
RECRUITING AND RETENTION IN THE LATE 1990s

We examined late-1990s trends in enlisted recruitment, retention, and reenlistment and officer retention in the Air Force compared with the other services to determine whether the Air Force faces personnel issues that differ in type and magnitude from those of the other services. We focused on the late 1990s because it is the period after the defense drawdown was completed and the end of Operation Desert Storm. Both the drawdown and the Gulf War caused aberrations in recruiting and retention trends (Asch, Hosek, et al., 2002). We also considered the effect of “perstempo” on reenlistment.¹ This examination of recent trends provides a backdrop for understanding the role that skill pay and capability pay might play in helping the Air Force achieve its manpower requirements and provides background for some of the reasons why these pays have been suggested as a means of improving manpower management.

RECRUITING HIGH-QUALITY PERSONNEL

During the boom, private-sector employment and educational opportunities were highly attractive to prospective high-quality recruits.² From 1995 to 2000, the Air Force and the Army suffered drops of more than 10 percentage points in the proportion of their enlisted recruits who were of high quality (Table 2.1). The Air Force

¹*Perstempo* is the involvement of personnel in long or hostile duty.

²*High-quality recruits* are those with a high school diploma and a score in the upper half of the AFQT score distribution as normed in 1980.

Table 2.1
High-Quality Recruits as a Percentage of Non-Prior-Service Recruits

	1995	1996	1997	1998	1999	2000
Air Force	82	81	77	77	75	72
Army	64	61	58	58	53	52
Navy	60	58	61	60	55	54
Marine Corps	62	62	62	62	61	60

SOURCE: Office of Accession Policy, OSD.

continued to lead the services in the percentage of high-quality recruits—72 percent in 2000—but this percentage had fallen from 82 percent in 1995. For all services, recruiting high-quality youth was more difficult than it had been a decade earlier. By the late 1990s, the increasing number of individuals who were college bound had depleted the high-quality recruiting population. In addition, private-sector wages had been rising steadily (see Chapter Three) and unemployment was extraordinarily low.

Within this broader context, additional reasons are needed to understand why the decline in high-quality accessions was smaller in the Navy and Marine Corps than in the Air Force and Army. Air Force and Army recruiting efforts seemed to be less effective than those of the Navy and Marine Corps, whose percentage point declines in high-quality recruits were less than half as large as those of the Air Force and Army. One study found that the effectiveness of Air Force recruiters declined in the 1990s relative to the 1980s (Murray and McDonald, 1999). Effectiveness is defined as the percentage increase in high-quality recruits associated with a 1 percent increase in recruiters, other factors held constant. Possible reasons for the decline in effectiveness include less (or less-effective) advertising; an inability to penetrate the college market; lack of sufficient recruiting resources (number of recruiters, recruiting stations, allocation of recruiters and stations to geographic areas); an inadequate level of enlistment bonuses and educational benefits; and less-than-fully-efficient recruiting operations, including recruiter management and recruiter performance incentives.

Generally, accession requirements for the Air Force and the other services grew in the late 1990s, whereas requirements were lower in

the mid-1990s because of the defense drawdown. The Air Force's enlisted accession goals were 31,000 in FY95, 30,700 in FY96, 30,200 in FY97, 31,300 in FY98, 33,800 in FY99, 34,000 in FY00, and 34,600 in FY01.³ It is possible that recruiting resources did not increase as fast as accession requirements did. From 1995 to 1999, the Air Force had between 950 and 1,050 production recruiters. This number increased to around 1,100 in FY00 and over 1,400 in FY01. The Air Force also made greater use of enlistment bonuses and spent more on recruit advertising in 1999 and later than it did in 1995–1998, but it may have taken a while for the advertising to have an effect on accessions.

External factors may have been equally responsible for the decreasing ability of the Air Force to attract high-quality recruits in the 1990s. The Air Force traditionally seeks recruits with strong technical aptitudes, but such prospective recruits were undoubtedly attracted by high-tech civilian job opportunities. Thus, even if Air Force recruiting had remained as effective as before, it might have been overpowered by the upsurge in high-tech civilian job opportunities. According to this hypothesis, which combines cyclical and long-term trend elements, labor demand declines when the economy cools off, thereby easing recruiting for all services. However, if the demand for high-aptitude skilled workers continues to grow, albeit more slowly, the Air Force recruiting environment will continue to be challenging. Offsetting these trends, to some degree, is growth in the population of youth ages 18 to 24, which is projected by the Bureau of the Census to increase until 2010.

RETENTION AND REENLISTMENT

The Air Force has been particularly concerned about retention declines at the first- and second-term reenlistment points. In this section, we focus on retention and reenlistment—the continuation of personnel at reenlistment decision points. We do not have separate information on the reenlistment or retention goals (or targets) of the

³Statement of Lt. Gen. Donald L. Peterson, Deputy Chief of Staff, Personnel, United States Air Force, to the Senate Committee on Armed Services, Subcommittee on Personnel, April 24, 2001. This is the source for our statements on accession goals, the number of Air Force recruiters, Air Force advertising, and (later in this chapter) first- and second-term reenlistment goals.

services, which together with continuation information would indicate whether the supply of personnel is adequate to meet the demand. However, the Air Force stated that it missed its first-term retention goals from the last quarter of FY98 until the second quarter of FY01, and second-term reenlistment also remained below goal at that point. Therefore, the downward trends in retention and reenlistment reported in the tables below appear to bear out that outcomes were below goal.

Retention rate is a commonly tracked indicator of enlisted retention. The Defense Manpower Data Center (DMDC) defines *retention rate* as the percentage of personnel who reenlist or extend, among those who reach a reenlistment or extension decision date within the 18-month period that begins at the start of the fiscal year. Extensions typically represent short obligations of additional service, often a year or less, whereas reenlistment reflects a longer commitment of service. We obtained first- and second-term retention rates from DMDC, and we also separately computed reenlistment rates for first-term personnel. We defined *reenlistment rate* as the percentage of personnel who make a new obligation of 25 months or more, relative to the population nearing the end of a service obligation and not extending. The service obligation could be either the end of a term of service or the end of a previous extension. *Extensions* are defined here as being 1 to 24 months long. (An Air Force reenlistment term is typically 48 months.)

From 1995 to 1999, the Air Force experienced the largest decline in first-term retention (Table 2.2) among the services: Its retention rate fell by five percentage points, or 12 percent. The Marine Corps' retention rate held steady, the Army's fell by two percentage points, and the Navy's actually increased. (The increase in Navy retention might have been related to its rising attrition rate, which would decrease the total pool of personnel who could choose to reenlist but would increase the proportion likely to reenlist. Thus, in spite of the Navy's increased retention rate, the net effect on the total Navy enlisted force could be a decrease.) In 2000, perhaps as a result of the pay increases contained in the FY00 National Defense Authorization Act (NDAA), first-term retention improved for the Air Force, Navy, and Marine Corps. The NDAA specified a 4.8 percent increase in basic pay, about half a percentage point above private-sector wage growth. The act also committed to higher-than-usual pay increases

Table 2.2
First-Term Retention Rates (%)

	1995	1996	1997	1998	1999	2000
Air Force	41.5	39.6	37.5	36.8	36.9	41.9
Army	40.2	38.7	41.8	39.6	38.2	38.3
Navy	33.5	37.4	36.2	36.3	38.6	43.5
Marine Corps	21.9	21.3	21.5	21.6	21.3	25.2

SOURCE: Tabulations provided by Defense Manpower Data Center.

through FY06, namely, basic pay increases equal to the increase in the Employment Cost Index (the usual standard) plus half a percentage point.⁴ Service members followed the pay debate closely, judging from the many articles on pay in service newspapers such as the *Air Force Times*, and they were probably well aware of the strength of the FY00 pay action.

Reenlistment rates in the latter 1990s also fell. As Table 2.3 shows, the Air Force first-term reenlistment rate fell by more than did the retention rate. Between 1996 and 1999, the reenlistment rate dropped 17 percent—from 52 percent to 43 percent—with much of the change occurring in 1998–1999. Thus, a growing segment of those who were still enlisted a year after the end of their service commitment had obtained extensions rather than reenlisting. Part of this change may be due to random variation from year to year; e.g., 1999 may have been an unexpectedly poor year. Nevertheless, the 17

Table 2.3
First-Term Reenlistment Rates (%)

	1996	1997	1998	1999
Air Force	52	50	49	43
Army	41	48	45	43
Navy	32	31	35	33
Marine Corps	18	19	20	20

SOURCE: Authors' tabulations.

⁴The act also increased bonus ceilings, established a Thrift Savings Plan, and increased military retirement benefits for personnel entering service since August 1986, bringing their benefits to par with those of preceding entrants.

percent drop represents a large decline in actual reenlistments. (We do not have data on reenlistment rates for 2000.⁵)

The Air Force also had the largest decline in second-term retention, where presumably most stay/leave decisions do not involve extensions. Its second-term retention rate fell from 61.7 percent to 51.2 percent, or 16 percent (Table 2.4). By comparison, the Army's second-term retention rate declined 7 percent (from 54.5 to 50.9 percent), and the Navy and Marine Corps rates improved from 1995 to 1997, then declined to their 1995 levels. The rates for 2000 show some evidence of improvement over 1999 for the Air Force, Navy, and Marine Corps.

Table 2.4
Second-Term Retention Rates (%)

	1995	1996	1997	1998	1999	2000
Air Force	61.7	58.9	54.5	50.7	51.2	52.0
Army	54.5	48.7	54.9	52.1	50.9	50.5
Navy	52.8	54.6	55.8	53.7	52.8	53.5
Marine Corps	41.4	46.1	45.3	44.9	42.8	44.6

SOURCE: Tabulations provided by Defense Manpower Data Center.

REENLISTMENT OF HIGH-APTITUDE HIGH PERFORMERS

Table 2.5 shows the first-term reenlistment rates for high-aptitude high performers and the remainder of personnel ("others"). *High-aptitude high performers* are personnel in AFQT Category I or II who had fast promotion times to E-4. In the Army, Navy, and Marine Corps, about 20 percent of those at the point of making a first-term reenlistment decision were high-aptitude high performers. In the Air Force, the figures were a bit higher: 24 percent in 1995–1996, declining to 20–21 percent in 1998–1999.

⁵Air Force data on reenlistment show a similar trend to that reported in Table 2.3. The Air Force excludes personnel deemed ineligible to reenlist, whereas the rates in Table 2.3 use data that do not indicate eligibility. The Air Force's first-term reenlistment rates declined steadily from about 63 percent in FY95 to about 50 percent in FY99, then rose to 52 percent in FY00. The Air Force's second-term reenlistment rates show a similar decline. Although our definition of reenlistment rate is not the same as the Air Force's, we find that the trends were nearly identical. Air Force rates are from Lt. Gen. Peterson's statement cited in footnote 3.

Table 2.5
First-Term Reenlistment Rates for AFQT I-II Personnel
Who Were Fast to E-4 and Others (%)

	1996	1997	1998	1999
Air Force				
AFQT I-II Fast to E-4	42	48	43	39
Others	55	51	50	44
Army				
AFQT I-II Fast to E-4	32	40	36	43
Others	43	51	47	43
Navy				
AFQT I-II Fast to E-4	37	35	34	36
Others	31	29	35	32
Marine Corps				
AFQT I-II Fast to E-4	25	26	26	24
Others	17	18	18	19

SOURCE: Authors' tabulations.

In the 1980 survey used for the purpose of norming the Armed Service Vocational Aptitude Battery to the civilian youth population, 7 percent were Cat I and 28 percent were Cat II. Although the comparison group's AFQT distribution may have changed somewhat since then, AFQT Cat I-II personnel score roughly in the top third of the youth population. Fast-to-E-4 personnel were in the fastest half of those who had reached E-4 by the time of their first-term reenlistment decision. Compared to their peers, they demonstrated a capability for higher performance in training, duty assignments, and physical fitness. Research under way at RAND suggests that high-aptitude high performers continue their high performance in subsequent terms of service, as witnessed by faster subsequent promotions. As a result, retaining such personnel is beneficial for military capability, for the capacity to train following cohorts of junior personnel, and for the supply of future leaders.

In the Air Force, the first-term reenlistment rate of high-aptitude high performers has been persistently lower than the rate for others (Table 2.5). This is not the case in the Marine Corps, where high-aptitude high performers were *more* likely to reenlist than others were, although the gap between their reenlistment rate and that of others has narrowed over time. The Marine Corps' comparatively higher reenlistment rate for high-aptitude high performers was

probably supported by its low overall target reenlistment rate of around 20 percent: The low target rate allows the Corps to be highly selective—or rather it enables the Corps to induce high selectivity among personnel volunteering to reenlist.

The Air Force is certainly selective with respect to the quality of its recruits. For instance, in 1998 about 44 percent of Air Force recruits were Cat II, compared to about 33 percent in the other services. Furthermore, over time, the Air Force reenlistment rate fell by a greater amount among lower-quality personnel than among Cat I-II fast trackers. Therefore, even with a lower reenlistment rate among Cat I-II fast-trackers, Air Force reenlistees overall still include a high proportion of high-quality personnel compared to earlier periods and compared to the other services.

Similar to the Marine Corps, the Navy had *higher* reenlistment rates for high-aptitude high performers than for lower-quality personnel in 1996, 1997, and 1999, and the Navy's rates for both were nearly the same in 1998. The Army was more like the Air Force. In fact, the Army's high-aptitude high performer reenlistment rate was about 10 percentage points lower than the rate for others in 1996, 1997, and 1998. However, in 1999 the Army's rates were equal: The high-aptitude high performer rate rose while the rate for others fell. The Army's high-aptitude high performance reenlistment rate improved from 1998 to 1999, whereas that of the Air Force worsened.

If the definition of high-aptitude high performers is broadened to include AFQT Categories I-III A, a similar, though less stark, picture emerges. These data are presented in Appendix A.

INCREASES IN MILITARY PAY WOULD INCREASE REENLISTMENT

Retention responds to changes in basic pay and other forms of compensation, including reenlistment bonuses and retired pay. Estimates vary as to how a percentage change in relative military pay would affect first-term retention. A conservative estimate is that a 1 percent increase in the military/civilian pay ratio increases first-term retention by 0.5 to 1.5 percent. Using this standard in recent work, we estimated that declines in the military/civilian pay ratio and in the unemployment rate over the FY92 to FY99 period would have

reduced retention by between 9 and 15 percent (Asch, Hosek, and Warner, 2001). Using a range of forecasts about future civilian pay and unemployment, we estimated that the FY00 pay action would go a long way toward reversing the 1990s decline in retention.

The FY00 first-term retention increase is consistent with this view. Still, shortages and retention problems may continue to plague particular areas such as aviation, information technology, and knowledge-based occupations. Therefore, the FY00 pay action, while it restructured the pay table to better reward promotion over longevity, did not necessarily address issues related to the need for pay differentiation across occupational areas. Neither did it address fundamental changes in the civilian opportunities that military personnel face. In the next chapter, we discuss these fundamental changes and the current degree of pay differentiation in the Air Force and other services.

THE EFFECT OF PERSTEMPO ON REENLISTMENT

Has the higher tempo of personnel use for peacetime operations hurt Air Force reenlistment? We find that although nonhostile and hostile episodes of deployment have increased, the increase has not led to a reduction in Air Force reenlistment. Reductions in Air Force reenlistment therefore do not appear to be the result of the increase in deployment episodes. This finding is conditional on the kind of deployments that occurred in the 1990s and on the deployment-related pays that members received. Future deployments might differ in character from those of the 1990s; by the same token, deployment-related pays could be adjusted in the future to help offset such negative aspects of deployment as combat danger, health risks, and separation from family and friends.

After the Cold War and Desert Shield/Desert Storm, military operations during peacetime emerged as a major component of national security strategy. The increase in peacetime operations has fundamentally changed the pace of activity for many military personnel, who must now support peacetime operations in addition to maintaining readiness for major theater war. The increase in peacetime operations was not initially recognized as a permanent change in the demands that would be placed upon the services—permanent in the sense that it would be a factor in defense planning in addition to

major theater wars or large-scale contingencies. Yet during the 1990s, peacetime operations became commonplace as the services deployed personnel to peacemaking, peacekeeping, humanitarian, disaster-relief, and nation-building operations. In the late 1990s, the Air Force decided to reconfigure itself into Air Expeditionary Forces (AEFs), one purpose of which was to make deployment more predictable for airmen. Although the number and kind of deployments would not be more predictable, airmen would at least know whether their AEF was at the top of the list in case of a call-up.

We expect the increase in predictability to have a positive effect on morale and reenlistment but cannot analyze this with the available data. We can, however, analyze how episodes involving nonhostile or hostile duty affected reenlistment.⁶

Data on two special pays, Family Separation Allowance (FSA) and Hostile Fire Pay (HFP), allowed us to infer episodes of duty involving longer periods of separation and/or hostile duty. The receipt of HFP in a given month indicates hostile duty. The receipt of FSA in a given month indicates long duty (30 or more consecutive days) for personnel with dependents. Personnel without dependents are not eligible for FSA; we imputed long duty to personnel without dependents by referring first to the receipt of HFP in consecutive months and then to whether a majority of the service member's unit members with dependents received FSA, which indicates that the unit was deployed. The data therefore accurately record episodes of hostile duty for all personnel, with or without dependents. The data accurately record episodes of long duty for personnel with dependents. Because imputation is used for personnel without dependents, the data undercount episodes of long, nonhostile duty for these personnel, although the undercount appears to be small. Further, although FSA and HFP data are accurate and comparable across the services, they are not fully comprehensive. They do not count short trips from home station of less than 30 consecutive days, and they miss some longer episodes of nonhostile duty for personnel without dependents. (A more comprehensive database that captures "days away" is under development at DMDC.)

⁶This section is based on research under way at RAND by James Hosek and Mark Totten.

The involvement of personnel in long or hostile duty can be measured by counting the episodes of such duty over a period of time. Table 2.6 shows long or hostile duty rates for first-term personnel within a three-year window that covers the years before the date of a service member's decision to reenlist or leave.

The table indicates that the percentage of personnel with long or hostile duty rose in the late 1990s for the Air Force and the Army. In the Air Force, 39 percent of the personnel making a first-term reenlistment decision in 1996 had one or more episodes of long or hostile duty in the prior three years. By 1999, that figure had risen to 49 percent, an increase of 25 percent. The increase for Army personnel was similar, growing from 47 percent in 1996 to 60 percent in 1999, a gain of 28 percent. However, the percentage of Navy personnel with long or hostile duty in the prior three years declined from 69 percent in 1996 to 62 percent in 1997, then held steady around 60 percent. For Marines, the percentage held fairly steady near 75 percent.

As the percentage of personnel with *any* long or hostile duty rises, we expect to find increases in the percentage of personnel with *multiple episodes* of long or hostile duty. The effect on reenlistment depends on the precise pattern of increase in episodes. Specifically, an analysis of the relationship between long or hostile duty and Air Force first-term reenlistment implies that, compared to personnel without any episodes of long or hostile duty, personnel with long or hostile duty are in general *more likely* to reenlist.

We find that episodes involving no hostile duty have a positive effect on first-term reenlistment, and this effect is greater the greater the number of such episodes. Episodes involving hostile duty have little

Table 2.6

Percentage of First-Term Personnel with Any Long or Hostile Duty in Prior Three-Year Period

	1996	1997	1998	1999	% Change, 1996–1999
Air Force	39	40	45	49	25
Army	47	55	58	60	28
Navy	69	62	60	61	-11
Marine Corps	73	77	77	76	5

SOURCE: Authors' tabulations.

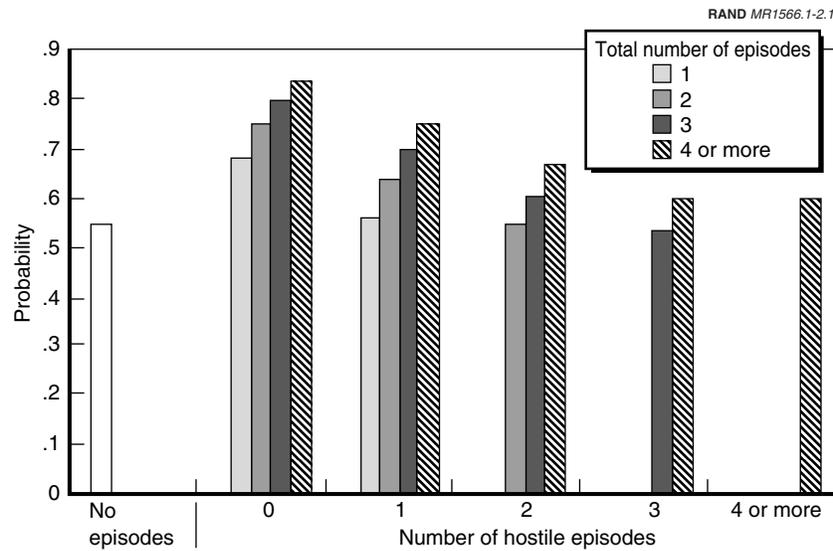


Figure 2.1—Effect of Episodes of Long or Hostile Duty on Probability of First-Term Reenlistment

effect on first-term reenlistment, regardless of their number. Figure 2.1 is based on a regression analysis of the relationship between episodes of long or hostile duty and first-term reenlistment. The height of the bars in the figure indicates the probability of reenlistment for a point-of-reference airman with given characteristics. The bar at the far left is for an airman with no episodes of either long or hostile duty; the groups of bars to the right are for varying numbers of nonhostile episodes when there are zero, one, two, three, or four or more hostile episodes. Within any hostile-episode category, reenlistment rises as the number of other, nonhostile episodes rises. Looking at the leftmost bar in each group of bars, we see little change in the reenlistment probability for one, two, three, or four or more hostile episodes compared with no episodes. Again, hostile episodes had little effect on first-term reenlistment.

To quantify the effect on reenlistment of the change in episodes of duty between 1996 and 1999, we used the regression results to make predictions at the individual level. For example, according to the data, an increase in the percentage of personnel with any episode of

duty (Table 2.6) should increase the percentage reenlisting. But among personnel with a nonhostile episode of duty, an increase in the number of hostile episodes should decrease the percentage reenlisting.

As shown in Table 2.6, the percentage of Air Force personnel with episodes of long or hostile duty in the three years prior to their reenlistment point rose from 39 percent in 1996 to 49 percent in 1999. Table 2.7 shows how the distribution of episodes changed between those years among personnel with episodes of long or hostile duty. More personnel had multiple episodes, and the increase in multiple episodes was driven by an increase in episodes involving hostile duty. The average number of episodes per person rose from 1.49 in 1996 to 1.67 in 1999, or 12 percent, while the average number of hostile episodes per person rose from .98 to 1.31, or 34 percent. Furthermore, although not shown in the table, 69 percent of personnel with episodes of either long or hostile duty had had a hostile episode in 1996; in 1999, this percentage had risen to 81 percent.

Table 2.8 illustrates the effect of the increase in long or hostile duty on first-term reenlistment. The table reports the predicted reenlistment probabilities for airmen at a given point in time (1996) who are assumed to have a given set of characteristics. With those factors held constant, only the change in duty episodes affects the reenlistment probability. In 1996, 61 percent of these airmen had no long or

Table 2.7
Episodes of Long or Hostile Duty in Prior Three-Year
Period Among First-Term Air Force Personnel
with Any Such Duty

		0	1	2	3	+	Average number of episodes
1996	All episodes		.65	.24	.07	.04	1.49
1999	All episodes		.56	.26	.11	.06	1.67
1996	Hostile episodes	.31	.48	.14	.04	.02	.98
1999	Hostile episodes	.19	.49	.20	.08	.05	1.31

SOURCE: Authors' tabulations.

Table 2.8
Effect of Long or Hostile Duty on First-Term Reenlistment

	Probability of zero episodes (%)	Probability of reenlist- ment given zero episodes (%)	Probability of positive episodes (%)	Probability of reenlist- ment given positive episodes (%)	Overall prob- ability of reenlist- ment ^a (%)
1996	61	55	39	61	57
1999	51	55	49	59	57

^a(Column 1 × column 2) + (column 3 × column 4).

hostile duty, and their reenlistment probability was 55 percent. The other 39 percent had long or hostile duty; given the mix and amount of such duty, their reenlistment probability was 61 percent. The overall reenlistment probability was 57 percent. In 1999, 51 percent of the airmen had had no long or hostile duty, and their reenlistment probability was again 55 percent. For the 49 percent who had such duty, the mix and amount of such duty implied a reenlistment probability of 59 percent. Thus, their reenlistment probability was lower than that of their counterparts in 1996. This is consistent with Figure 2.1, which implies that *among members with any episodes*, the average reenlistment rate will be lower the higher the fraction of those episodes that are hostile. But this rate will still be *higher* than the reenlistment rate among members with no episodes, whose fraction declines. Thus, the overall reenlistment probability for 1999 was still 57 percent, the same as for 1996.

These findings imply that we could hear complaints from some personnel whose nonhostile episodes were in effect turned into hostile episodes but still see little if any effect on overall reenlistment.

OFFICER CONTINUATION RATES

In this section, we review recent data on Air Force officer continuation rates and compare them to the rates for officers in the other services. As with their enlisted counterparts, officers' continuation rates in the Air Force have declined in recent years, especially for those in mid-career with 6 to 13 years of service; i.e., O-3s and O-4s.

On the other hand, continuation rates among senior officers, those with over 20 years of service, increased from 1994 to 1995 and then held fairly steady.⁷

Table 2.9 shows annual officer continuation rates since FY94 by years of service groupings. The continuation rate is defined as the fraction of individuals who were Air Force officers at the beginning of the fiscal year and were still Air Force officers at the end of the year. Year of service is defined as of the beginning of the fiscal year for each individual.

The table shows that the annual continuation rate has declined by more than 5 percent among those in mid-career. Although this decline may seem small, changes in the rates can accumulate over time if intervening actions are not taken. For example, based on the continuation rate of those in year of service (YOS) 0-5 in 1994 shown in Table 2.9, the likelihood that a new officer would still be in service by YOS 5 is $(.955 \times .955 \times .955 \times .955 \times .955) = .794$. Based on the rate for FY00, which is 1.7 percent smaller, the likelihood that a new officer is still in service by YOS 5 is .73, a figure 8 percent smaller than the FY94 figure. Thus, small changes in continuation rates can have noticeable effects over time, and moderate declines, such as those shown

Table 2.9
Air Force Officer Continuation Rates, All Commissioning Sources,
by Fiscal Year (%)

Years of Service	1994	1995	1996	1997	1998	1999	2000	% Change 1994–2000
0 to 5	95.5	95.9	94.7	94.0	94.3	93.7	93.9	-0.7
6 to 9	95.2	92.6	92.6	91.6	90.8	90.1	90.2	-5.3
10 to 13	95.6	92.1	94.1	93.9	91.8	90.1	90.6	-5.2
14 to 19	93.6	91.6	94.2	94.8	94.9	96.3	95.9	1.2
20 and above	69.7	77.3	77.6	76.7	78.2	80.1	77.5	11.1

SOURCE: Defense Manpower Data Center.

⁷This might be due to high-year-of-tenure rules being relaxed in 1995 after having being tightened during the drawdown.

in Table 2.9 for those in YOS 6–13, can have important ramifications for meeting manning requirements.⁸

To understand whether the annual continuation rates for midcareer officers in the Air Force are similar to the experience of the other services, Table 2.10 shows the annual continuation rates for YOS 6 to 9 for the other services. Continuation rates dropped for all the services between FY94 and FY00. But the Air Force experienced the largest decline in annual continuation rates for officers in YOS 6 to 9. The Navy experienced an increase in its officer continuation rate between FY94 and FY96, but the rate had dropped 3.1 percentage points by FY00. The Marine Corps and Army also experienced increases in their officer continuation rates between FY94 and FY97, but their rates declined thereafter. Although the Air Force had the largest drop in FY94, it is useful to recognize that the FY94 rate drop was the steepest of the period 1994–2000. Compared to the FY90 rate, the FY00 continuation rate actually represents an improvement over the decade.

The figures in Table 2.9 combine the rates for Air Force officers from all commissioning sources. However, the trends differ somewhat for

Table 2.10
Officer Continuation Rates, YOS 6 to 9, by Fiscal Year (%)

	1990	1994	1995	1996	1997	1998	1999	2000	% Change 1994– 2000
Air Force	89.6	95.2	92.6	92.6	91.6	90.8	90.1	90.2	–5.3
Army	91.6	89.6	90	91.2	91.8	89.7	89.6	89	–0.7
Navy	86.5	85.8	85	89.3	88.7	86.8	86	86.5	0.8
Marine Corps	88.5	87.8	88.2	89.9	91.1	90.4	90.2	90.0	2.5

SOURCE: Defense Manpower Data Center.

⁸Continuation rates must be combined with information on the inventory of personnel in order to project the number of personnel on hand in the future. An example of how small declines in continuation rates can have large effects on the experience mix of personnel if sustained for five years may be found in Asch, Hosek, and Warner (2001).

officers whose commissioning source was the Air Force Academy instead of other sources, such as ROTC, Officer Candidate Training (OCT), or direct appointment. Table 2.11 shows the trend in officer continuation rates for Air Force officers with YOS 0–5, YOS 6–9, and YOS 10–13 by commissioning source. The differences by commissioning source are important, as discussed below in the context of Table 2.12, because the occupational distribution differs by commissioning source. Consequently, differences in continuation rates by source can result in differences by occupational area.

During the initial commitment, from YOS 0 to 5, Academy graduates generally had the highest continuation rates, whereas direct appointments and those who entered through other sources had the lowest. A plausible reason for this is that the Academy group has a much higher percentage of pilots, who have a longer initial service commitment. Thus, at any point in time we would expect Academy graduates to have a higher 0–5 YOS continuation rate than officers from other sources. Yet over time Academy graduates may be subject

Table 2.11
Air Force Officer Continuation Rates, by Commissioning Source,
by Fiscal Year (%)

Years of Service	1994	1995	1996	1997	1998	1999	2000	% Change 1994–2000
0 to 5								
Academy	98.4	98.7	97.8	96.4	96.3	97.9	97.2	-1.2
ROTC	97.1	97.8	95.8	94.8	95.4	95	95.5	-1.6
OCT	97.7	98.5	98.2	96.4	96.1	96.9	96	1.7
Other	89.1	89	88.4	89.7	90	86.8	87.1	-2.2
6 to 9								
Academy	96.7	93.1	94.8	92.9	91.7	92.7	91.7	-5.2
ROTC	96.2	93.4	92.4	91.6	90.8	89.9	90.2	-6.2
OCT	96.7	93.9	93.9	94.2	90.5	91.8	93.0	-3.8
Other	89.8	88.6	89.3	88.2	89.9	86.3	86.8	-3.3
10 to 13								
Academy	97.4	93.7	96.1	94	88.5	85.3	85.8	-11.9
ROTC	95.4	91.1	93.2	94.2	93.2	91.1	91.4	-4.2
OCT	96.1	91.6	94.8	94.4	91	91.1	93.2	-3.0
Other	93.9	93.6	93	92.4	93.1	91.8	91.2	-2.9

SOURCE: Defense Manpower Data Center.

to the same external economic and internal force-shaping policies as officers from other sources. We see that continuation rates for those with 0–5 years of service have declined since FY94 regardless of source. For Academy graduates, continuation rates fell from a high of 98.7 percent in FY94 to a low of 96.3 percent in FY98. Continuation rates rebounded in FY98 and FY99, but did not regain the ground lost after FY94.

The annual continuation rates for those in YOS 6–9 also dropped steadily since FY94, with the largest drop being among those who entered the Air Force through the ROTC program. In FY94, the annual continuation rate for those entering via the ROTC program was 96.7 percent for those with 6 to 9 YOS (primarily O-3s). It fell to 90.2 percent in FY00. In FY00, those who had entered from ROTC represented 42 percent of all Air Force officers.

Among those in YOS 10–13, primarily O-4s, there was a precipitous drop in 1998 in the annual continuation rates of individuals who entered from the Air Force Academy. This probably resulted from the Academy having a higher proportion of pilots and a decision made in the early 1990s to extend the service commitment for pilot training to eight years after initial training, or a total of about ten years. (For the same reason, the YOS 0–5 and 6–9 continuation rates for Academy graduates were higher than they otherwise would have been.) Nevertheless, the annual continuation rate was 85.8 percent in FY00 versus 97.4 percent in FY94, a 12 percent drop. Because those entering from the Academy represent only 20 percent of all Air Force officers, the drop for all individuals in YOS 10–13 (Table 2.9) was smaller, 5.3 percent.

Table 2.12 shows the distribution of Air Force officers across 1-digit DoD occupational codes in FY99, by source of commissioning. Academy graduates are more likely to be General Officers and in Tactical Operations than are those who became officers through other programs. One reason for extending the initial pilot obligation was to keep pilots for longer periods while they were junior, which is where the bulk of the pilot force (tactical operations) are needed. Thus a 12 percent drop in the midcareer continuation rate for Academy graduates may impinge on the Air Force's ability to provide manpower to these areas.

Table 2.12
Percentage of Air Force Officers in 1-Digit DoD
Occupational Areas, by Commissioning
Sources, Fiscal Year 1999

Occupational Area	Academy	ROTC	Direct Appointment/ Other
1: General Officers	1.7	1.0	0.6
2: Tactical Operations	50.7	39.6	18.2
3: Intelligence	4.9	6.4	3.0
4: Engineering & Maintenance	12.6	18.6	11.2
5: Scientists & Professionals	5.0	5.3	8.6
6: Health Care	2.5	3.9	43.8
7: Administration	5.0	8.7	5.8
8: Supply/Procurement	7.8	11.0	6.8
9: Non-Occupational	9.9	5.6	2.1
Total	100.0	100.0	100.0

DISCUSSION

The Air Force manpower system appears to have been stressed. Symptoms include the decline in recruit quality, the decline in first- and second-term reenlistment (improving only recently), the higher loss rate for high performers, the increase in peacetime operations, and declines in officer continuation rates, especially midcareer (YOS 6–13).

The probable causes include both transitory and permanent changes: The economy had the longest period of expansion in the nation's history. The recruiting market changed fundamentally as a consequence of increased enrollment in two- and four-year colleges. For nearly two decades, the private sector sought and rewarded higher education, and the reality of higher pay for highly educated, high-ability people is likely to continue into the future. Peacetime operations have become a fixture of national security strategy, and during the late 1990s airmen were increasingly called upon for hostile missions. Why do these changes matter, and what do the changes imply for the military compensation system?

The decline in high-quality recruits is troublesome for two reasons. Research on enlisted personnel⁹ indicates that in relatively complex tasks, individual and team performance in the first term of service depends on cognitive ability. Such tasks include the operation of Patriot air defense systems (Orvis, Childress, and Polich, 1992), multichannel communications equipment (Winkler, Fernandez, and Polich, 1992), and tanks (Daula and Smith, 1992). High-ability personnel perform better in these mission-essential tasks than lower-ability personnel, and high-ability personnel raise the performance of their team. Also, data from enlisted cohorts entering service in the 1980s indicate that the average AFQT of a cohort changes little as the cohort progresses through its military service life cycle. Both high-ability and low-ability personnel leave service, causing the average ability of those remaining in the cohort to stay about the same. Therefore, when cohorts of lower quality enter, they are likely to remain lower quality, and because they are lower quality their expected first-term performance is likely to be lower. Their later performance may also be lower, but we know of no research establishing that.

We identified a 17 percent decline in first-term reenlistment and second-term retention from 1995 to 1999. This was a serious loss of personnel for several reasons. The loss of early midcareer personnel after the second term reduces the capacity to train junior personnel and reduces the pool from which to draw future enlisted leaders. The loss of personnel after the first term exacerbates this problem because it means that the number of second-term personnel available for operations and training will remain relatively small over the next few years, and perhaps beyond. This makes it harder to arrange “work-arounds” in which personnel who are less than fully ready are advanced into positions otherwise filled by experienced second- or third-term personnel. The increase in first-term retention in 2000 is, of course, a welcome improvement.

The decline in first-term reenlistment was not neutral with respect to personnel quality. The Air Force tended to keep *relatively more* of its high-ability high performers compared to non-high-ability high

⁹We do not know of studies on officers.

performers. However, high-ability high performers had a lower reenlistment rate throughout the period 1996–1999.

We examined deployments and found large increases in the proportion of first-term personnel who had long or hostile duty at some point over a three-year period prior to their reenlistment decision date. The concern was that the increase in deployments had reduced reenlistment. We found a sizable increase over the late 1990s in the number of episodes involving hostile duty among personnel who had any long or hostile duty. Overall, we found that these changes appeared to have little influence on overall first-term reenlistment rates in 1999 vis-à-vis 1996. Reenlistment appears to increase as the number of nonhostile episodes increases and tends to remain unchanged as the number of hostile episodes increases. If the pace of peacetime operations remains at its late-1990s level, we can expect to see a continued higher incidence and greater number of hostile episodes for airmen, yet with little drop in overall reenlistment.

We also identified a roughly 5 percent decline in officer annual continuation rates among those in their midcareer. Although the amount seems small at first glance, even small declines in annual continuation rates can translate into dramatic declines in manpower over a several-year period. Therefore, this decline must be taken seriously.¹⁰ Like the decline in retention rates for the enlisted force, a decline in officer continuation in midcareer represents a loss in the pool from which the Air Force draws its future leaders. We do not, however, have evidence indicating that this pool would become too small to satisfy the demand for future leaders. However, “work-arounds” will involve promoting less-experienced personnel or imposing more duties on more-experienced leaders, thereby spreading them thinner across tasks. This could adversely affect Air Force capability.

¹⁰The extent of decline varies by area. According to Lt. Gen. Peterson’s statement, the Air Force “has difficulty retaining officers with skills that are in high demand in the private sector” such as pilots, scientists, engineers, and communications and computer systems officers.