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Report to the Chairman, Subcommittee on Manpower and Personnel, Committee on Armed Services, U. S. Senate

June 1988

AIR FORCE PILOTS

U.S. Air Force Requirements, Inventory, and Related Data

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The Honorable John Glenn
Chairman, Subcommittee on Manpower
and Personnel
Committee on Armed Services
United States Senate

Dear Mr. Chairman:

As requested in your December 15, 1987, letter and in subsequent meetings with your Office, we are providing Air Force aviator requirements and inventory data. These data are presented both in total and, to the extent possible, by major weapon system groups, rank, and years of service. They are provided for use in evaluating proposals that may be submitted to enhance compensation to aviators.

The data are summarized below and the details are in appendixes I through VII.

Pilot Requirements and Inventories

As of December 31, 1987, the Air Force had authorized 23,300 pilot positions and had assigned 23,358 pilots, an overage of 58 pilots. Because of changing force structures, funding constraints, budget review decisions, and retention rates, the Air Force makes frequent and sometimes significant changes to requirements and inventory projections. As a result, predictions of future pilot overages/shortages in total or by major weapon systems at different dates vary significantly. However, September 1987 Air Force projections of inventories compared to requirements in the 1988 presidential budget show shortages of pilots beginning in fiscal year 1988 and increasing to about 1,700 pilots in fiscal year 1992. Updated estimates of requirements and inventories show a pilot shortage of about 2,000 in fiscal year 1992.

Air Force data show that pilot requirements at the wing level are usually filled. When shortages exist, the majority of unfilled pilot requirements are likely to be in staff positions, professional military education positions, and other officer positions not requiring pilots.

Pilot Retention Rates and Years of Service Groups

The Air Force cumulative continuation rate[1] reached 78 percent in fiscal year 1983 but has since declined to about 48 percent. The rate for trainer, tanker, and strategic airlift major weapon systems groups declined even lower to 42, 39, and 31 percent, respectively. From fiscal years 1983 through 1993, pilots with 1-5 years of service will increase from 22 percent of the total pilot inventory to a projected 31 percent, whereas pilots with 12-19 years of service will decrease from 38 percent to a projected 26 percent. According to these projections, pilot experience levels, measured by years in service, will decline.

Officer Inventory by Rank

Pilots account for a higher percentage of Air Force officers at the higher ranks than their percentage of total officers. In fiscal year 1987, pilots, including colonels and generals, accounted for 25,654, or 24 percent, of the Air Force's 107,338 officers. At the ranks of major, lieutenant colonel, colonel, and general, the pilots were about 29, 34, 31, and 68 percent of the officers, respectively. At the lower ranks of captain and lieutenant, pilots accounted for a lesser proportion, 22 and 16 percent, respectively, of the officers.

Compensation

Military pay is a complex system of over 40 different pays and allowances plus supplemental benefits. The current compensation for a pilot with the rank of captain, major, and lieutenant colonel is $43,749, $51,282, and $61,646, respectively. These amounts include the basic compensation[2] and aviation career incentive pay. Commercial airline pilot salaries for 2nd-year military hires reportedly range from about $25,000 to $58,000. Maximum airline pilot salaries range from about $87,000 to $162,000.

In October 1981, aviation career incentive pay rates were increased to improve retention and to reduce what was perceived as increasingly serious shortages of qualified personnel. The increase was targeted particularly at aviators with more than 6 years of service to provide the greatest incentive during the flight intensive, retention critical, mid-career years. However, since fiscal year 1983, the loss rates for these

[1]This rate is the percentage of officers entering their 6th year of service who would complete their 11th year if current retention rates continue. It is computed using a 12-month reporting period.

[2]Basic compensation includes basic pay, the value of living quarters or basic allowance for quarters, the value of meals furnished or basic allowance for subsistence, and the amount of additional federal tax if quarters and meals were taxed.

aviators have about tripled, with the highest loss rates occurring in the 7th and 8th years of service.

Officer Retention Survey

In December 1986 and January 1987, the Air Force conducted an officer retention survey directed specifically at active duty pilots. In the survey, pilots did not cite dissatisfaction with pay as a primary reason for leaving the Air Force. Pilots indicated dissatisfaction with long-duty hours, the quantity of nonflying duties, and a lack of "say" in specific job assignments and location. The survey showed that these factors limit overall job satisfaction and are considered more important than airline appeal when a pilot considers whether to leave the Air Force. Pilots expressed a strong desire to remain in the cockpit, and 60 percent indicated that a "fly-only" career option would have a positive effect on making the Air Force a career.

Pilot Survey on Aviation Bonuses

In January 1988 the Air Force conducted a telephone survey of 1,600 pilots in their 5th through 11th year of service to examine the effect bonus contracts would have on pilot retention. The Air Force concluded a bonus of $4,000 to $6,000 per year would improve retention; however, a bonus of $12,000 per year would be better for retaining pilots with 5 through 7 years of service. In summary, the Air Force concluded that bonuses would result in significant improvement in pilot retention.

The results of this survey could be construed as being inconsistent with the officer retention survey because that survey did not disclose pay as a primary reason for pilots leaving the Air Force. We do not know the reasons for the differences in survey results. Possible reasons could include a change in attitude over the year, a difference in survey methodology, or a more focused survey scope.

Agency Comments

The Department of Defense concurred with the report. (See app. VIII.) It provided updated data and explanatory and other technical comments that we have included in the report as appropriate.

Objective, Scope, and Methodology

Our objective was to obtain aviator requirements and inventory data in sufficient detail to permit analysis by major weapon system groups, rank, and years of service. Our work was done during January and February 1988 in accordance with generally accepted government auditing standards.

We obtained data from Air Force Headquarters, Washington, D.C., and the Military Personnel Center, Randolph Air Force Base, Texas. The information was obtained through interviews with Air Force officials and from management documents. We did not verify the accuracy of this information.

Copies of this report are being sent to the Chairmen, Subcommittees on Defense, House and Senate Committees on Appropriations; the Chairmen, House and Senate 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,

for Bill W. Thurman

Frank C. Conahan
Assistant Comptroller General

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Abbreviations

AFIT	Air Force Institute of Technology
PME	professional military education
RPI	rated position identifier
UPT	undergraduate pilot training

Introduction

The Air Force approved in 1975 what has become known as the rated management process. 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 funded requirements, maintains a credible combat posture, and minimizes costs.

The process is based on identifying requirements, inventories, and readiness objectives for the major weapon system groups—fighters, bombers, tankers, trainers, strategic airlift, tactical airlift, helicopters, and mission support. The mission support group is being phased out.

The basic concept of the process is simple.

- Requirements and inventories are defined (without considering new inputs 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 determined.
- 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' abilities to absorb inexperienced pilots.

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.

A rated position identifier (RPI) is a single digit numerical code that identifies the type and level of flying duty or responsibility associated with a rated position. These codes are summarized in table I.1.

Table I.1: Rated Position Indicator Codes

RPI code	Aeronautical rating	Type duty	Fly/nonfly	Job level
1	Pilot	Aircrew	Fly	Wing and below
2	NAV[a]	Aircrew	Fly	Wing and below
3	Pilot/NAV[a]	Staff	Nonfly	Wing and below
4	Pilot/NAV[a]	Staff	Nonfly	Above wing
6	Pilot/NAV[a]	Staff	Fly	Wing and below
8	Pilot/NAV[a]	Staff	Fly	Above wing

[a]Abbreviation for navigator

The basis for determining pilot requirements in Air Force categories is as follows.

- Force structure: Requirements are computed by applying crew ratio and crew complement factors to the number of authorized aircraft. Includes RPI 1 and 2 positions plus positions for flying squadron commanders and operations officers.
- Training: Requirements for this category, which includes instructor pilots, are 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. Includes RPI 1 and 2 positions plus RPI 6 positions for flying training squadron commanders and operations officers.
- Staff/supervision: Requirements for this category are based on overhead and work load factors coupled with the need for rated experience. Includes RPI 3, 4, 6, and 8 positions.
- Advanced students: This category includes students taking all formal advanced flight training courses and 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. Includes RPI 1 and 2 positions.
- Air Force Institute of Technology (AFIT), professional military education (PME), and supplement: These three categories differ from the preceding ones because positions in these categories, although authorized, cannot be tracked to a rated manpower authorization. These allowances provide for rated officers to participate in AFIT and PME. The supplement provides positions for pilots to broaden their careers by obtaining operational experience in fields such as acquisition, and research and development. The supplement also provides a pilot contingency for times of conflict. The positions in the supplement do not require pilots. The Air

Force has recognized that some shortages of pilots could be met by not filling all authorized positions in the supplement.

- Transient: This category provides allowances for travel and leave based on historical data and the projected size of the rated officer requirement.

Most pilot requirements can be clearly identified with a major weapon system group. Other nonspecific requirements, however, such as the supplement, transient, advanced students, AFIT, and PME requirements, are distributed on a proportional basis to the major weapon systems.

Inventories

The Air Force uses a series of computer models to project pilot inventories. 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 retention actions and the number of new pilots needed.

Pilot 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 by applying loss rates using both internal and external retention factors (for example, the economy, airline hiring, and entitlement programs) to estimate all types of losses to the rated force (separations, retirements, deaths, groundings, and promotions to colonel).

Pilot Requirements and Inventories

Within the Air Force, the rated management process focuses on establishing a match between pilot requirements and inventories. Table II.1 shows that as of December 31, 1987, 23,300 pilot positions were authorized and 23,358 pilots were assigned, an overage of 58 pilots.

Table II.1: Authorized and Assigned Pilots as of December 31, 1987

Category	Authorized	Assigned	Percent of authorized
Force	9,746	10,477	108
Training	4,007	3,585	89
Staff—wing and below			
RPI 3	722	713	99
RPI 6	1,913	1,783	93
Wing total	**16,388**	**16,558**	**101**
Staff—above wing			
RPI 4	1,865	1,803	97
RPI 8	823	757	92
Wing and staff total	**19,076**	**19,118**	**100**
AFIT/PME	462	476	103
Supplement	1,895	2,122	112
Transient/Advanced students	1,867	1,642	88
Total	**23,300**	**23,358**	**100**

An Air Force priority is to assure an adequate number of pilots at the wing level (combining the force, training, RPI 3 and RPI 6 staff shows the number of wing-level pilots). Table II.2 shows, by major weapon system groups, that most authorizations were met at wing level. The primary exception was instructor positions in training units. Air Force officials said that a majority of positions require specific major weapon system backgrounds. Some positions are prorated, that is, the positions require a pilot from one of a number of similar major weapon systems. Other authorizations in trainer, mission support, and other non-specific requirements may be filled by pilots from any major weapon system group based on available inventory. They also point out that some reported shortages or overages may be due to a lag in the paperwork. A detailed analysis of the statistical data would be necessary to identify specific pilot shortages and overages.

Table II.2: Pilots at Wing Level by Weapon System Groups

Weapon system	Authorized	Assigned	Percent of authorized
Fighter	5,350	5,382	101
Trainer	2,314	2,014	87
Bomber	1,296	1,271	98
Tanker	2,276	2,494	110
Strategic airlift	2,171	2,209	102
Tactical airlift	1,438	1,467	102
Helicopter	460	589	128
Mission support	47	49	104
Other	1,036	1,083	105
Total	**16,388**	**16,558**	**101**

At the end of fiscal year 1987, the regular Air Force active aircraft inventory was about 7,200. With total pilot requirements of about 23,300, the ratio of total pilots to aircraft was over 3 to 1, and the ratio of pilots at wing level to aircraft was over 2 to 1.

Accurate projections of pilot overages/shortages are difficult because of frequent changes in requirements and inventories. Such changes result from changes in force structure, budget review decisions, funding constraints, and pilot retention rates. To illustrate, table II.3 shows that the fiscal year 1988 presidential budget projections of pilot requirements and inventories for each fiscal year starting with 1988 through 1991 are lower than fiscal year 1987 presidential budget projections. In addition, an update of the fiscal year 1988 presidential budget projections of requirements shows additional decreases.

Table II.3: Budget Data Comparisons of Requirements and Inventories

Presidential budget	Fiscal years 1988	1989	1990	1991
Pilot Requirements				
Fiscal year 1987	24,256	24,427	24,491	24,506
Fiscal year 1988	23,001	22,970	22,839	22,740
Decrease	**1,255**	**1,457**	**1,652**	**1,766**
Fiscal year 1988	23,001	22,970	22,839	22,740
Fiscal year 1989[a]	22,532	22,643	22,551	22,431
Decrease	**469**	**327**	**288**	**309**
Total decrease	**1,724**	**1,784**	**1,940**	**2,075**
Pilot Inventories				
Fiscal year 1987	23,964	23,786	23,585	23,400
Fiscal year 1988	23,601	23,252	22,938	22,538
Decrease	**363**	**534**	**647**	**862**

[a]This is an update of the fiscal year 1988 presidential budget requirements because fiscal year 1989 presidential budget estimates of requirements and inventories were not computed due to the 2-year budget cycle.

The latest official pilot requirements available in February 1988 were those in the fiscal year 1988 presidential budget. Table II.4 compares these requirements with Air Force inventory projections as of September 1987. According to these data, estimated pilot shortages range from 72 in fiscal year 1988 to 1,669 in fiscal year 1992.

Table II.4: Pilot Requirements and Inventory Projections

	Fiscal years				
Requirement	**1988**	**1989**	**1990**	**1991**	**1992**
Unit strength:					
Force	9,305	9,376	9,282	9,224	9,191
Training	3,899	3,876	3,866	3,837	3,838
Staff/supervision	5,487	5,466	5,438	5,438	5,432
Subtotal	**18,691**	**18,718**	**18,586**	**18,499**	**18,461**
Individuals:					
Advanced students	1,495	1,437	1,437	1,421	1,421
AFIT	185	185	185	185	185
PME	277	277	277	277	277
Rated supplement	1,895	1,895	1,896	1,900	1,908
Transient	458	458	458	458	458
Subtotal	**4,310**	**4,252**	**4,253**	**4,241**	**4,249**
Total	**23,001**	**22,970**	**22,839**	**22,740**	**22,710**
Inventories	22,929	22,468	22,019	21,419	21,041
Shortage	72	502	820	1,321	1,669

In March 1988, Air Force officials said that pilot retention was below projections and that inventories were projected to be less than those shown in table II.4. Updated estimates of requirements and inventories show a shortage of about 2,000 pilots in fiscal year 1992.

Pilot Retention Rates and Years of Service Groups

One key measure of pilot retention used by the Air Force is the cumulative continuation rate. This rate is the percentage of officers entering their 6th year of service who would complete their 11th year if current retention rates continued. It is computed using a 12-month reporting period. Table III.1 shows that the overall Air Force pilot cumulative continuation rate was about 78 percent in September 1983 but declined to about 48 percent in December 1987. Rates for the trainer, tanker, and strategic airlift major weapon system groups have declined to about 42, 39, and 31 percent, respectively. If the current retention rate continues, less than one-half of all the Air Force pilots entering their 6th year of service would complete their 11th year of service.

Table III.1: Cumulative Continuation Rates by Major Weapon Systems[a]

Figures in percent

Weapon system	1983	1984	1985	1986	1987	Updated 1987
Fighter	80.2	79.1	68.2	63.3	55.1	54.0
Trainer	64.9	45.7	35.8	66.0	40.0	41.9
Bomber	76.1	78.7	71.9	51.2	58.5	57.1
Tanker	75.6	74.0	55.5	50.4	36.3	38.7
Strategic airlift	73.2	63.2	41.4	40.9	31.5	30.9
Tactical airlift	82.4	71.1	53.2	51.9	46.4	47.7
Helicopter	82.1	67.8	80.6	81.6	69.4	74.9
Mission support	75.9	71.9	58.6	55.6	47.9	48.1
Overall	**77.6**	**71.9**	**58.6**	**55.6**	**47.9**	**48.1**

[a]All data are as of September of each year, except updated 1987, which is as of December.

The declining continuation rate is a result of increasing loss rates. Table III.2, comparing fiscal years 1983 and 1987 pilot loss rates, shows about a threefold increase in loss rates for each year of service from the 7th year through the 12th year.

Table III.2: Comparison of Pilot Loss Rates for Fiscal Years 1983 and 1987

Figures in percent

Weapon system	Total years of Air Force career service							
	5	6	7	8	9	10	11	12
	Fiscal Year 1983							
Fighter	1.0	3.9	4.4	3.7	3.2	3.1	3.3	2.5
Trainer	0.4	13.4	11.8	5.6	2.9	4.3	0	10.5
Bomber	2.9	10.8	6.3	1.8	1.6	2.8	2.9	2.2
Tanker	0	6.7	7.6	6.0	3.5	0.4	2.9	3.2
Strategic airlift	0	5.6	11.1	4.9	2.3	2.2	3.8	0.6
Tactical airlift	0	4.1	3.4	2.1	4.7	2.0	2.9	1.4
Helicopter	0	1.8	1.9	2.0	2.4	5.7	5.6	4.5
Mission support	0	4.0	6.9	7.4	8.3	0	0	3.7
Overall	**0.6**	**5.9**	**6.2**	**3.9**	**3.2**	**2.3**	**3.1**	**2.6**
	Fiscal Year 1987							
Fighter	0.9	0.4	11.5	11.4	11.0	10.3	11.6	5.8
Trainer	1.0	1.8	34.0	33.0	10.7	9.5	10.3	6.7
Bomber	1.8	2.5	18.2	14.6	6.6	2.1	6.2	8.6
Tanker	1.3	1.2	35.0	15.2	17.9	8.5	11.1	11.2
Strategic airlift	2.5	5.0	30.1	25.7	15.8	9.7	15.9	12.5
Tactical airlift	1.8	2.7	22.0	17.0	9.3	7.4	12.2	9.4
Helicopter	2.6	2.9	9.1	3.7	4.5	2.3	12.5	11.4
Mission support	3.8	0	16.7	16.7	0	0	0	0
Overall	**1.5**	**1.9**	**20.3**	**14.7**	**11.7**	**8.1**	**11.4**	**8.5**

In fiscal year 1987, the 7th and 8th years of service—the years that the initial service commitment for pilots have been completed—showed the highest loss rates. Table III.3 shows that since 1979, the Air Force, to counter these trends, has increased initial service commitments after undergraduate pilot training (UPT) from 6 years to 8 years. However, the effect of these changes on pilot retention will be after fiscal year 1995.

Table III.3: Active Duty Service Commitments for UPT Entrants

Date of entrance	Service commitment	Earliest end of commitment
June 15, 1979	UPT + 6 years	Fiscal year 1986
June 15, 1987	UPT + 7 years	Fiscal year 1995
June 15, 1988	UPT + 8 years	Fiscal year 1997

Pilot retention rates declined during fiscal years 1983 through 1987. At the same time, total pilot inventory increased by 1,591. Table III.4 shows that during this period the 1-5 year group and the 20-30 year

group increased both numerically and as a percentage of total pilot inventory, whereas the other groups declined. The increase in the 1-5 year group results from an increase in the number of new pilots. Loss rates remain low because these pilots are still within the initial service commitment period. Those in the middle years groups (6-11 and 12-19 years) have completed their initial service commitment but have career options open. The opportunities offered by airlines, possibly in conjunction with a reserve or Air National Guard career, could be a major consideration to pilots in these groups.

Pilot inventories for fiscal years 1987 through 1993 are projected to decline by 3,546 pilots. During this period, the projected number of pilots in each group, except for the 6-11 year group, decreases. The projected increase in the 6-11 year group is a result of previous increases in the 1-5 year group. Although the 1-5 and 20-30 year groups are projected to decline numerically during this period, they continue to increase as a percentage of the total pilot inventory because total inventory drops significantly.

Table III.4: Comparison of Numbers and Percents of Selected Pilot Inventories by Years of Service Groups

	Total Number of Pilots				
	Years of service				
Fiscal year	**1-5**	**6-11**	**12-19**	**20-30**	**Total**
1983	5,068	7,104	8,637	1,813	22,622
1987	6,702	6,701	8,495	2,315	24,213
Difference	**+1,634**	**−403**	**−142**	**+502**	**+1,591**
1987	6,702	6,701	8,495	2,315	24,213
1993	6,301	6,804	5,340	2,222	20,667
Difference	**−401**	**+103**	**−3,155**	**−93**	**−3,546**

	Percent of Total Pilot Inventories					
	Years of service					
Fiscal year	**1-5**	**6-11**	**Total 1-11**	**12-19**	**20-30**	**Total 12-30**
1983	22.4	31.4	53.8	38.2	8.0	46.2
1987	27.7	27.7	55.4	35.1	9.6	44.7
Difference	**+5.3**	**−3.7**	**+1.6**	**−3.1**	**+1.6**	**−1.5**
1987	27.7	27.7	55.4	35.1	9.6	44.7
1993	30.5	32.9	63.4	25.8	10.8	36.6
Difference	**+2.8**	**+5.2**	**+8.0**	**−9.3**	**+1.2**	**−8.1**

Data for fiscal years 1983 and 1987 are actual; data for fiscal year 1993 are based on a September 1987 projection.

Table III.5 presents detailed data for pilot inventories for 1983 through 1993 and shows the most significant changes are projected in the 1-5 and 12-19 year groups. The 1-5 year group increases from 22 percent of the total pilot inventory to 31 percent, whereas the 12-19 year group

decreases in relation to the total pilot inventory from 38 percent in fiscal year 1983 to 26 percent in fiscal year 1993. Combining the data for the 1-5 and 6-11 year groups shows that pilots in these year groups are projected to account for a larger portion of the total inventory, increasing from 54 percent in fiscal year 1983 to 63 percent in fiscal year 1993. Of course, the converse is true when the data are combined for the 12-19 and 20-30 year groups—the percent of total inventory declines from 46 percent to 37 percent. Projected pilot experience levels, measured by years in service, continue to decline.

Table III.5: Total Pilot Inventories by Years of Service Groups as of September 1987

Number of Pilots					
	Years of service				
Fiscal year	1-5	6-11	12-19	20-30	Total
1983	5,068	7,104	8,637	1,813	22,622
1984	5,852	6,972	8,878	1,884	23,586
1985	6,330	6,799	9,078	1,740	23,947
1986	6,688	6,524	8,940	2,021	24,173
1987	6,702	6,701	8,495	2,315	24,213
1988	5,968	7,203	7,292	2,466	22,929
1989	5,830	7,505	6,640	2,493	22,468
1990	5,840	7,558	6,118	2,503	22,019
1991	6,236	7,118	5,761	2,304	21,419
1992	6,317	6,951	5,523	2,250	21,041
1993	6,301	6,804	5,340	2,222	20,667

Percent of Pilots						
	Years of service					
Fiscal year	1-5	6-11	Total 1-11	12-19	20-30	Total 12-30
1983	22.4	31.4	53.8	38.2	8.0	46.2
1984	24.8	29.6	54.4	37.6	8.0	45.6
1985	26.4	28.4	54.8	37.9	7.3	45.2
1986	27.7	27.0	54.7	37.0	8.4	45.4
1987	27.7	27.7	55.4	35.1	9.6	44.7
1988	26.0	31.4	57.4	31.8	10.8	42.6
1989	25.9	33.4	59.3	29.6	11.1	40.7
1990	26.5	34.3	60.8	27.8	11.4	39.2
1991	29.1	33.2	62.3	26.9	10.8	37.7
1992	30.0	33.0	63.0	26.2	10.7	36.9
1993	30.5	32.9	63.4	25.8	10.8	36.6

Data for fiscal years 1983 through 1987 are actual; data for fiscal years 1988 through 1993 are based on a September 1987 projection. Totals may not add due to rounding.

Officer Inventory by Rank

Pilots accounted for 25,654, or about 24 percent, of the Air Force's 107,338 officers in fiscal year 1987. Pilots accounted for a higher percentage of officer positions at the higher ranks than their percentage of total officers. Table IV.1 shows that about 68 percent of the generals, 31 percent of the colonels, 34 percent of the lieutenant colonels, and 29 percent of the majors were pilots. At the lower ranks of captain and lieutenant, 22 and 16 percent, respectively, were pilots. The Department of Defense commented that the higher ranks are a result of accession and retention policies that were in effect more than 20 years ago.

Table IV.1: Fiscal Year 1987 Officer Inventory by Rank

	Number of Officers					
	With aeronautical rating					
Rank	Pilots	Navigators	Surgeons	Total	Nonrated force	Total
General	226	15	0	241	91	332
Colonel	1,765	435	118	2,318	3,299	5,617
Lt. Colonel	4,264	1,227	83	5,574	6,945	12,519
Major	5,857	2,974	142	8,973	10,952	19,925
Captain	9,250	4,036	228	13,514	29,175	42,689
Lieutenant	4,292	1,949	0	6,241	20,015	26,256
Total	**25,654**	**10,636**	**571**	**36,861**	**70,477**	**107,338**

	Percent of Officers				
	With aeronautical rating				
Rank	Pilots	Navigators	Surgeons	Total	Nonrated force
General	68	5	0	73	27
Colonel	31	8	2	41	59
Lt. Colonel	34	10	1	45	55
Major	29	15	1	45	55
Captain	22	9	1	32	68
Lieutenant	16	7	0	24	76
All ranks	**24**	**10**	**1**	**34**	**66**

Totals may not add due to rounding

Compensation

Military compensation is a complex system of over 40 different pays and allowances, plus a multitude of supplemental benefits. Table V.1 shows the military compensation as of January 1988 for a captain, major, and lieutenant colonel, after adding aviation career incentive pay, is $43,749, $51,282, and $61,646, respectively.

Table V.1: Military Compensation[a]

	Captain	Major	Lt. Colonel
Regular military compensation[b]	$38,949	$46,482	$57,206
Special and incentive pay[c]	4,800	4,800	4,440
Total direct compensation	**$43,749**	**$51,282**	**$61,646**

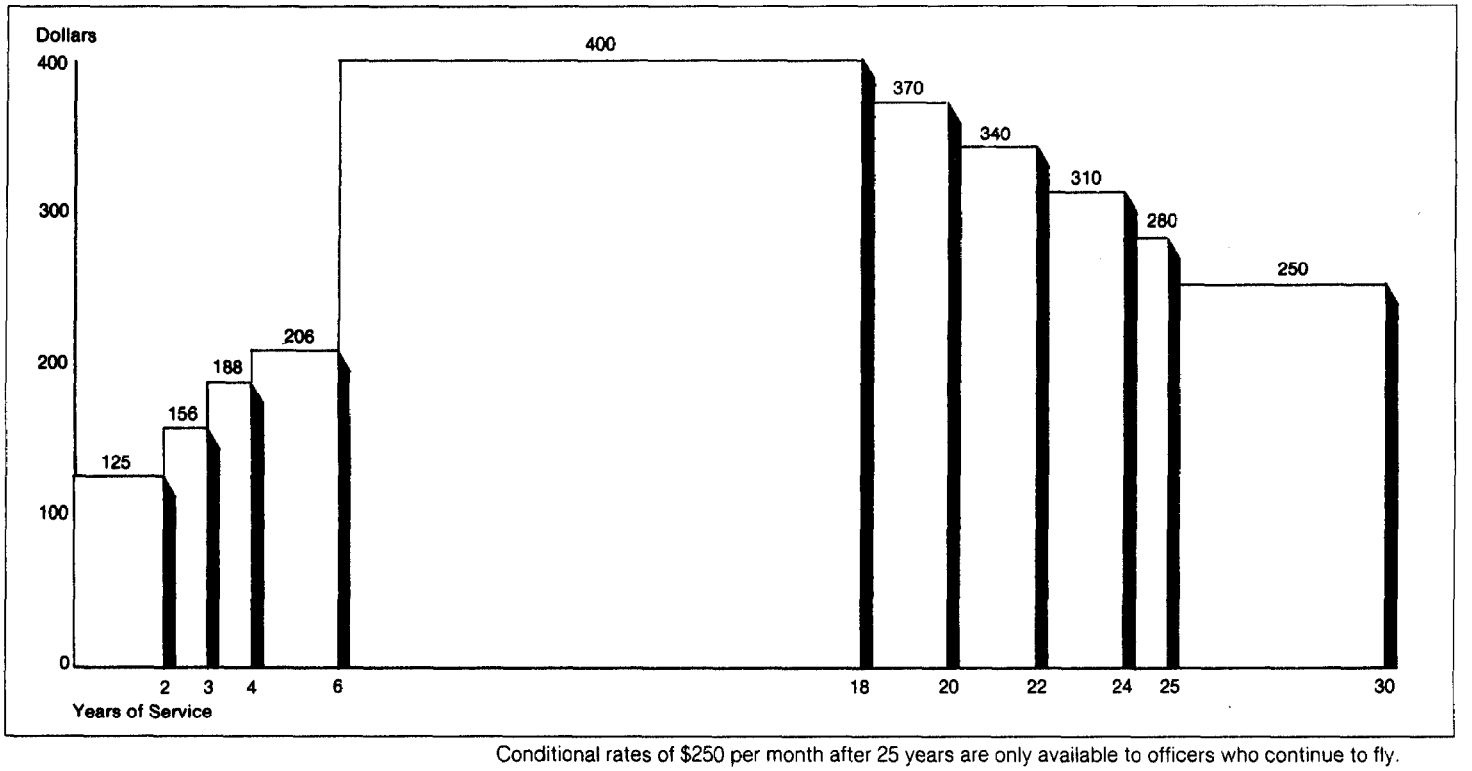
[a]These rates, extracted from selected military compensation table as of January 1988, are for married officers with 8, 12, and 18 years of service, respectively.

[b]This is the basic compensation paid to all military members, and it includes basic pay, the value of living quarters or basic allowance for quarters, the value of meals furnished or basic allowance for subsistence, and the amount of additional federal tax if quarters and meals were taxed.

[c]This is for those in certain skills and assignments. The only pay shown above is flight incentive pay.

The Aviation Career Incentive Act of 1974 authorized additional pay to encourage pilots to remain on active duty for a career. An officer must have at least 6 years of flying experience by the 12th year of rated service 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. The monthly amounts of such pay, by years of service, are shown in figure V.1.

Figure V.1: Monthly Amounts of Aviation Career Incentive Pay



Conditional rates of $250 per month after 25 years are only available to officers who continue to fly.

Aviation career incentive pay rates were last increased on October 1, 1981, for aviators with more than 6 years of aviation service. The purpose was to improve retention and reduce what was perceived as an increasingly serious shortage of qualified personnel. The increase was targeted particularly at officers with more than 6 years of aviation service to provide the greatest incentive during the flight intensive, retention critical, mid-career years. As mentioned earlier, a comparison of fiscal years 1983 and 1987 pilot loss rates shows about a threefold increase with the highest loss rates reflected in the 7th and 8th years of service.

Table V.2 shows that over a 20-year career a pilot can earn up to $78,552 in incentive pay and as much as $97,512 over 25 years.

Table V.2: Cumulative Amount of Aviation Career Incentive Pay

Service years	Monthly rate	Yearly rate	Span in years	Total pay
2 or less	$125	$1,500	2	$3,000
Over 2	156	1,872	1	1,872
Over 3	188	2,256	1	2,256
Over 4	206	2,472	2	4,944
Over 6	400	4,800	12	57,600
Over 18	370	4,440	2	8,880
Total for 20 years			**20**	**78,552**
Over 20	340	4,080	2	8,160
Over 22	310	3,720	2	7,440
Over 24	280	3,360	1	3,360
Total for 25 years			**25**	**$97,512**

The Air Force, recognizing competition from the airlines, obtained data on airline salaries for an October 1987 conference. Table V.3 shows that, for selected airlines, the 2nd-year salary of military hires ranged from $25,200 to $57,540, and the maximum salary ranged from $86,900 to $162,000.

Table V.3: Airline Compensation for Military Pilot Hires

2nd-year salary	Maximum salary	Airline
$57,540	$162,000	Northwest
48,000	160,800	Federal Express
40,800	140,000	Piedmont
38,700	145,248	American
32,760	146,782	US Air
32,160	171,000	Delta
27,096	121,548	Eastern
26,400	161,976	United
25,200	86,900	TWA
30,966	63,197	Average for national airlines
27,206	54,751	Average for turbojet airlines
20,682	33,838	Average for regional airlines

Officer Retention Survey

In December 1986 and January 1987, the Air Force's Military Personnel Center, Randolph Air Force Base, Texas, conducted an officer retention survey directed specifically at active duty pilots. The survey involved sending questionnaires to 6,612 pilots. Responses were received from 4,230 pilots. (See table VI.1.) With the distribution of the responses, the results are considered to be representative of Air Force pilots as a group and by the different year groups (less than 5, 5-7, 8-11, 12 or more).

Table VI.1: Distribution of Survey Responses

Group	Organization		Number of responses
Less than 5 years			371
5-7 years	Air Training Command	293	
	Military Airlift Command	332	
	Strategic Air Command	257	
	Tactical Air Command	346	
	U.S. Air Forces in Europe	167	
	Pacific Air Forces	80	
	Other	73	1,548
8-11 years	Air Training Command	162	
	Military Airlift Command	319	
	Strategic Air Command	305	
	Tactical Air Command	309	
	U.S. Air Forces in Europe	131	
	Pacific Air Forces	90	
	Other	316	1,632
12 or more years			679
Total			**4,230**

Table VI.2 shows that almost all pilots with 12 or more years of service had decided on the Air Force as a career.

Table VI.2: Career Intentions by Year Group

Figures in percent

	Less than 5	5-7	8-11	12 or more	Overall
Noncareer	31	40	15	3	19
Undecided	16	8	4	1	7
Career	53	52	81	96	74

Those pilots not intending to make the service a career generally leave by the end of their 7th year, with a smaller group of noncareerists leaving sometime during the 8-11 year period.

Pilots were asked to assess their satisfaction or dissatisfaction with a number of job factors. The factors that they selected as "most satisfying" were

- quality of co-workers,
- job challenge,
- job responsibility,
- job security, and
- work group cohesiveness.

Those selected as "least satisfying" were

- amount of nonflying additional duties,
- length of average duty day,
- "say" in base of assignment,
- "say" in specific job assignment, and
- work schedule.

Other job factors considered were

- promotion opportunity,
- quality of leadership/supervision at the unit level,
- prestige,
- physical working conditions,
- health care benefits (medical and dental),
- institutional benefits (BX and commissary),
- pay and allowances,
- retirement program,
- quality of leadership/supervision above the unit level,
- amount of flying,
- major weapon system,
- amount of feedback/recognition,
- decision making opportunities,
- opportunity to exercise creativity,
- management opportunities,
- geographic stability,
- opportunity for personal growth and development,
- opportunity for independence, and
- overall job satisfaction.

A summary of the job factors identified by the year groups as most important and their satisfaction rating for those factors is given in table VI.3.

Table VI.3: Ranking and Rating of Top Five Job Factors by Year Group

Job factor	Less than 5	5-7	8-11	12 or more
	Rankings by year group			
Overall job satisfaction	1	1	1	1
Amount of flying	2	2	•	•
Say in job assignment	3	3	5	•
Pay and allowances	4	•	3[a]	5
Quality of unit leadership	5	4	3[a]	3
Job challenge	•	5	•	•
Retirement program	•	•	2	2
Job responsibility	•	•	•	4
	Average ratings[b] by year group			
Overall job satisfaction	1.00	.43	.81	1.07
Amount of flying	.06	−.10	•	•
Say in job assignment	−.49	−.63	−.39	•
Pay and allowances	.70	•	.23	.35
Quality of unit leadership	.67	.29	.39	.44
Job challenge	•	1.46	•	•
Retirement program	•	•	.80	.90
Job responsibility	•	•	•	1.59

[a]Factors tied as 3rd most important.

[b]Rating scale
+3 Very satisfied
+2 Satisfied
+1 Somewhat satisfied
0 Neither satisfied nor dissatisfied
-1 Somewhat dissatisfied
-2 Dissatisfied
-3 Very dissatisfied

Dissatisfaction with the Air Force was perceived as being more influential in pilots' decisions to separate and join the airlines than was airline appeal. Regarding average duty day, 81 percent of the pilots said it was 10 hours or more, and 67 percent indicated they spent 50 percent or more of it in the performance of nonflying additional duties. Survey data also suggest a relationship between the spouse/family and the member's career decision.

According to 74 percent of the pilots, aviation career incentive pay was not a key incentive for entering pilot training. Also, 70 percent felt that the incentive pay was not sufficient compensation for "hardships" associated with flying. However, pay and allowances were not identified as a key source of dissatisfaction among pilots.

In response to both the survey's specific questions and request for additional written responses, pilots expressed a strong desire to remain in flying positions. According to 60 percent of the pilots, a "fly-only" career option would have a positive effect on their current intentions toward making the Air Force a career. Pilots supported the fly-only career option even if it might possibly involve restrictions in promotion opportunity.

Pilot Survey on Aviation Bonuses

In January 1988, the Air Force, assisted by a contractor, conducted a telephone survey of 1,600 pilots in their 5th through 11th year of service. Of the 1,600 pilots interviewed, 497 said they intended to make the Air Force a career, 414 were undecided, 674 said they did not plan to make the Air Force a career, and 15 were not classified in any of these categories. The survey examined the effects of different bonus amounts and commitment lengths on pilot retention. The primary bonus program examined was an installment bonus—a pilot would receive an annual installment at the beginning of each contract year. The contracts could range from 1 to 6 years with a bonus installment amount of either $12,000 per year or $4,000 to $6,000 per year.

Based on survey results, the Air Force concluded the following.

- A bonus of $4,000 to $6,000 per year would be effective in improving pilot retention; however, a bonus of $12,000 a year would be better for retaining pilots with 5 through 7 years of service.
- Providing bonuses based on contract commitments of 1 to 6 years was slightly more effective than restricting bonuses to contract commitments of 4, 5, or 6 years.
- Negative morale and retention effects must be anticipated if a bonus is not paid to major portions of the pilot force.
- No clear preference existed for any of the three proposals for targeting the bonuses (i.e., specific weapons systems, pilots with between 7 and 11 years of service who receive 50 percent of the bonus previously mentioned, or less desirable or hard-to-fill assignments for all weapons systems). Also, the efficiency of a targeted bonus decreases at an increasing rate as fewer pilots are targeted.
- The pilot retention rate will decrease to 33 percent without bonuses. The Air Force cautions that this decrease is most likely overstated because people tend to overstate their willingness to leave compared with actual retention behavior. The Air Force estimates an increase to 54 percent with a bonus of $4,000 to $6,000 per year and to 65 percent with a bonus of $12,000 per year.

Of the 1,088 pilots in the career undecided and noncareer categories, 197 declined any offered form of a bonus contract. Table VII.1 shows their responses to the question "What changes other than compensation would keep you in the Air Force?".

Table VII.1: Noncompensation Changes That Would Improve Retention

Figures in percent

Suggestions/comments	Career undecided[a]	Noncareer[a]
Money increases are not important	50	36
Let pilots fly; no additional duties	37	31
Provide more flexibility with assignments	9	26
Civilian/airline jobs are better; Air Force cannot compete	13	36
More job satisfaction	31	15
Money offered is insufficient	13	17
Better promotion opportunities	16	12
Family issues	3	13
Improve quality of life	3	12

[a]Multiple comments by individual pilots recorded.

A number of these issues are similar to those expressed in the officer retention survey discussed in appendix VI.

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

6 MAY 1988

Mr. Frank C. Conahan
Director, National Security and
International Affairs Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office Draft Report, "AIR FORCE PILOTS: U.S. Air Force Requirements, Inventory, and Related Data," dated March 23, 1988 (GAO Code 392408, OSD Case 7572).

The information presented in the draft report is generally accurate as we have indicated at enclosure A. Our technical corrections to the report are at enclosure B. They deal primarily with the issues of major weapon system (MWS) management and aviation compensation.

The Air Force determines undergraduate pilot training rates by comparing aggregate pilot requirement and inventory data which are then constrained by Major Command readiness objectives. Imbedded in the aggregate pilot requirement is a number of billets which are not MWS specific, in that they may be filled by otherwise qualified pilots of any MWS.

Finally, more recent pilot survey data than that which appears in the draft report was provided to your representatives on April 14, 1988. That new data more accurately reflects the effects of compensation issues on pilot retention.

Sincerely,

Grant S. Green, Jr.

Enclosures:
As Stated

DEPARTMENT OF DEFENSE COMMENTS
ON
GAO DRAFT REPORT - DATED MARCH 23,1988
(GAO CODE 392408) OSD CASE 7572

"AIR FORCE PILOTS: AIR FORCE REQUIREMENTS, INVENTORY AND RELATED DATA"

* * * * *

FINDINGS

o FINDING A: The Rated Management Process. The GAO reported that, in 1975, the Air Force approved what has become known as the rated management process in managing its rated force (i.e., pilots/navigators in the grades of lieutenant through lieutenant colonel). The GAO explained that the process is based on identifying requirements, inventories, and readiness objectives for the major weapon system groups. The GAO observed that the basic concept of the process is simple:

- major weapons system requirements and inventories are defined 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; and
- the undergraduate flight training program is sized to produce the proper number of new pilots/navigators, with the size constrained by operational units ability to absorb experienced pilots.

The GAO concluded that the objective of the process is to develop and maintain a pilot/navigator inventory that meets the Air Force stated requirements, while maintaining a credible combat posture and minimizing costs. (pp. 9-13/GAO Draft Report)

Now on pp. 10-12.

DoD Response: Concur. It should be noted, however, that undergraduate pilot training rates are determined by comparing aggregate inventory and requirements data (to include major weapons system (MWS) specific and other pilot requirements), which are then constrained by major command readiness objectives. While a majority of the total Air Force pilot requirements are MWS specific, authorizations in the trainer, prorated, general operations staff, and mission support areas may be filled by pilots from any MWS, based on available inventory.

o FINDING B: Pilot Requirements and Inventories. The GAO noted that, as of December 31, 1987, 23,300 pilot positions

were authorized and 23,358 pilots assigned, an overage of 58 pilots. Even so, the GAO observed that the Air Force data by budget category shows that some authorized positions remain vacant, particularly in other than force. The GAO found that one of the keys to the authorized and assigned question is overall manning at the wing level. The GAO reported that a breakout by major weapon system groups shows most authorizations were met at the wing level and below, with the primary exception being instructors in training units. The GAO noted that, according to the Air Force, within major weapon system groups a shortage in one budget category may be filled by pilot overages in other categories and in some cases by pilot surpluses in other major weapon systems groups. The GAO further noted that, also according to the Air Force, some reported shortages or overages may be due to a lag in the paperwork. The GAO concluded, however, that a detailed analyses of the statistical data is necessary to identify specific pilot shortages and overages. The GAO observed that, at the end of FY 1987, the regular Air Force active aircraft inventory was about 7,200 and with total pilot requirements of about 23,300, the ratio of total pilots to aircraft was over 3 to 1 and the ratio of pilots at wing level to aircraft was over 2 to 1. The GAO concluded that accurate future projections of pilot overages/shortages are difficult because of the frequent changes in requirements and inventories. The GAO reported that the FY 1988 presidential budget projection of pilot requirements and inventories for each fiscal year from 1988 through 1991 are lower than FY 1987 presidential budget projections. In addition, an update of the FY 1988 presidential budget projections of requirements shows additional decreases. The GAO concluded that, using the latest official pilot requirements available in the FY 1988 presidential budget, estimated pilot shortages range from 72 in FY 1988 to 1,669 in FY 1992. (pp. 14-18/GAO Draft Report)

Now on pp. 13-16.

DoD Response: Concur. The frequent changes to pilot requirements, mentioned in the report, are the result of force structure changes that occur in the budgeting and funding process. The inventory of Air Force pilots is also affected by changes to the retention environment. It should also be recognized that the ratio of pilots to aircraft, noted by the GAO, is influenced by the number of cockpit positions available and the pilot-to-position ratios needed to fly the wartime sortie rates for the aircraft in question, as well as the inventories of aircraft and pilots.

- FINDING C: Pilot Retention Rates And Years of Service Groups. The GAO reported that one key measure of pilot retention used by the Air Force is the cumulative continuation rate, which is the percent of officers entering their 6th year of service who would complete their 11th year, if current retention rates persisted. The GAO found that the overall Air Force pilot cumulative continuation rate reached

78 percent in FY 1983 and has since declined to 48 percent, with rates for the trainer, tanker, and strategic airlift major weapon system groups declining even lower. The GAO concluded that, if the current retention rate persists, less than half of all the Air Force pilots entering their 6th year of service would complete their 11th year of service. The GAO noted that the declining continuation rate is a result of increasing loss rates, with the 7th and 8th years of service showing the highest loss rates (i.e., the years when the initial service commitment for pilots has been completed). The GAO reported that, since 1979, in order to counter these trends, the Air Force has increased initial service commitments from undergraduate pilot training (UPT) plus 6 years to UPT plus 8 years; however, the earliest effect of these changes on pilot retention will be in FY 1995. The GAO further reported that, while pilot retention rates declined during FY 1983 through FY 1987, at the same time total pilot inventory increased by 1,591. In addition, during this period the 1-5 year group and the 20-30 year group increased both numerically and as a percentage of total pilot inventory, while the other groups declined. The GAO noted that the increase in the 1-5 year groups resulted from an increase in the number of new pilots and the loss rates remain low because these pilots are still within the initial service commitment period. The GAO also reported that pilot inventories for FY 1987 through FY 1993 are projected to decline by 3,546, with the projected number of pilots in each group decreasing, except for the 6-11 year group. The GAO found that pilot inventories for FY 1983 through FY 1993 show the most significant changes are projected in the 1-5 and 12-19 year groups, with the 1-5 year group increasing from 22 percent of the total pilot inventory to 31 percent and the 12-19 year group decreasing in relation to the total pilot inventory, from 38 percent in FY 1983 to 26 percent in FY 1993. The GAO also observed that combining the 1-5 and 6-11 year groups shows that newer pilots are projected to increasingly account for a larger portion of the total inventory, while the converse is true for the combined 12-19 and 20-30 group. (pp. 19-26/GAO Draft Report)

Now on pp. 17-20.

DoD Response: Concur.

- FINDING D: Officer Inventory By Rank. The GAO found that, in FY 1987, the Air Force pilots accounted for 25,654, or about 24 percent, of the 107,338 Air Force officers. The GAO observed that, proportionately, pilots accounted for a much higher percentage of officer positions at the higher ranks. The GAO noted that pilots were about 68 percent of the generals, 31 percent of the colonels, and 29 percent of the majors. (p. 27/GAO Draft Report)

Now on p. 21.

DoD Response: Concur. However, it should be noted the percentage of pilots in the higher grades stems from accession

and retention policies that were in effect more than 20 years ago. The percentages of pilots in the various ranks also reflect the higher desired retention pattern for pilots as demonstrated by the longer active duty service commitment that pilots receive for the completion of training. The inventory of senior pilots, which is still within DOPMA and congressional ceilings, reflects the combat experienced leadership of the Air Force. Finally, it should also be noted that students in undergraduate pilot training are not included in the pilot inventory, which causes the figures for lieutenants to appear low.

- FINDING E: Compensation. The GAO noted that the Aviation Career Incentive Act of 1974 authorized additional pay to encourage pilots to remain on active duty for a career. In this regard, an officer must have at least 6 years of flying experience by the 12th year of rated service to be entitled to continuous aviation pay until the 18th year of service. The GAO further explained that, 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 continue to be entitled to such pay.) The GAO noted that aviation career incentive pay rates were last increased on October 1, 1981, for aviators with more than 6 years of aviation service in order to improve retention and reduce shortages of qualified personnel, thus combatting what was perceived as an increasingly serious shortage. The GAO observed that officers with more than six years of aviation service particularly were targeted to provide the greatest incentive during the flight intensive, retention critical, mid-career years. The GAO noted that over a 20-year career a pilot can earn up to $78,552 in flight pay and as much as $112,512 over 30 years. (pp. 29-33/GAO Draft Report)

Now on pp. 22-24.

DoD Response: Concur. While it is possible for a pilot to earn as much as $112,512 in aviation career incentive pay over a 30 year career, such an event would be the exception. The typical pilot can expect to earn as much as $97,512 over 25 years.

- FINDING F: Officer Retention Survey. The GAO reported that, in December 1986 and January 1987, the Air Force Military Personnel Center administered an officer retention survey directed specifically at active duty pilots. Responses were received from 4,230 pilots out of the 6,612 pilots surveyed. (The GAO observed that the results are considered to be representative of Air Force pilots as a group and by year group.) The GAO found that almost all pilots with 12 or more years of service responded that they had decided on the Air Force as a career. The GAO further found that the factors selected by the pilots "as most satisfied with" were:

- quality of co-workers;
- job challenge;
- job security; and
- work group cohesiveness.

On the other hand, those factors selected "at least satisfied with," were:

- amount of nonflying additional duties;
- length of average duty day;
- "say" in base of assignment;
- "say" in specific job assignment; and
- work schedule.

The GAO concluded that dissatisfaction with the Air Force was perceived as being more influential in the decisions of pilots to separate and join the airlines, than was airline appeal. The GAO noted that, in response to both the specific survey questions and requests for additional written responses, pilots expressed a strong desire to remain in flying positions. The GAO observed that, according to 60 percent of the pilots, a "fly-only" career option would have a positive effect on their current intentions toward making the Air Force a career. (pp. 34-38/GAO Draft Report)

Now on pp. 25-28.

DoD Response: Concur. The retention data cited in the report reflects the retention attitudes prevalent at the time of that survey. Since that time, however, the pilot population has experienced one more pay cap, observed officer drawdown actions as a result of congressional tasking, and witnessed other budgetary constraints leading to force structure reductions. Subsequent to the publication of the draft report, more current survey data became available and was presented to the GAO. That data reflects a visible and tight fiscal environment, which is part of an overall decline in pilot retention.

RECOMMENDATIONS

o NONE

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