and have shown that they are qualified for greater responsibility may expect assignments as wing or air division commanders, vice or deputy commanders, or high-level staff directors. Individuals are selected for these positions based on their past performance and levels of responsibility, their professional and academic schooling, and their operations backgrounds.

AVIATION CAREER INCENTIVE PAY

The Aviation Career Incentive Act is intended to encourage pilots to remain on active duty for career service. The Aviation Career Incentive Act of 1974 established a system for pilots and navigators to qualify for continuous incentive pay. This system is commonly known as the "gate" system.

The "gates" occur on the anniversaries of the 12th and 18th years of rated service, including time spent in flight training. By the 12th year of rated service, an officer must have at least 6 years of flying experience to be entitled to continuous aviation pay until the 18th year of service. At the 18th year of rated service, an officer must have 9 years of operational flying experience to be entitled to aviation pay through the 22nd year and 11 years to be entitled through the 25th year of service. Only officers actively performing flying duties after 25 years of service are still entitled to such pay.

APPENDIX I

In comments on a draft of this report, DOD stated that 82.2 percent of all pilots are in positions requiring them to fly. However, the emphasis on flying takes place in the early career years and then diminishes as the pilot advances up the career ladder. The requirements of the first flying gate must, by Air Force policy, be met during the first 6 years of a pilot's career. After that, the pilot must begin to consider assignments to staff, supervisory, and support positions and non-flying career broadening assignments. With the first gate achieved, 12 years remain to accumulate an additional 3 to 5 years of flying experience in order to achieve the flying requirements for the second gate. The percentages of the pilot force in positions requiring them to fly are as follows: 100 percent of the lieutenants, 92.3 percent of the captains, 64.7 percent of the majors, and 49.5 percent of the lieutenant colonels. The Air Force says that it is continuing to reduce career-broadening assignments.

APPENDIX II

THE RATED MANAGEMENT PROCESS

Prior to 1975, the Air Force's primary concern was with total Air Force requirements. The Air Force cross-trained and retrained pilots to match inventories with requirements for specific weapon systems. As training costs increased and resources diminished, the Air Force approved in 1975 what has become known as the rated management process. The process was intended to enable the Air Force to manage its pilot/navigator resources so as to maintain combat readiness while minimizing costs. The process is based on identifying requirements, inventories, and readiness objectives for the major weapon system groups--fighters, reconnaissance, bombers, tankers, trainers, strategic airlift, tactical airlift, helicopters, and mission support.

The basic concept of the process is simple.

-- Major weapon system requirements and inventories are defined (without considering an addition of pilots/navigators) as precisely as possible through the end of the Five Year Defense Plan.

-- The number of new pilots/navigators that must be added each year to sustain an inventory that will equal requirements at the end of the plan is ascertained.

-- The undergraduate flight training program is sized to produce the proper number of new pilots/navigators. However, the size is constrained by the operational units' ability to absorb inexperienced pilots.

Between 1970 and 1976, the Air Force had a major reduction in requirements for pilots. One reason was force structure reductions.

Table II.1 presents Air Force data on active duty pilot requirements and inventories for fiscal years 1980 through 1992. It shows that the rated management process has been successful in achieving an overall pilot inventory within about 5 percent of the Air Force's stated requirements.

Table II.1: Comparison of Requirement and Inventory for Active Duty Pilots

Fiscal year	Requirement	Inventory	Variance
1980	22,963	21,896	-1,067
1981	23,404	22,297	-1,107
1982	23,740	22,814	-926
1983	23,719	23,458	-261
1984	23,645	23,901	+256
1985	23,987	24,198	+211
1986	24,173	24,229	+56
1987[a]	23,499	23,549	+50
1988	23,001	23,198	+197
1989	22,970	22,914	-56
1990	22,839	22,518	-321
1991	22,740	22,108	-632
1992	22,710	21,740	-970

[a]Data for 1987 through 1992 are projections.

However, from a management or oversight perspective, total requirements and inventory can provide a misleading picture of the composition of our "combat-ready" fighting force. For example, even though the fiscal year 1985 total inventory exceeded requirements by 211 pilots, inventories for some weapon system groupings exceeded and others fell short of requirements in much larger numbers. Bombers had the biggest pilot excess (589) and fighters the biggest pilot shortage (658), as shown in tables II.2 and II.3.

Table II.2: Bomber Pilots at the End of Fiscal Year 1985

Category	Requirement	Inventory	Variance
Force	807	909	+102
Training	176	206	+30
Staff	498	628	+130
Air Training Command	87	160	+73
Rated Supplement	101	354	+253
Education	38	67	+29
Pipeline/Transient	177	149	-28
Total	1,884	2,473	+589

Table II.3: Fighter Pilots at the End of Fiscal Year 1985

Category	Requirement	Inventory	Variance
Force	3,154	3,396	+242
Training	928	938	+10
Staff	2,422	2,035	-387
Air Training Command	383	203	-180
Rated Supplement	372	245	-127
Education	166	168	+2
Pipeline/Transient	787	569	-218
Total	8,212	7,554	-658

In commenting on a draft of this report, DOD stated that significant changes in both force structure and crew to aircraft ratios, implementation of the total force concept, and pilot retention rates that vary depending on the type of aircraft and the major air command have resulted in a less-than-desirable pilot inventory distribution.

DOD also noted there are two basic types of pilot requirements within each weapon system grouping--specific requirements and generalist requirements. A specific pilot requirement is for a pilot with expertise in a specific weapon system. A generalist requirement may be filled by a pilot who is not experienced in a specific weapon system. The Air Force said that inventories for all weapon system groups exceed their specific requirements. Shortages for some of the generalist requirements are alleviated by excesses in some of the other weapon system groups. For example, the excess of bomber pilots, which the Air Force said was caused by short notice force structure reductions, was used to fill generalist positions in the fighter weapon group.

REQUIREMENTS

The rated management process begins with the computation of total Air Force rated requirements through the end of the Five Year Defense Plan. The justification for a rated requirement may be based on one or more factors, including force structure, training programs, overhead, work load, professional/career development, and education. Table II.4 shows the relative size of each requirement category for fiscal year 1987.

Table II.4: Pilot Requirements for Fiscal Year 1987

Budget category	Requirements	Percent of total
Force	9,682	41
Training	3,925	17
Staff/supervision	5,569	24
Advanced students	1,516	6
Air Force Institute of Technology	185	1
Professional military education	277	1
Supplement	1,887	8
Transient	458	2
Total	23,499	100

The basis for calculating requirements in each budget category follows:

-- Force structure: Requirements are computed by applying crew ratio and crew complement factors to the number of authorized aircraft.

-- Training: This category, which includes instructor pilots, is determined by consolidating the needs of all the individual flying training programs. The major factors are the annual student load and the instructor to student ratio.

-- Staff/supervision: This category of requirements is based on overhead and work load factors coupled with the need for rated experience.

-- Advanced students: This category includes students taking all formal advanced flight training courses. It excludes students in undergraduate pilot training. Requirements for this category are determined by multiplying the annual number of graduates from undergraduate flight training by the course length in calendar days and dividing by 365.

-- Air Force Institute of Technology, Professional military education, and Supplement: These three categories differ from the preceding ones in that positions in these categories, although authorized, cannot be tracked to a rated manpower authorization. These nonrated positions are staff year allowances for rated officers to participate in professional development and education or to broaden their careers by obtaining operational

experience in nonrated career fields.

-- Transient: This category is a staff-year allowance for travel and leave based on historical data and the projected size of the rated officer requirement.

Total pilot requirements are determined by major weapon system groupings such as fighters, bombers, and tankers. Most pilot requirements can be clearly identified with a major weapon system group. Other requirements, however, such as the supplement, transient, advanced students, Air Force Institute of Technology, and the professional military education requirements, are distributed based on each major weapon system's capacity to accept new pilots.

INVENTORY

The rated management process also focuses on establishing an inventory of pilots that matches the rated requirements for each major weapon system grouping. The pilot inventory must not only be equal to requirements, but pilots must be trained to sufficient skill and experience levels for the Air Force to maintain a credible combat posture.

The Air Force uses a series of computer models to project rated inventories by aeronautical rating and major weapon system group. These models, which use historical loss rate data, consider future economic conditions and policy changes unique to each weapon system group and officer group by the year of commission. The projections provide the basis for determining the number of new pilots needed for each weapon system group.

Rated inventory projections begin with a synopsis of the current inventory, which, along with programmed promotion data and in-system separations information, is used to project an end-year inventory. An inventory at the end of the Five Year Defense Plan is calculated through application of loss rates that best represent the expected inventory behavior. Loss rates include all types of losses to the rated force (separations, retirements, deaths, groundings, and promotions to colonel). The rates used to determine the official Air Force inventory represent the best estimates of expected retention factors both internal and external to the Air Force (for example, the economy, airline hiring, and entitlement programs).

UNDERGRADUATE FLIGHT TRAINING

The estimated requirements are compared to the projected inventory, without the addition of new pilots, at the end of the Five Year Defense Plan. The difference is divided by five to

determine the average number of new pilots that must be added each year to balance inventories with requirements by the end of the Plan. However, operational units are limited in the number of new pilots they can absorb in any 1 year. As a result, the undergraduate flight training rates are modified to strike a balance between long-term force sustainment and near-term readiness. This balancing of requirements and inventory is discussed in appendix III.

BALANCING INVENTORY WITH REQUIREMENTS

The sustainment rate is the number of new pilots that must be trained annually to maintain an inventory equal to requirements. If a requirements/inventory balance by major weapon system is to be achieved and maintained, the sustainment and absorption (the number of new pilots that can be accepted) by system must be brought into a proper relationship either by reducing sustainment, increasing absorption, or a combination of the two. A reduction in the annual need for new pilots is likely to be more cost effective and have a more positive impact on readiness than making adjustments at the operational unit level to increase absorption. A discussion of the advantages and disadvantages of some options follows.

REDUCING SUSTAINMENT

The number of new pilots that must be trained and added to the rated force is determined by subtracting the projected inventory at the end of the Five Year Defense Plan from the requirements. The annual number of new pilots needed can be decreased by reducing requirements or increasing inventory levels through increased pilot retention (i.e., the length of time a pilot remains in service).

Requirements

The Air Force has actively pursued ways to reduce requirements. For example, several efforts are planned or under way within the Tactical Air Force that should help to reduce requirements. The following completed or proposed efforts for fiscal years 1985 to 1989 are expected to eliminate 491 rated requirement positions:

-- Standards are to be established for the number of instructor pilots in TAC's Replacement Training Unit (reducing requirements by 54 positions).

-- Academic/simulator instructors are to be contracted (reducing requirements by 70).

-- Enlisted personnel are to be substituted to handle wing-level flying safety officer duties (reducing requirements by 19).

-- A new operations management career field has been created for nonrated officers to handle operations and training functions that have traditionally been within the rated domain, such as command post, airfield management, and

base operations (reducing requirements by 169). These reductions are reflected in the fiscal year 1988 presidential budget requirements statement.

-- Officer-to-enlisted conversion requirements of the fiscal year 1987 DOD Authorization Act are to be implemented (reducing requirements by 165).

-- Other miscellaneous actions are to be taken (reducing requirements by 14).

Similar efforts in other major commands are likely. For example, the Air Force's development of its operations management career field, is estimated to result in the conversion of 600 positions Air Force-wide from rated to nonrated.

Requirements for the Air Force Institute of Technology, professional military education, and rated supplement and some portion of staff requirements reflect the impact that the professional officer concept has on total pilot requirements. Table III.1 shows the destination of 2,696 fighter pilots who made permanent change-of-station moves in fiscal year 1986.

Table III.1: Fighter Pilot Permanent Change-of-Station Moves in Fiscal Year 1986

	Destination						
Origin	Force	Training	Staff	Advanced students	PME	Supplement	Total
Force	298	109	233	135	28	29	832
Training	98	33	54	39	20	6	250
Staff	296	60	324	46	35	33	794
Advanced students	355	14	29	92	0	19	509
Professional military education (PME)	14	0	56	4	0	8	82
Supplement	88	0	24	75	6	36	229
Total	1,149	216	720	391	89	131	2,696

The professional military education (PME) and supplement categories are not based on rated authorizations. These positions are used to broaden the pilots' experience base to develop them into total officers. Increased pilot specialization, as discussed later in this appendix, could reduce requirements in this area.

APPENDIX III

TAC's priority plan for rated positions, in accordance with Air Force policy, is to fully meet both the rated force and training requirements. Any shortages would result in unfilled non-flying staff positions. Accordingly, a shortage of fighter pilots should not affect aircraft manning. A review of recent fighter pilot requirements and inventory data generally confirmed that this policy is followed within the Tactical Air Forces (TAF). For example, table III.2 shows that the inventory of fighter pilots available to TAF in fiscal year 1986 was distributed so that force requirements were overmanned and training requirements were almost fully met, while staff requirements absorbed most of the fighter pilot shortfall. This shortfall can be reduced from inventory excesses in other weapon system groups.

Table III.2: Comparison of TAF Fighter Pilot Requirements to Inventory in Fiscal Year 1986

	Force	Training	Staff
Inventory	3,311	849	1,372
Requirements	3,085	886	1,697
Difference	226	- 37	- 325
Percentage of requirements satisfied by inventory	107	96	81

The unfilled non-flying staff positions appear to be the prime candidates for consideration in any requirements reductions. A position-by-position evaluation is needed to determine if any staff positions could be eliminated.

Retention

Increased pilot retention is also a means of reducing the sustainment rate and, as a result, annual training costs. For example, if the total pilot requirements are for 23,499 pilots and the average length of service per pilot is 13 years, the annual sustainment rate is 1,808 new pilots. If the average service life increased to 14 years per pilot, the annual sustainment rate would decrease to 1,679 new pilots.

Pilot retention rates have changed dramatically over the years. For example, the average estimated length of service for Air Force pilots has ranged from a low of 8.7 years in September 1979 to a high of 15.6 years in September 1983, with a subsequent decline to 13.1 years by March 1986.

The key factors identified as reducing Air Force retention include increased job opportunities in the private sector, the widening pay comparability gap, threats to the retirement system and the perceived erosion of benefits, the high cost of permanent change-of-station moves, and working spouses. The decline in pilot retention has been a growing concern because losses are expensive both in terms of training dollars and experience.

The Air Force has focused on internal factors over which it has some control. These include assignment policy, leadership, promotion, family considerations, professional military education, and advanced degrees, as well as job factors, such as length of the duty day and the number of additional duties. Retention of rated personnel is said to be a top priority.

INCREASING ABSORPTION CAPABILITY

A primary problem in achieving and maintaining a pilot inventory equal to requirements is that operational units cannot accept and give new pilots the opportunity to become experienced at a fast enough rate. The absorption dynamics of a squadron at an operational wing provides an example of factors limiting the absorption of new pilots into operational units. For example, a squadron with 24 authorized aircraft and a ratio of 1.25 crews per aircraft would have 30 pilot positions. Nine of the 30 positions would be filled by experienced pilots---flight commanders, instructor pilots, and flight leads. Twenty-one positions would be filled by new pilots---inexperienced pilots and flight leads. A squadron must meet an established stability factor (i.e., the minimum time a pilot is required to remain in a position prior to being transferred). In this example, if the established stability factor is 2.8 years the squadron can absorb 7.5 new pilots each year (i.e., 21 new pilot positions divided by the 2.8 year stability factor).

The Air Force has several options to increase the number of new pilots that can be absorbed into operational units. These include (1) increasing the size of the force structure, (2) decreasing the experienced to inexperienced ratio, and (3) decreasing the weapon system stability factor.

An obvious way to increase the force structure is to procure additional aircraft. Given current budget constraints, however, the acquisition and support costs associated with this option make it an unlikely choice.

Another option is to reinstate National Guard or Air Reserve units to the active forces. A total force concept has resulted in the transfer of a number of active units to the Air National Guard or Air Reserve without a corresponding transfer of overhead

positions. A reinstatement of these units, however, is unlikely under today's budgetary constraints and the perception that operating reserve units cost less.

A third option is to increase crew to aircraft ratios. Unless additional flying hours are provided and additional missions can be flown, however, use of this option would result in less flying time for each pilot, which could reduce combat readiness.

A fourth option to increase force structure is to reduce the number of new pilots. Reducing the number of new pilots would reduce requirements for training and aircraft, which could be reassigned to combat needs. For example, at TAC, fighter pilot shortages result in the assignment of additional operational fighter aircraft to training roles. These reassignments further reduce the already limited number of operational unit cockpits available to provide experience to new pilots. Table III.3 shows that in January 1987 the number of aircraft assigned for training represented 27 percent of the total Tactical Air Forces inventory.

Table III.3: TAF Aircraft Inventory in January 1987

Aircraft	Total assigned	Assigned status		Percent assigned to training
		Combat	Training	
F-4	330	231	99	30
RF-4C	118	75	43	36
F-106	15	15	0	0
F-15	610	473	137	22
A-10	374	279	95	25
F-111	236	161	75	32
F-16	768	558	210	27
Total	2,451	1,792	659	27

Note: Includes only fighter, reconnaissance, and attack aircraft.

Decreasing the experienced to inexperienced ratio (by allowing more inexperienced pilots) and/or decreasing the stability factor (by allowing more new pilots each year) would provide an immediate increase in absorption. At operational wings, duty tours would be shortened and experience levels would decrease. These changes, however, would most likely reduce the cohesiveness and capabilities of the units, increase training and permanent change-of-stations costs, and reduce personnel stability.

Decreasing the experienced to inexperienced ratio would make more aircraft available for inexperienced pilots. New pilots, to become experienced, must fly a certain number of hours (500 hours for most fighter aircraft) in their primary aircraft at an operational unit. This takes about 2-1/2 years. The current experienced/inexperienced ratio for many units is 50/50. For example, of 607 F-15 and F-16 pilots authorized and assigned to the Alaskan, European, and Pacific theaters, as of February 1987, 310 pilots, or just over 50 percent, were inexperienced pilots. This means that some of the most technically advanced and costly aircraft in the U.S. weapons arsenal, positioned in strategic locations, would be flown during armed conflict by pilots the Air Force considers inexperienced. TAC's position is that "Combat readiness is a function of quality weapon systems and quality warriors--the two are inseparable--the most modern vehicles of war are of little value in the hands of inexperienced warriors."

A number of articles in defense-related and commercial magazines and newspapers support the idea that a more experienced pilot performs better. An article in the March 1987 Air Force Magazine on the A-10 tactical competition and gunnery meet called "Yukon Lightning" included these comments from the officer who developed the exercise scenarios:

> "The experience level of the pilots who participated was a critical element in their performance. ... The guys who had more experience did better. The guys who had been flying with each other a lot did better and the folks who had a lot of experience and had also been flying with each other a lot did the best."

AIR FORCE ACTIONS TAKEN OR CONSIDERED

The rated management process has received Air Force management's scrutiny from its inception. Between 1975 and 1981, at least four separate rated management study groups addressed basically the same issues: how to develop and sustain an inventory that equals validated requirements while at the same time maintaining a stable, combat-ready force. The results of these efforts were basically the same: much analysis and documentation, many recommendations, and improved management of the rated force. However, the Air Force acknowledged that, within the constraints of the current and anticipated force structure, aircraft, and flying hours, the required inventory and a stable, combat-ready force could not be sustained.

In the late 1970s, the major problem confronting rated management officials was the existing and forecasted pilot inventory deficit. As a result, the Air Force prepared a rated prioritization plan to meet 100 percent of its force and training

requirement authorizations, because these represent primary mission and inventory sustainment capabilities. Deficits would result in shortfalls in the rated supplement and rated staffs. In the early 1980s, the increasing number of undergraduate flight training students highlighted the problem of how to absorb enough new pilots into the limited number of cockpits available to sustain the total pilot requirement. One ad hoc study group examined 16 proposed initiatives to increase the Air Force's absorption capability, focusing on aircraft to crew ratio and the active/Air Reserve force structure mix. Of the 16 initiatives, only 2--Career Trainer and Project Season--were considered fiscally feasible and pursued. The Career Trainer initiative established career positions as professional training instructors within the Air Training Command. Project Season provided for the assignment of active duty flight school graduates to selected Air National Guard units to gain experience.

As noted earlier, the Air Force has undertaken initiatives over the years to reduce requirements, increase absorption, and increase pilot retention levels. These initiatives include increasing the initial tour commitment for pilot training graduates to 8 years.

The basic question that the Air Force has been trying to answer is: What is the best way to sustain a large enough pilot inventory to meet requirements while retaining a credible combat posture? The Air Force continues to address the issues, but many of the problems, such as pilot inventory deficits, and pilot retention and absorption, remain.

GREATER PILOT SPECIALIZATION

One objective of rated management is to maintain a credible combat force. Inventory deficits, declining pilot retention rates, and the continual flow of inexperienced pilots through the operations units indicate that the pilot force is somewhat less than it should or could be. The career emphasis on pilots as total officers, with limited opportunity for pilot specialization, is seen by some as a limiting influence on the success of the rated management process in maintaining a stable, combat-ready pilot force.

The authors of a 1981 study funded by the Air Force's Office of Scientific Research concluded that non-flying responsibilities and personnel policies were largely responsible for many pilots' leaving the Air Force.

> "The most consistent finding of the analysis of interviews and written comments of both airline and Air Force pilots is that pilots like to fly and dislike the

non-flying aspects of Air Force flying jobs. A large majority of airline pilots did not remain Air Force pilots because of perceived limited opportunities of spending a successful career of flying in the Air Force. Much of the dissatisfaction of Air Force pilots in their current flying jobs are with such things as additional duties, pressures to obtain additional education, pressures to career broaden into non-flying career fields and lack of opportunity for promotion in flying jobs. Many of the airline pilots, as well as Air Force pilots who plan to attrit, indicated they would have remained or would remain in the Air Force if they were given an opportunity to spend a career performing flying duties and be equitably rewarded for doing so."

A fighter pilot, in an April 1986 Air Command and Staff College research report, wrote that:

"The benefits of looking down the road a few years for effective career planning are high. A typical fighter pilot's near-term, and probably long-term, goal usually is to fly as much as possible. The author has personally known fighter pilots that went from flying job to flying job, only to reach their major or lieutenant colonel promotion board unprepared to meet the competition. It's obvious fighter pilots not selected for promotion quickly limit their opportunities for further active duty flying.

. . . . .

"The satisfaction of flying an F-15 or F-16 every day can frequently cause career myopia for you as an Air Force officer. An integral part of that job satisfaction is the indescribable feeling of strapping on a jet and training hard for that day you'll have to fly, fight, and kill. The U.S. Air Force, unlike other air forces, does not have a fighter pilot technician career field. As a fighter pilot, you must be concerned with your career as an Air Force officer. You should not only give your present job 110 percent, but you should also consider how your near-term career decisions will affect your long-term career goals."

A Military Airlift Command (MAC) pilot in an April 1986 Air Command and Staff College student report cited an assessment by MAC wing commanders of the reasons their pilots were leaving the Air Force. The most common reason given was "a desire to fly for an entire career."

APPENDIX III

An article in the July/August 1985 issue of Air University Review, written by a fighter pilot, included these comments:

> "In the Air Force today, all officers are expected to conform to the whole-person or generalist concept. With the officer pilot force, however, I believe that the Air Force can increase its fighting ability and simultaneously provide more job fulfillment for its members by allowing some officers to serve as career pilots or specialists. By doing so, I believe that the Air Force can capitalize on individual diversity to produce a better fighting force.
>
> . . . . .
>
> "Looking at the extensive training which a pilot must complete gives insight into why many military flyers want to be flying specialists for the duration of their careers. . . . To reach the point where he or she is cleared to fly as a formation leader, the individual has had to work for eight years (including college) and probably has a minimum of five years' commissioned service. Just as the pilot is reaching the point of starting to refine flying skills and exceed the basic proficiency level, though, the pilot must start planning for career-broadening assignments and accomplishments in order to be competitive for promotion in a few years. For many, this fact of life is not acceptable.
>
> . . . . .
>
> "I also believe that the Air Force would gain a core of flying experience at the unit level that is currently missing. In our Air Force, most of the people with a great amount of flying experience are usually in the battle commander area or on a headquarters staff rather than in base operations or on the flight line, where flying questions invariably arise. Of those pilots in operational cockpits at the unit level in the tactical air forces (TAF), the experienced/inexperienced ratio is approximately 50/50. The . . . long-term goal is a 60/40 mix. Besides falling short of the long-term goal, the 50/50 ratio is even more suspect if one considers how quickly a pilot can be labeled as an 'experienced' fighter pilot. In the TAF, a pilot is 'experienced' after only 500 hours in his particular fighter or after 300 hours in the fighter if the pilot has a total of 1000 instructor or first pilot hours. Usually these levels can be reached within a couple of

years in an operational unit. I was identified as an 'experienced' fighter pilot after only eighteen months of operational flying in the F-106 interceptor--certainly not enough time to acquire the wisdom that the term experienced seems to imply."

A recent Air University Review article written by a veteran pilot, who has been both a product of the rated management system and a manager in the system, made these observations:

". . . we do not do a very good job of rated officer management if enhanced combat capability is the final objective. The personnel rated management system attempts to maintain the fighter pilot rated force at a level based on many factors, such as unit manning levels, training levels, and unit experience levels. Many reasons are used for moving fighter pilots from one air base to another, from one aircraft type to another, or from rated duties to a staff position. These reasons include, but are not limited to, the 'fairness' of personnel moves, remote assignment eligibility, career broadening, manning levels, and career progression. Rarely has the personnel system explained a move by stating that it is in the best interest of increased combat capability. In fact, the rated management system would be hard pressed to move individuals based on pilot capability since there is no formal system that rates pilots according to their relative individual capabilities. Promotions are not made on pilot capabilities, but rather on officer effectiveness reports, and most assignments are made on professional career progression rather than combat capability."

The author goes on to say,

". . . specialized fighter training should begin early. At every stage of training, competition, and ratings based on fighter pilot performance should be used for selection to top fighter pilot positions.

"The rated management system needs a thorough review. Personnel assignment policies need to be changed so they can respond to the needs of combat capability and not to an arbitrary 'good deal/bad deal' list. In other words, if a forward air controller job needs filling, you don't take the best F-15 pilot to fill it just because he's due a 'bad deal.' More sensitivities need to be paid to the policies that force early rotations and create turbulence in the units. In

today's fighter force, it takes two to three years to upgrade a flight lead and another two to three years to get good at it. Most new fighter pilots don't stay in their first squadron more than two to three years, and many don't remain in their first assignment aircraft longer than five years. The result is that most operational fighter squadrons are continually upgrading new pilots, and very few squadrons reach a level of high combat capability. What is required by the rated management system is a conscious effort to keep good fighter pilots in the same aircraft, same mission, same unit for longer periods of time. Gone are the days when we can afford a universally assignable pilot, or even a 'generic fighter pilot.'"

The Air Force addresses pilot retention and other rated management issues on a day-to-day basis. However, it has not undertaken an overall study to examine the advantages and disadvantages of offering pilots an alternative career path with a greater focus on the pilot as a specialist rather than the total officer. Given the current and anticipated force structure, this alternative career path could be evaluated for its potential in sustaining pilot inventories within budget constraints. In such an evaluation, questions like the following could be addressed:

-- What types and how many requirements could be reduced by having an alternative career path for pilots?

-- Would some pilots be more likely to stay in the service longer if such an alternative is available? How much longer?

-- What would be the effect of this alternative career path on line units' military capability?

-- With an alternative career path, would the reduced need for new pilots be equal to or greater than the operational units' reduced capacity to accept new pilots?

OBJECTIVE, SCOPE, AND METHODOLOGY

We undertook this assignment because of congressional concern about the costs of providing training and experience to Air Force pilots. We briefed the Subcommittee on Defense, House Committee on Appropriations, on our work and were asked for a written report. Our overall objective was to provide insight on the Air Force's rated management system to assist in congressional oversight. We focused our review on the career paths of pilots, since they represent over two-thirds of the rated force. We documented and analyzed the factors that influence the career of an Air Force pilot with particular emphasis on overall career development as an Air Force officer.

We conducted our work from September 1986 to May 1987 at Air Force Headquarters, Washington, D.C.; TAC Headquarters, Langley Air Force Base, Virginia; and the Military Personnel Center, Randolph Air Force Base, Texas. At each location, we interviewed agency officials and analyzed regulations and documents, such as Air Force Regulation 36-23, which outlines the Officer Career Development Program, and the Rated Management Document, which annually summarizes the results of the rated management process. We also analyzed a number of reports prepared by pilots attending the professional military education courses at the Air War College and the Air Command and Staff College at the Air University, Maxwell Air Force Base, Alabama.

We did not determine the validity of stated requirements or assess the reliability of the automated data systems we used. For example, we did not verify data on pilot requirements, inventory, training costs, and ratios of experienced to inexperienced pilots. Our review was conducted in accordance with generally accepted government auditing standards.

APPENDIX V

COMMENTS FROM THE ASSISTANT SECRETARY OF DEFENSE FOR FORCE MANAGEMENT AND PERSONNEL

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D C 20301-4000

FORCE MANAGEMENT
AND PERSONNEL

13 NOV 1987

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

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "AIR FORCE PILOTS: Developing and Sustaining a Stable, Combat-Ready Force," dated August 18, 1987 (GAO Code 392214 OSD Case 7394).

While the Department concurs with the GAO findings, there is concern about the conclusions that might be inferred by a reader who is not knowledgeable on the complex Air Force rated management process. This concern centers around the GAO reliance on one Air Force regulation that is currently undergoing major revision, with publication anticipated in December 1987. Additionally, the historical data in the report are limited to the period from FY 1980 to FY 1986. To fully understand the process and the application of policies used to develop a combat-ready pilot force, some of the historical information dating back to 1970 is useful.

The GAO suggested that the Air Force conduct a study to examine an alternative pilot specialist career path. As discussed in the enclosed comments, 82 percent of Air Force pilots are currently in flying positions. Furthermore, the Air Force has identified several disadvantages with this concept, which are outlined in the enclosed comments. As a result of a recent Defense Resources Board review of pilot retention, the Air Force will evaluate the cost benefit of creating a 20 year career path that places a pilot in a flying billet for 80-100 percent of his/her career.

Specific DoD comments on the findings and suggested actions are provided in the enclosure.

Sincerely,

David J. Armor
Principal Deputy

Enclosure:
As stated

GAO DRAFT REPORT DATED AUGUST 18, 1987
(GAO CODE 392214) OSD CASE 7394

"AIR FORCE PILOTS: DEVELOPING AND SUSTAINING A STABLE, COMBAT-READY FORCE"

DEPARTMENT OF DEFENSE COMMENTS

* * * * *

FINDINGS

FINDING A: The Officer Career Development Program. The GAO observed that, within the DoD, military pilots are primarily officers and secondarily pilots and are, therefore, trained to be "total" officers in order to be competitive in their careers with other officers. The GAO further observed that the Air Force considers intense specialization as a limitation on officer usefulness. According to the GAO, the Air Force career development program provides a 30-year path that is intended to mold the pilot into a total officer, in preparation for assuming ever increasing levels of management responsibility. The GAO observed that Air Force Regulation 36-23 provides the suggested pilot career progression, as follows:

- Initial Phase. The first 5 years of a pilot's career include undergraduate flight training, qualification in an operational aircraft, and unit-level assignment to increase flying experience with the primary emphasis on establishing flying skills. The following table shows the Tactical Air Command (TAC) cost to train and experience each F-4, F-15, and F-16 fighter pilot over this initial phase.

Tactical Air Command Costs
To Train and Experience
A Fighter Pilot

	F-4	F-15	F-16
Basic Cost (Officer Training, Undergraduate Pilot Training)	$ 397,818	$ 397,818	$ 397,818
Fighter Training (Lead in Training "B" Course)	1,018,272	1,539,523	1,376,355
Mission Qualification Training	186,652	216,389	138,807
3-Year Operations Tour	4,547,679	5,350,551	3,380,532
Total	6,150,421	7,504,281	5,293,512

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- Intermediate Development Phase. The intermediate development phase extends from years 6 through 11 of the pilot career. The initial portion is usually devoted to refining flight and leadership skills. This period is also considered an opportune time for pilots to move into associated fields, such as flight safety, flight-test maintenance, or experimental testing. During this phase, some officers are assigned to support functions and move into the "supplement," which includes pilots serving in support duties at all levels not requiring rated personnel. These officers continue to be considered rated resources and represent a readily available resource of active duty pilots and navigators to augment operational units in a contingency, provide rated presence in selected support career fields, and broaden the experience base.

- Advanced Development Phase. The advanced development phase extends from years 12 through 17, and provides officers with their most significant advances in growth and development. Officers at this career phase fill most operational staff positions, such as squadron operations officer, with a few attaining squadron commander status.

- Staff Phase. The staff phase extends from years 18 through 22 and involves duty assignments to command and responsible staff positions at wing, major command, and Air Staff levels.

- Executive Phase. During the executive phase, officers, who have continued to be promoted to the rank of colonel and have shown that they are qualified for greater responsibility, may expect assignments as wing or air division commanders, vice or deputy commanders, or high level staff directors. (p. 1, pp. 8-14/GAO Draft Report)

Now on pp. 1, 7-10.

DoD Response: Concur. It should be noted that the entire career development program and regulation are currently being revised. The revised Air Force Regulation 36-23, Officer Career Development, should be published in December, 1987. The revision aligns the career development program to the actual distribution and utilization of the pilot force, which emphasizes the primacy of rated duties in the operations (pilot) career field well into the Intermediate Development Phase. In effect the point in time when a pilot may be assigned to a career broadening assignment, selected for residency at a professional military education school or eligible to enroll in a professional military education correspondence course will occur later in an officer's career. The Goldwater-Nichols Reform Act of 1986 reaffirmed the need for professional military education as part of an officer's professional development.

Many of the positions in the support career field need some type of operations influence for successful mission accomplishment. The Packard Commission recognized this fact by identifying the need for operational expertise in the research, development and acquisition process. Pilots in support positions supply this needed operations influence.

The officer commissioning programs are also a major area where pilots are used in support requirements. This utilization is a key part of the Air Force effort to encourage the best qualified candidates to volunteer for flight training and accept the extended active duty service commitment required for that training.

FINDING B: Aviation Career Incentive Pay. According to the GAO, the Aviation Career Incentive Act of 1974 encourages pilots to remain on active duty for career service and provides a system for pilots and navigators to qualify for continuous incentive pay using the "gate" concept. The GAO observed that the "gates" occur on the anniversaries of the 12th and 18th years of rated service, including time spent in flight training. The GAO reported that by the 12th year of rated service, an officer must have at least 6 years of flying experience to be entitled to continuous aviation pay until the 18th, when an officer must have performed 9 years of operational flying to be entitled to aviation pay through the 22nd year, and 11 years to be entitled through the 25th year of service. According to the GAO, only officers flying after 25 years of service are still entitled to such pay. The GAO found that the emphasis on flying takes place in the early career years (i.e., the first 6 years); after that, the pilot must begin considering non-flying career broadening assignments to remain competitive for promotion under the total officer concept. (pp. 14-15/GAO Draft Report)

Now on pp. 10-11.

DoD Response: Concur. The revised Air Force career development program will reflect the delay in some of the career broadening assignments, such as support positions outside of the operations career field and professional military education, until later in a pilot career (also see DoD Response to Finding A). Also, Air Force policy requires pilots to fly for the first six years of their career. The intent is to shift the emphasis to primacy of rated duties. Officers who have demonstrated potential for increased responsibility will be competitive for advancement. During the period from FY 1980 through FY 1987, career broadening requirements have been reduced by 6 percent (748 positions). The FY 1988 President's Budget reduced these positions an additional 208 through FY 1992, for a net change of 7.6 percent since FY 1980. These changes have resulted in 82.2 percent of all pilots being in positions requiring them to fly in the performance of their duties.

APPENDIX V

FINDING C: The Rated Management Process. The GAO observed that, in 1973, the Air Force initiated the rated management process to manage its pilot/navigator resources so as to maintain combat readiness while minimizing costs. According to the GAO, the process is based on identifying requirements and inventories by the major weapons system groups--fighters, reconnaissance, bombers, tankers, trainers, strategic airlift, tactical airlift, helicopters, and mission support. The GAO concluded that the rated management process has been successful in achieving an overall pilot inventory within about 5 percent of the Air Force stated requirements, as shown in the following GAO table:

Comparison of Active Duty Pilot Requirements
to Actual and Projected(*) Inventories

Fiscal Year	Requirements	Inventory	Variance
1980	22,963	21,896	-1,067
1981	23,404	22,297	-1,107
1982	23,819	22,814	-1,005
1983	23,719	23,458	-261
1984	23,645	23,901	+256
1985	23,987	24,198	+211
1986	24,173	24,229	+ 56
1987 (*)	24,123	24,125	+ 2
1988 (*)	24,256	23,964	-292
1989 (*)	24,427	23,786	-641
1990 (*)	24,491	23,585	-906
1991 (*)	24,506	23,400	-1,106

The GAO further concluded that total requirements and inventory can be misleading and offered the example that even though the FY 1985 total inventory exceeded total requirements by only 211 pilots, some weapons system groupings inventories exceeded and others fell short of requirements. The GAO found that bombers had the largest pilot excess (589) and fighters the biggest pilot shortage (658). (p. 2, pp. 16-17/GAO Draft Report)

Now on pp. 1, 2, 12-13.

DoD Response: Concur. Significant changes in both force structure and crew to aircraft ratios, implementation of the Total Force Concept, and varying pilot retention rates between different aircraft and Major Air Commands have resulted in a less than desired pilot inventory distribution.

Overages in the bomber pilot inventory resulted from short notice changes in the bomber force structure and one of the best pilot retention rates of all the weapon system groups. This was followed by an intentional build-up in preparation for the B-1B and the simultaneous need to maintain the B-52 readiness posture.

There are two basic types of pilot requirements within each weapons system grouping--specific and generalist requirements. A specific pilot requirement dictates that it must be assigned to a pilot possessing expertise in a specific weapons system. A generalist requirement must be filled by a pilot, but does not require expertise in a specific weapons system. These generalist requirements are distributed among each of the weapons system groupings, but may in fact be manned by pilots from other weapons system groupings. All weapons system groups exceed their specific requirements. Shortages in some of the generalist areas are manned from overages in some of the other weapons system groups.

FINDING D: Requirements. The GAO reported that the rated management process begins with the computation of total Air Force rated requirements through the end of the 5-year defense plan. The GAO observed that the justification for a noted requirement may be based on force structure, training programs, overhead workload and professional/career development and education. The following GAO table shows the relative size of each requirement category for FY 1987.

Pilot Requirements for Fiscal Year 1987

Budget Category	Requirements	Percent of total
Force	9,893	41
Training	3,948	16
Staff/supervision	5,759	24
Advanced students	1,511	7
Air Force Institute of Technology	185	1
Professional Military Education	277	1
Supplement	1,992	8
Transient	458	2
Total	24,123	100

The GAO found that the majority of pilot requirements can be clearly identified with a major weapons system group; however, other requirements, like the supplement, transient, advanced students, Air Force Institute of Technology, and the professional military education requirements, are distributed based on each major weapons system's relative capacity to accept new pilots.

Now on pp. 14-16.(pp. 19-21/GAO Draft Report)

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DoD Response: Concur. It should be noted that the term "overhead" refers to all requirements other than the force line (operational flying units). These career broadening areas include training, staff, supervision, leadership, education, and support positions from the lowest to highest organizational levels throughout the Air Force, in which only experienced pilots are assigned.

Current requirements from the FY 1988 President's Budget are provided to update the year old data included in the GAO report. The new data reflect some of the reductions that have occurred in the overhead or career broadening positions mentioned in the DoD Response to Finding B.

FY88 President's Budget Pilot Requirements
For Fiscal Year 1987

Budget Category	Requirements	Percent of Total
Force	9,682	41
Training	3,925	17
Staff/Supervision	5,569	24
Advanced Students	1,516	6
Air Force Institute of Technology	185	1
Professional Military Education	277	1
Supplement	1,887	8
Transient	458	2
Total	23,499	100

FINDING E: Inventory. The GAO observed that the rated management process also focuses on establishing a sufficient inventory of pilots with diversified skills in proportion to the rated requirements for each major weapons system group. The GAO further observed that the pilot inventory must not only be equal to requirements, but pilots must be trained to sufficient skill and experience levels for the Air Force to maintain a credible combat posture. The GAO noted that computer models are used to project rated inventories by aeronautical rating, and major weapon system groups provide the basis for determining the number of new pilots needed for each group. According to the GAO, the current inventory is adjusted to an end-year inventory, based on programmed promotion data and in-system separations information, with the inventory position at the end of the 5-year defense plan calculated through application of loss rates that represent the expected inventory behavior. (pp. 21-22/GAO Draft Report)

Now on p. 16.

DoD Response: Concur. The computer models use projected attrition data based on varying sizes of each year group in the pilot inventory, changes in military compensation, civilian unemployment rates, civilian econometric models, and airline pilot hiring projections.

FINDING F: Undergraduate Flying Training. The GAO found that estimated requirements are compared to projected inventory, without the addition of new pilots, and the difference divided by five to determine the average number of new pilots that must be added each year to balance inventories with requirements by the end of the 5-year defense plan. The GAO observed that operational units are limited in the number of new pilots that can be absorbed in any year by force size, experience, and stability factors; as a result, the undergraduate flight training rates are modified to strike a balance between long-term requirements and near-term readiness.
Now on pp. 16-17. (p. 23/GAO Draft Report)

DoD Response: Concur. The emphasis is on readiness first.

FINDING G: Sustaining Inventory Balances Equal to Requirements. The GAO observed that the sustainment rate is the number of new pilots that must be trained annually to maintain an inventory equal to requirements. The GAO concluded that, if a requirements/inventory balance by major weapons system group is to be achieved and maintained, the sustainment and absorption (the number of new pilots that can be accepted) by system must be brought into a proper balance either by reducing sustainment, increasing
Now on p. 18. absorption, or a combination of the two. (p. 24/GAO Draft Report)

DoD Response: Concur. The Air Force pilot absorption capability is based on readiness objectives. As a consequence, undergraduate pilot training production has been lowered to match absorption capability. Accordingly, the training resources have been reduced and pilot requirements adjusted. However, Air Force new pilot absorption capability is less than what is needed to sustain an inventory equal to requirements. Therefore, the only alternative to growing an inventory without jeopardizing readiness is through increased pilot retention. The benefits from improved retention are more cost effective and beneficial than increasing absorption or decreasing readiness.

The DoD agrees with the GAO that the key factors influencing Air Force retention include increased job opportunities in the private sector, the widening pay comparability gap, threats to the retirement system, perceived erosion of benefits, the high cost of permanent change of station moves, and family considerations.

FINDING H: Reducing Sustainment. The GAO found that the Air Force has actively pursued ways to reduce requirements by:

- establishing manning standards for instructor pilots in the Tactical Air Command (TAC) Replacement training unit;

- contracting for academic/simulator instructors;

- substituting enlisted personnel to handle wing level flying safety officer duties;

- creating a new operations management career field for non-rated officers to handle operations and training functions that have traditionally been within the rated domain, such as command post, airfield management, and base operations; and

- implementing the officer to enlisted conversion requirements of the FY 1987 DoD Authorization Act.

The GAO further found that increased pilot retention is also a means of reducing the sustainment rate and, as a result, annual training cost. The GAO observed that pilot retention rates have changed dramatically over the years. For example, the average estimated length of service for Air Force pilots has ranged from a low of 8.7 years in September 1979 to a high of 15.6 years in September 1983, with a subsequent decline to 13.1 years by March 1986. The GAO found that the key factors influencing Air Force retention include increased job opportunities in the private sector, the widening pay comparability gap, threats to the retirement system and perceived erosion of benefits, the high cost of permanent change of stations moves, and working spouses. (pp. 3-4, pp. 24-29/GAO Draft Report)

Now on pp. 2, 18-21.

DoD Response: Concur. Pilot loss rates tend to reflect changes in economic factors. Although loss rates lag behind changes in economic factors by six to twelve months, because of the time required to react and apply for separation from active duty, it appears to have significant correlation, as shown below:

YEAR	PILOT CCR (CUMULATIVE CONT RATE) (%)	CIVILIAN UNEMPLOYMENT RATE (%)	MILITARY PAY RAISES (%)	AIRLINE PILOT HIRES
1976	51	7.7	4.8	547
1977	48	7.2	7.1	1,446
1978	39	6.2	5.5	4,113
1979	26	5.7	7.0	3,271
1980	42	6.7	11.7	851
1981	54	7.3	14.3	1,116
1982	68	8.9	4.0	1,027
1983	78	10.0	4.0*	3,004
1984	72	7.7	4.0*	5,465
1985	59	7.2	3.0*	7,622
1986	56	7.0	3.0*	6,444

* Payraise delayed from 1 Oct to following 1 Jan

One important fact needs to be emphasized about pilot retention rates. The average estimated length of service expressed in years is based on the retention trends over the preceeding twelve months. Therefore, if a 12-month retention rate were to remain constant, the average estimated length of service would equate to a specific number of years. Despite the varying rates from year to year, the

ten year average from FY 1977-FY 1986 is approximately thirteen years.

However, based on the programmed force structure and pilot production rates in the FY 1988 President's Budget, the future length of service per pilot over time would have to average 14.1 years to sustain an inventory equal to requirements.

FINDING I: Increasing Absorption Capability. The GAO found that the Air Force can increase the flow-through rate of new pilots in the operational units by:

- increasing the size of the force structure through the purchase of additional aircraft, the reinstatement of National Guard or Air Reserve units to the active forces, increases in the crew to aircraft ratios or the reduction in the number of new pilots;

- decreasing the experienced to inexperienced ratio (allowing more inexperienced pilots) and/or stability (allowing more new pilots each year); and

- decreasing the weapon system stability factor (the minimum time an individual is required to remain in a new input position prior to transfer to experienced only position). (pp. 30-33/GAO Draft Report)

Now on pp. 21-23.

DoD Response: Concur. Lowering either experience or stability levels below readiness standards, however, has a direct, adverse impact on combat readiness.

FINDING J: Air Force Actions Taken or Considered. The GAO commented that the rated management process has received Air Force management's scrutiny from its inception. The GAO recognized that at least four separate rated management study groups have addressed the issues of how to develop and sustain an inventory that equals validated requirements and maintains a stable, combat-ready force. According to the GAO, the Air Force has acknowledged that, within the constraints of the current and anticipated force structure, aircraft, and flying hours, the required inventory and a stable, combat-ready force could not be sustained. The GAO commented that:

- in the late 1970s, the Air Force prepared a rated prioritization plan to protect force and training requirement authorizations, since these represented primary mission capability as well as the inventory sustainment capability; and

- in the early 1980s, the increasing number of undergraduate flying training students highlighted the problem of how to absorb enough new pilots into the limited number of cockpits available to sustain the total pilot requirement. An ad hoc study group examined 16 proposed initiatives to increase the Air Force absorption capability centering around aircraft to crew ratio and active/Air Reserve force structure mix. Of the 16 initiatives,

only 2--Career Trainer and Project Season--were considered fiscally feasible and pursued. The Career Trainer initiative established career positions as professional training instructors within the Air Training Command. Project Season provided for the assignment of active duty flight school graduates to selected Air National Guard units to gain experience. (pp. 34-36/GAO Draft Report)

Now on pp. 23-24.

DoD Response: Concur. Numerous pilot absorption initiatives were implemented in the late 1970s. In addition to one of the ad hoc group's initiatives mentioned above, subsequent initiatives have been implemented to increase Air Force pilot absorption capability. New pilots have been absorbed in larger numbers in the Undergraduate Pilot Training program as instructor pilots. The Forward Air Controller, Operational Support Airlift, European Distribution Support Airlift, C-5, RC-135, E-3, B-1B, and KC-10 weapons systems are now accepting new pilots. In addition, pilot absorption has increased slightly as a by-product of minor, upward adjustments in crew to aircraft ratios. The Major Air Commands and the Air Staff are continually developing initiatives, reviewing programs and requirements, and exploring alternatives to increase absorption, balance inventories and requirements, improve pilot retention, and maintain readiness.

* * * * *

SUGGESTED ACTION

SUGGESTED ACTION: The GAO found that the Air Force has not undertaken an overall study to examine the pros and cons of offering pilots an alternative career path with a greater focus on the pilot as a specialist as opposed to the total officer. The GAO concluded that given the current and anticipated force structure, this alternative career path should be evaluated for its potential in helping meet pilot inventories within budget constraints. In assessing the advantages and disadvantages of such an alternative career path, the GAO suggested that such questions as the following need to be addressed:

- What types and how many requirements could be reduced by having an alternative career path for pilots?

- Would some pilots be more likely to stay in the Service longer if such an alternative were available? How much longer?

- What would be the effect of this alternative path on line unit military capability?

- With an alternative career path, will the reduced need for new pilots be equal to or greater than the operational units reduced capacity to accept new pilots? (pp. 4-5/GAO Draft Report)

Now on p. 3.

DoD Response: As a result of a recent Defense Resources Board review of pilot retention, the Air Force will evaluate the cost benefit of creating a 20 year career path that places a pilot in a flying billet for 80-100 percent of his/her career. The analysis will be completed by January 1988. It should be recognized that the Air Force continuously reviews and evaluates the rated management process for cost effective ways to improve the process and to alleviate pilot shortfalls and declining pilot retention. Several points pertinent to the suggested action have already been identified through the Air Force management process. As previously stated, 82 percent of the rated officer inventory currently serve in operational positions that require them to fly. Other issues include:

- Total force policy decisions on the active/reserve mix of aircraft have resulted in numerous aircraft transfers to the reserve forces. As a result, personnel managers must maximize use of the limited aircraft and flight hours to ensure that the pilot inventory has the proper numbers and experience levels to fill the mid-grade and senior level pilot leadership requirements. These limitations constrain the Air Force ability to institute a field of pilot career specialists, who remain in operational line units for most of their career.

- Aircraft and flying hours needed to train and maintain combat readiness are limited by fiscal constraints. Pilots serving in operational staff positions are already unable to maintain proficiency flying. Allocating these assets to a pilot career specialist field would further limit the flying experience needed for those pilots who will form the future leadership of Air Force operations.

- There are specific requirements for pilots to work in other areas. The Packard Commission recognized this need when it identified a requirement to have functional experts in the acquisition process. Approximately one-third of the Air Force pilots assigned to support duties are in acquisition, research and development, and engineering field. Other support areas include the precommissioning areas of the USAF Academy, ROTC, and Officer Training School. These pilots play a key role in motivating the cadets into Air Force flight programs. If these duties are spread among a smaller cadre of career pilots, the already limited flying opportunity and professional development would be further constrained.

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