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TESTIMONY

Deployment, Retention, and Compensation

JAMES HOSEK

CT-222

March 2004

Testimony presented to the House Armed Services Committee, Subcommittee on
Total Force on March 24, 2004

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Statement of Dr. James Hosek¹

**Before the Committee on Armed Services, Subcommittee on Total Force
U.S. House of Representatives**

March 24, 2004

Mr. Chairman, members of the subcommittee, thank you very much for the opportunity to testify before you. My testimony speaks to two areas of continuing importance and current concern. These are the relationship of military deployment to the retention of military personnel, and the comparability of military compensation to civilian compensation. The testimony focuses on active duty personnel and draws on recent, published work done at the RAND Corporation by my colleagues and myself. I'll begin with two main points then discuss deployment and compensation more fully.

First, perhaps the most striking observation I can make about the effect of deployment on retention is that active duty personnel have shown themselves to be highly resilient to the demands placed on them by deployment. Although we must carefully consider the differences between the current level and type of deployment and those in the past in making any assessment, the analysis of past data at least gives us a starting point, namely, that deployments typically did not decrease retention and in many cases increased it.

Second, keeping military pay competitive with civilian pay is an ongoing process. The slippage in military pay that occurred in the late 1990s was fixed by the passage of the National Defense Authorization Act of FY2000 and subsequent pay legislation. Fortunately, these actions took effect before 9/11, the war on terrorism, and the operations in Afghanistan and Iraq. The increases in military pay shored up the active duty personnel system before the heavy demands now being placed on military personnel. If nothing else, this is a reminder that we should be even more vigilant than in the past in keeping military pay competitive from year to year.

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Deployment

Our analysis of deployment and retention is based on data from 1993 to 1999. The data allowed us to identify two broad classes of activity away from home station depending on whether or not they involve hostile duty at some point. Hostile duty is duty in an area or circumstance involving imminent danger, for instance, the operations in Haiti, Somalia, and peacemaking and peacekeeping in Bosnia and Kosovo. Non-hostile duty may involve unaccompanied tours abroad, sea voyages in non-hostile waters, disaster relief, humanitarian aid, nation building, combined exercises, or courses for professional military education, for example. For brevity, I call these hostile deployments and non-hostile deployments, respectively.

In the analysis, we counted the number and length of each member's hostile and non-hostile deployments over a three-year period preceding the reenlistment decision.

Let me briefly state the findings of the analysis.

- Hostile deployments had little effect on the reenlistment of first-term personnel, compared with personnel having no such deployment
- Hostile deployments were associated with a higher level of reenlistment for second-term personnel.
- Non-hostile deployments typically increased first-term reenlistment above that of non-deployed personnel.
- This pattern was even more evident for second-term personnel.

I also want to mention that a companion study on officers found similar relationships between deployment and officer continuation rates.

In the current policy context, the significance of non-hostile deployments lies in the fact that many personnel who have hostile deployment also have non-hostile deployment. Given the different effect on reenlistment of hostile and non-hostile deployment, it is useful to include both types of deployment in assessing how the current pace of deployments affects retention.

A key question is what the past findings tell us about the impact of today's deployments. To address this question, I would like to present two tables, one for first-term reenlistment and the other for second-term reenlistment. The tables show the predicted probability of reenlistment, expressed as a percentage. Predictions are made for different combinations of hostile and non-hostile deployments for a service member with given characteristics, e.g., military specialty, education level, and Armed Forces Qualifications Test (AFQT) score category. The levels of reenlistment in the tables might be higher or

lower than you expect, and had we chosen different characteristics reenlistment would be higher or lower than shown. But the pattern of reenlistment across the different combinations of deployments would remain much the same. Therefore, the tables are a way of allowing us to ask how an increase in hostile deployments, non-hostile deployments, or both, would affect reenlistment.

Compared with the 1990s, there are undoubtedly more deployments today. The increase in deployments takes two forms: some members who were already deployed can expect a second or even a third deployment, and some members who had no deployment will now have one or two deployments or possibly more. This difference in the way deployments are added is crucial to understanding how an overall increase in deployments will affect retention.

Looking across the entries in Table 1 for first-term reenlistment:

- As we add a second hostile deployment to someone with one hostile deployment, in most cases reenlistment increases though in a few cases it decreases
- As we add a first hostile deployment to someone with no hostile deployment, reenlistment increases in the Army and the Marine Corps. But the pattern is more complex for the Navy and the Air Force: reenlistment increases if there is no non-hostile deployment, and it decreases if there are one or two non-hostile deployments.
- Finally, if we start with no deployments and add one each of hostile and non-hostile, reenlistment increases.

The implication is that the overall effect on retention in a service depends on how deployments are added. For first-term service members who are now deployed but would not have been at the 1990s pace of deployment, we can expect an increase in reenlistment. Also, where the services can take steps to share the burden of deployment—so that members with one or two hostile deployments also have some non-hostile deployment—reenlistment is likely to be higher. For instance, the Army’s recently launched program to retrain some ground forces as security personnel will reduce the pressure to re-deploy personnel in the military police occupational specialty.

I want to caution that few personnel had three or more deployments. As a result, the predicted reenlistment rates may not be representative of what we would find today. Still, as the table shows, predicted reenlistment is lower in the Army and the Marine Corps for three or more hostile *and* three or more non-hostile deployments than for lesser combinations of deployment. Even so, the predicted reenlistment for even the most heavily deployed personnel was higher than that for personnel with no deployment.

Table 1
Predicted First-term Reenlistment Probability (Percentage)*

Service	Non-hostile	Hostile deployments			
	deployments	0	1	2	3+
Army	0	36	43	44	45
	1	47	53	50	61
	2	53	59	67	58
	3+	58	66	65	49
Navy	0	37	39	40	50
	1	43	38	40	49
	2	42	38	39	45
	3+	49	42	47	46
Air Force	0	36	38	36	38
	1	49	46	45	48
	2	55	49	50	58
	3+	50	52	55	49
Marine Corps	0	17	18	18	16
	1	18	19	18	26
	2	19	21	18	24
	3+	23	25	17	17

*Member has high school or some college, AFQT IIIA, electrical or mechanical equipment repairer, white, male, with dependents, unemployment rate at prior reenlistment was 6.6 percent, current unemployment rate was 4.9 percent, year of reenlistment decision was fiscal 1999.

Table 2**Predicted Second-term Reenlistment Probability***

Service	Non-hostile	Hostile deployments			
	deployments	0	1	2	3+
Army	0	38	48	52	47
	1	49	57	60	44
	2	50	58	55	32
	3+	53	55	83	38
Navy	0	67	76	86	90
	1	79	80	87	90
	2	81	81	87	84
	3+	87	89	92	83
Air Force	0	49	54	56	56
	1	58	60	63	67
	2	56	62	58	70
	3+	57	65	87	62
Marine Corps	0	30	39	58	46
	1	40	53	52	60
	2	49	65	74	30
	3+	63	66	46	30

* Member has high school or some college, AFQT IIIA, electrical or mechanical equipment repairer, white, male, with dependents, unemployment rate at prior reenlistment was 6.6 percent, current unemployment rate was 4.9 percent, year of reenlistment decision was fiscal 1999.

The predictions for second-term personnel differ from those for first-term personnel. A look at Table 2 shows that:

- Second-term reenlistment tends to increase with one and two hostile deployments. Then with three or more deployments, the increase tapers off, as in the Navy and the Air Force, or reenlistment decreases toward the reenlistment level of non-deployed personnel. If we compare this with first-term personnel, they had little increase in reenlistment as hostile deployments increased.
- Second-term reenlistment also tends to increase with non-hostile deployments if there are only zero or one hostile deployments. But this pattern weakens for two hostile deployments, and it tends to reverse for three or more hostile deployments. In other words, when second-term personnel are heavily deployed and have more non-hostile deployments on top of hostile deployments, their reenlistment tends to decline below the higher levels seen at one or two hostile and one or two non-hostile deployments.
- By implication, adding a first or a second deployment of either type to second-term personnel can be expected to increase their reenlistment rate. But adding multiples of both types of deployment can be expected to depress it. Again, the overall effect of deployment on retention will depend on how the burden is shared across the force.

As we set out to do our analysis, a number of service members mentioned that deployment could interfere with a member's progress toward promotion. To qualify for promotion, members must acquire and demonstrate skills and knowledge in their specialty. This human capital is gained partly in formal training, partly in on-the-job experience, and partly through self-instruction in career development courses. The concern was that intense, mission-related activity during a hostile deployment would slow promotion. We therefore examined this issue carefully. Our analysis revealed very little impact of hostile deployment on the time to E-5 promotion, as measured in months from the date of entering military service. Non-hostile deployment actually reduced time to E-5 promotion by a small amount. We further found that time to E-5 promotion had small, mixed effects on first- or second-term reenlistment. Our findings led us to conclude that although deployment might affect the promotion progress of particular individuals, by and large it had little effect on a typical member's expected time to promotion or reenlistment.

To this point, I have talked about the number of deployments, but the duration of deployment also makes some difference. Longer separations from family and friends reduced reenlistment somewhat for first-term personnel on hostile deployments. This was noticeable in the Navy, where deployments involving hostile duty averaged nearly six months and ranged to over eight months. However, this was

not the case for second-term personnel. For them, the length of deployment was not related to reenlistment.

The findings I have just described come from 1990s data. I think it is likely that many of the lessons that can be drawn from the 1990s data also apply to the current era. But there is no denying the higher pace of today's military operations, the different and significant level of day-to-day danger, and the prospect of deployments continuing at a high rate for at least another year or two. There are also other factors to take into consideration, such as the increase in deployment-related pay and the development of programs to smooth the post-deployment reunification of members with their families. Viewed all together, the differences between the 1990s and now suggest that the relationship between deployment and retention could be different today. Needless to say, it would be helpful to conduct new analyses as soon as data are available.

Yet even though the context of deployments has changed, it is my impression that the underlying reasons for why deployment affects reenlistment have not changed, and that is why I think the past remains relevant to the present. I would like to take a moment to review a few of those reasons here.

Of fundamental importance is the role of individual choice. In our military of volunteers, individuals select the service they prefer and, though to a lesser extent, they select the occupational area in which they will train and serve. For instance, Marines and Army personnel in combat specialties know that they must be ready to operate under fire and camp in mud or sand. Navy personnel in sea ratings know they will be going to sea and have chosen that course. That choice presumably helps them bear up under the many preparations necessary to ready a ship for deployment and the round-the-clock schedule of duty and watch when underway. Air Force personnel who enter maintenance or supply specialties typically know their roles are crucial, and that they will typically operate at bases or facilities to the rear of the combat line. Generally speaking, it is their choice to be in those circumstances.

Personnel have preferences about deployment. Based on conversations I've had with service members, many members have a positive attitude toward deployment and view it as an especially meaningful way to fulfill their duty to their country. In this regard, it is useful to differentiate between the amount of deployment a member prefers, the amount the member expects given his or her service, specialty, and current circumstances, and the amount the member actually gets. One possible reason why reenlistment is higher for members with some deployment than with none is that most members prefer some deployment. Those who prefer but do not have deployment may revise their expected level of satisfaction from staying in the military down.

There are limits. Members may prefer some deployment to none, but also prefer not to have frequent, lengthy deployments that take them away from home for much of the year—either because they

are deployed or because they are preparing for deployment. We can see the presence of such limits in the tendency for first-term reenlistment to decline as the length of a deployment increases. Among second-term personnel, we saw that reenlistment tends to decline for members with multiple hostile and non-hostile deployments.

In our theoretical models of deployment and reenlistment, we also consider the possibility that members care about the predictability of deployments. How frequently will they occur, when will a deployment begin, and when will it end? Knowing helps members and their families make plans, and uncertainty or last minute changes can be frustrating. To be clear, this is a statement about the member's preferences. From the service's perspective, uncertainty surrounds when contingencies will occur, what roles and missions will be required to respond, how the situation will evolve, and how to allocate resources to a contingency while maintaining the capacity and presence to meet other national security commitments. Bottom line: the member will have to live with some uncertainty, and the service should do what it can to keep it to a minimum.

Finally, deployment-related pays, family support programs, the opportunity to stay in touch with family members, the regular delivery of mail, the assurance that the family's health care needs will be taken care of, and so forth, are all factors that can ease the stress of being away from home.

Compensation

The National Defense Authorization Act (NDAA) of 2000 represented a major step in restoring the comparability of military pay to civilian pay. During the 1990s, as the economy grew and boomed, military pay lost ground, and military manpower conditions became acute in 1998 and 1999 as the services struggled to meet their overall recruiting goals, let alone their quality goals. Retention problems also appeared. These were not as electrifying as the recruiting situation, but the services were hard pressed to hold onto trained, experienced personnel in a number of technical fields. NDAA 2000 mandated a significant increase in basic pay. It committed the nation to a series of higher-than usual pay increases through FY2006. It targeted larger pay increases on mid-career personnel to strengthen the gains from early promotion to higher grades, and it increased enlistment and reenlistment bonus budgets. It enabled the services to give more generous educational benefits to recruits in hard-to-fill specialties, supplementing those of the Montgomery GI Bill. Finally, in effect it restored the level of retirement benefits for personnel entering service since August 1986 to par with the retirement benefits of personnel entering before them, thereby removing an inequity that was becoming a flash-point issue.

By restoring military pay through the actions in NDAA 2000 and subsequent pay legislation, the nation shored up the military personnel system before it had to face the demands of the war on terrorism

and the military operations in Afghanistan and Iraq. Our analysis of the early effects of NDAA 2000 concluded that its set of pay increases helped to turn around recruiting and retention. Recruiting and retention have also been aided in the past two years by the unexpectedly slow growth of civilian jobs as the economy recovers from the let down at the end of the boom.

The increase in the pace of deployments during the 1990s and especially the last few years has spurred increases in deployment-related pay. Members deploying to a designated combat area can expect to receive hostile fire/imminent danger pay and combat zone tax exclusion, and members with dependents also receive family separation allowance. Effective October 2002, hostile fire pay increased from \$150/month to \$225/month, and family separation allowance increased from \$100/month to \$250/month. An E-4 with three to four years of service now receives basic pay of \$1,726.80/month or \$20,745.60/year. Assuming the E-4 has a 20 percent average tax rate, a six-month deployment to a combat zone would shelter \$2,072 from taxes. Hostile fire pay, also excluded from tax, would total \$1,350, for a grand total of \$3,422. An E-5 with six to eight years of service has basic pay of \$2,130.60/month or \$25,567.20/year. If the E-5 has a 20 percent tax rate and is married, a six-month deployment shelters \$2,557 from tax, hostile fire pay is \$1,350, and family separation allowance is \$1500, for a grand total of \$5,407.

In my view, the philosophy behind these pays seems appropriate. Receipt of the pays is contingent on deployment or, in the case of family separation allowance, a separation of at least 30 consecutive days. The increase in deployment-related pays implicitly represents a strengthening commitment by the nation to compensate personnel for the rigors and dangers they face when deployed. This evolving system of contingent pays has several advantages: it targets the pays on those who deploy, links the amount of pay to the duration and dangers of deployment, and indirectly insures all personnel of being compensated if and when they deploy. An alternative approach of raising pay across the board would, I think, be less effective. It would either cost more overall, or it would spread a given deployment pay budget over a larger number of people, all of whom bore a potential risk of deployment but only some of whom in fact would be deployed. Those who were deployed would feel under-compensated, particularly so if their deployment was unusually long, dangerous, or had poor living conditions.

How effective are the deployment pays? The answer is, we do not know. This is because until recently the levels of deployment pay did not change, or changed little, and so there was no variation with which to judge whether they led to higher retention or lower levels of stress for members and their families. As new data become available, it may be possible to make some estimates.

Turning to the comparison of military and civilian pay, we made comparisons using a measure of military cash pay that includes basic pay, basic allowance for subsistence, basic allowance for housing, and an adjustment for the non-taxability of the allowances. This is called regular military compensation.

On average, RMC accounts for upwards of 90 percent of a member's cash pay and therefore provides a good overall guide to most members' pay. We compared enlisted personnel with full-time civilian workers with some college, and officers with full-time civilian workers with four or more years of college. The comparisons are for 2002.

Let me also say at the outset that although we think the measure of military pay is good, it is not perfect. For instance, special pays and bonuses may represent a larger fraction of cash pay, e.g., for aviators, nuclear trained personnel, and physicians. Also, the measure may be too narrow because it does not account for benefits such as military health care, childcare, or the implicit accrual of retirement benefits. On the down side, the measure of cash pay is arguably not accurate for junior personnel living in barracks or in cramped quarters on ships. They may well value their quarters at far less than the housing they would choose under BAH if given the choice. The pay comparison also does not adjust for the fact that military personnel may work long hours. It is likely that military hours of work per week are usually high at the present time because of the high operating tempo and level of deployments, and orders to stay late may be given at the last minute as new work comes in.

Given that civilian pay can differ considerably by occupation, we designated three groups of occupations defined with respect to their use of information technology. The first group, IT-core occupations, includes programmers, system administrators, people who build and maintain computer networks, and the like. The second group, IT-related occupations, includes occupations that are highly reliant on information technology, e.g., intelligence gathering, radar/sonar/air control, mathematicians, scientists, engineers, accountants, and so forth. The third group, non-IT occupations, is the remainder, though we realize that nearly every occupation uses IT in some way. We assigned military occupations and civilian occupations for each group, and we made comparisons for different education levels and by gender. About 80 percent of enlisted personnel are non-IT, 14 percent are in IT-related, and 7 percent are in IT-core.

We found that RMC for most male enlisted members was about at the level of the 70th percentile of civilian wages, and for most male officers it was above the 70th percentile. This may be seen in the upper panel of Figures 1 and 2. (The corresponding figures for women are appended.) In the figures, the family of upward-sloping curves shows civilian wages at the 10th percentile through the 90th percentile.

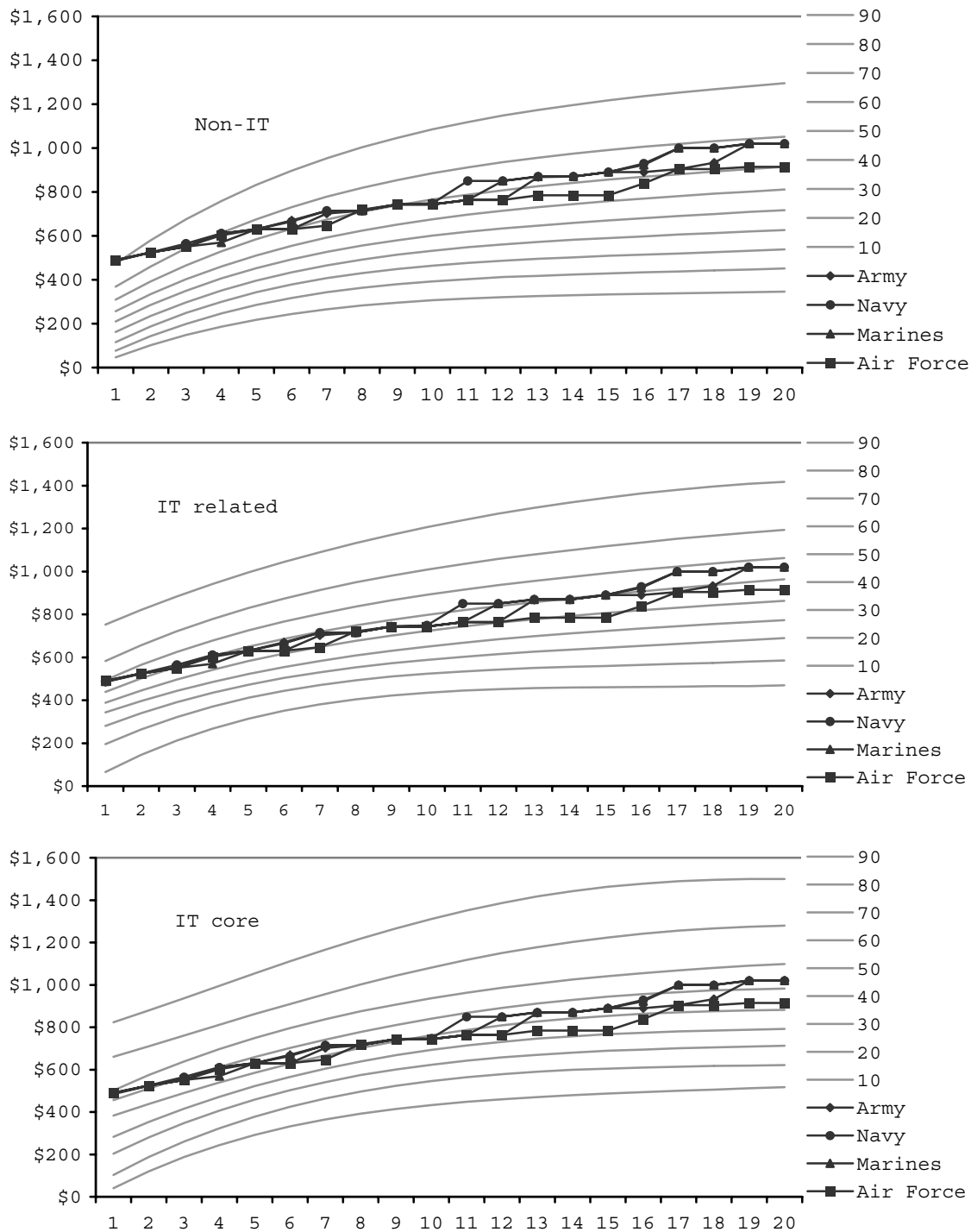


Figure 1—Weekly Civilian Wage Percentiles for Men with Some College and Regular Military Compensation for Enlisted Members, by Service and IT Group, FY 2002

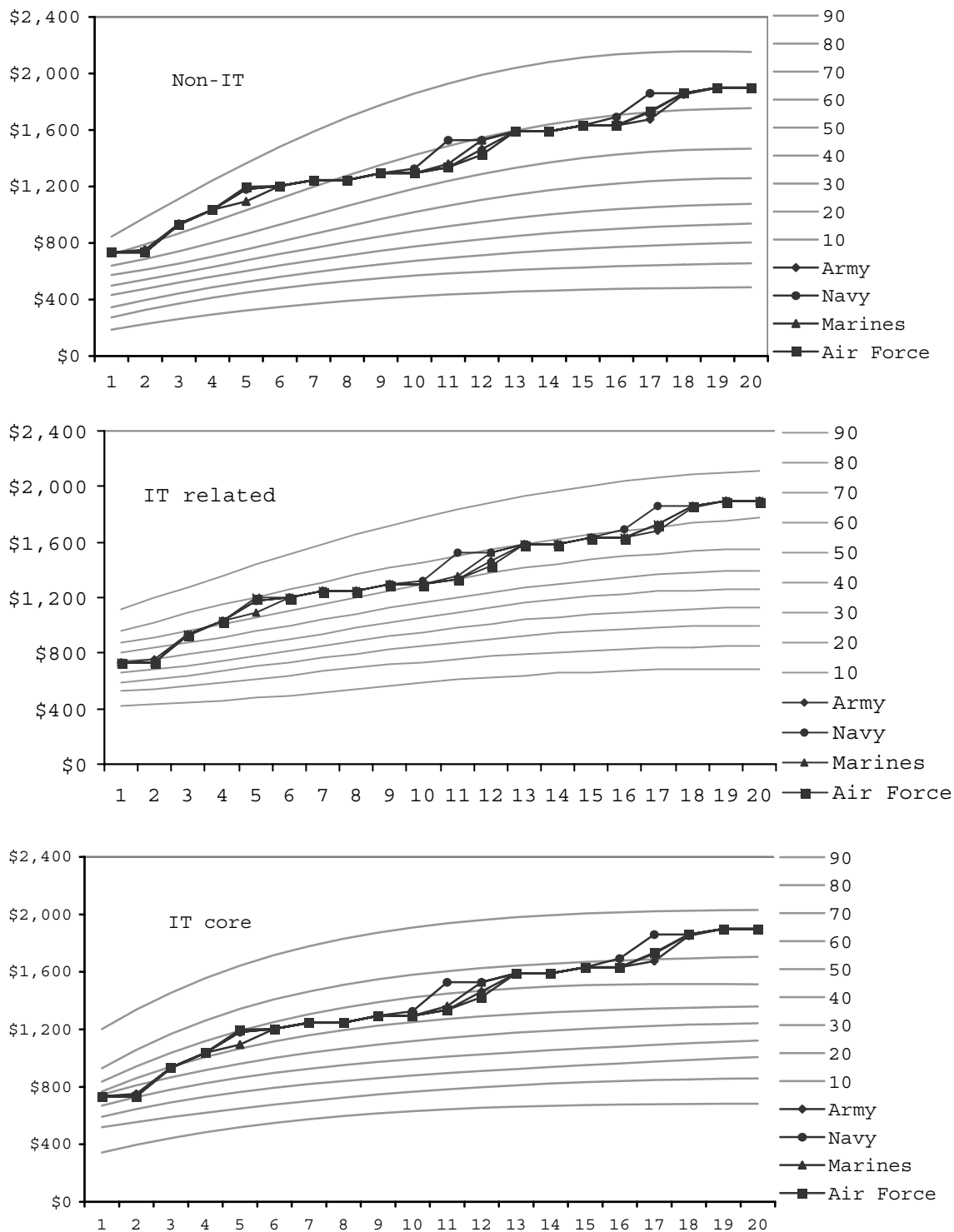


Figure 2—Weekly Civilian Wage Percentiles for Men with Four or More Years of College and Regular Military Compensation for Officers, by Service and IT Group, FY 2002

The darker lines are RMC computed separately for each service. The RMC lines are quite similar across the services, with differences arising only from differences in promotion rates.

Military pay at the 70th percentile may appear high relative to civilian pay, but it is not. On the whole, military pay is at the level required to attract and keep high quality, well-trained personnel. As we saw in the late 1990s, erosion in military pay of only a few percentage points from competitive levels can threaten the supply of personnel.

The lower panels of Figure 1 present pay for IT-related and IT-core occupations. Military pay is clearly lower relative to civilian pay in these occupations—that is, the RMC lines lie on lower civilian wage curves. In IT-core, for instance, RMC is around the 50th percentile.

Surprisingly, the relatively lower military pay in IT-type occupations did *not* lead to poorer recruiting and retention. In fact, IT personnel outcomes were good. Recruit quality was considerably higher, recruits signed on for somewhat longer terms of service, attrition was lower, and reenlistment rates were about the same in IT versus non-IT. Thus, the services were successfully competing for IT enlisted personnel even during the peak of the dot-com boom. We suggest that the reason for this is the value and transferability of the technical training and experience provided in the military. The findings further suggest that many young men and women join the military not only to serve their country, but also as a stepping-stone to an occupation. Like the notion of volunteerism itself, the value of training and experience offered by the military is one of the anchors that helps to sustain recruiting and retention when optempo is high and risks are real.

Again, thank your for the opportunity to address the subcommittee. I would be pleased to take questions.

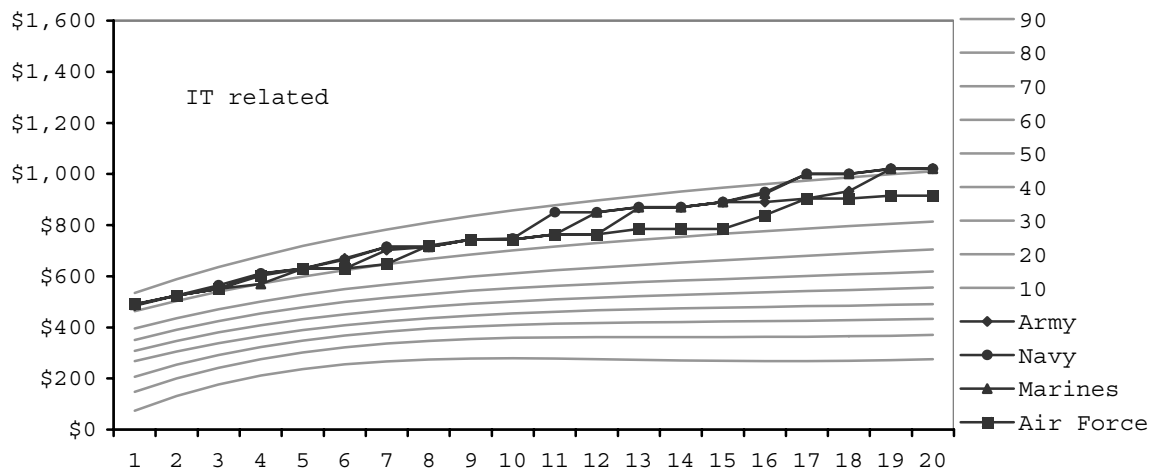
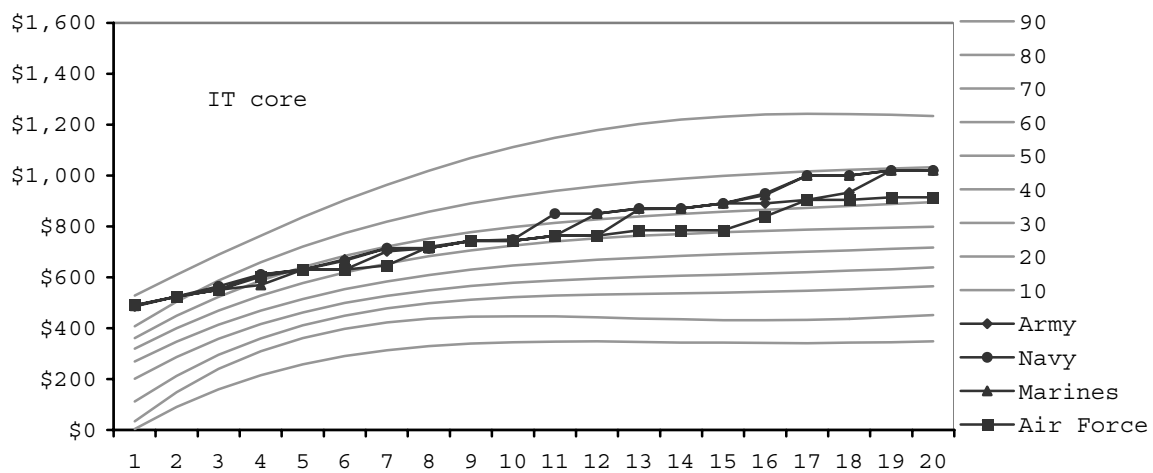
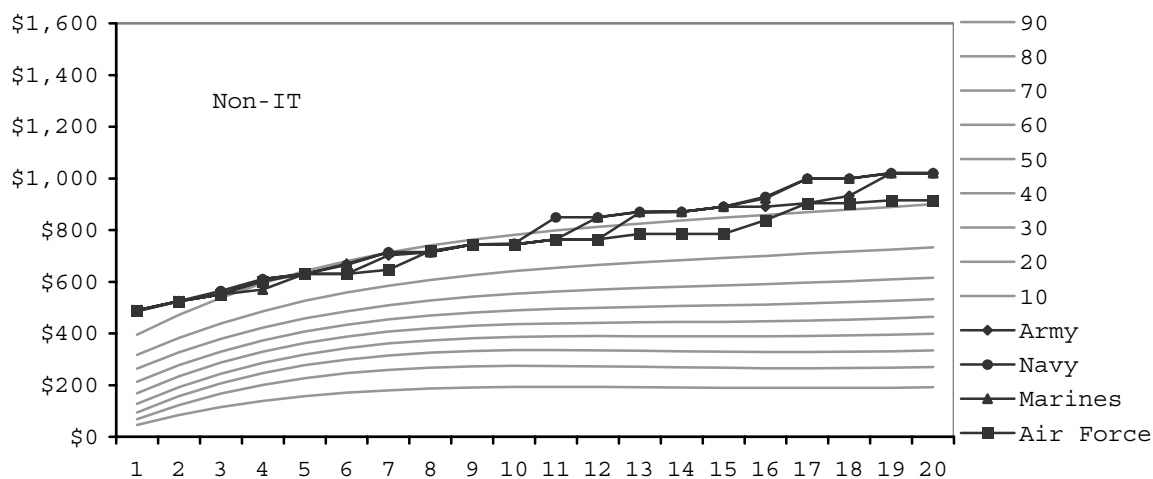


Figure 3—Weekly Civilian Wage Percentiles for Women with Some College and Regular Military Compensation for Enlisted Members, by Service and IT Group, FY 2002

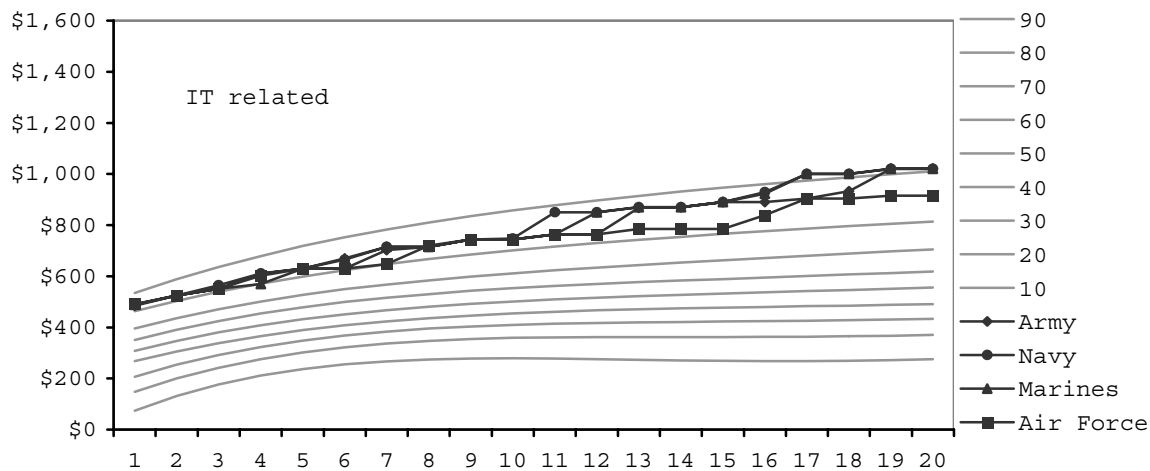
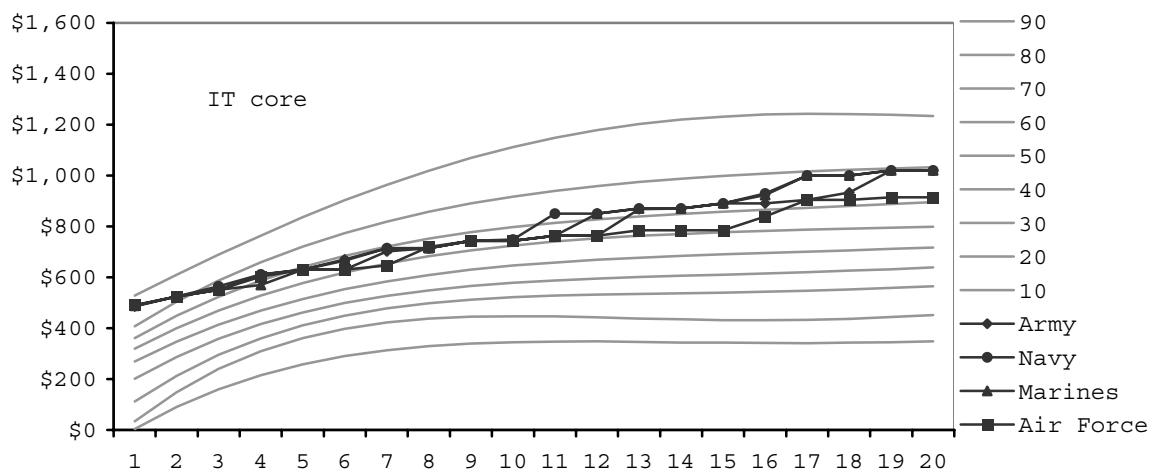
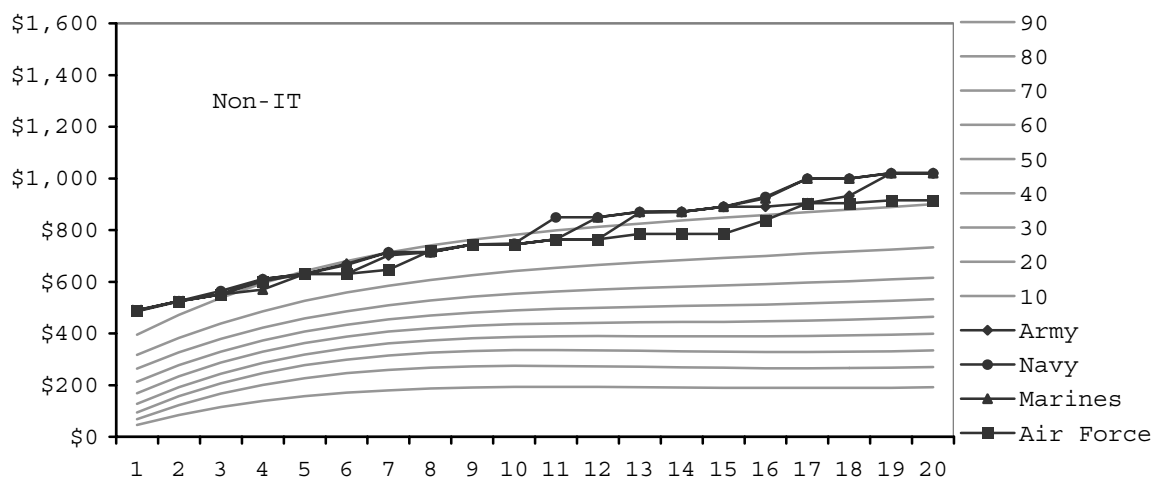


Figure 3—Weekly Civilian Wage Percentiles for Women with Some College and Regular Military Compensation for Enlisted Members, by Service and IT Group, FY 2002