

T E S T I M O N Y

RAND

*Military Compensation:
Testimony Presented to the
Senate Armed Services Committee
Subcommittee on Personnel*

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TESTIMONY OF DR. JAMES HOSEK

RAND CORPORATION

March 3, 1999

Let me begin by thanking you for the opportunity to discuss military compensation before your Committee. The testimony of my colleague, Dr. Beth Asch, and myself concerns our research into military/civilian pay trends and options to increase military compensation, and we hope our testimony will succeed in adding useful information to your deliberations. I will address my remarks to military/civilian pay trends and other factors that can affect military manning, and Dr. Asch will speak to the effects and costs of alternative compensation proposals.

Military pay is a vital element in assuring that our nation has the quantity and quality of personnel it needs for national security. Recently, however, we have seen signs of duress in several key indicators of military personnel supply. The Navy fell short of its recruiting goal last year by 7,000 recruits, and the Army appears headed for a recruiting shortfall this year. Although recruit quality remains high and compares well with the peak quality years at the turn of the decade, the current recruiting difficulty may foretell a decline in recruit quality and an increasingly costly effort to obtain each additional recruit. Adding to the

challenge, recruiting goals have been rising in the Army and the Navy from the low levels that prevailed during the drawdown. Also, first-term continuation rates have declined moderately in the Navy, Marine Corps and Air Force, and first-term attrition has risen markedly in the Army. These changes in continuation make it more difficult for the services to meet their career manning requirements. The Army, in particular, would like to increase its career content, but its high attrition rate impedes progress toward that end. Second-term continuation rates appear fairly steady, however the Army's rate, unlike the other services, has remained lower than its 1990-91 level. In addition, pockets of shortage exist in specific military occupations, for instance, information personnel and fixed-wing pilots.

The slippage in recruiting and retention is serious and deserves attention. To find out what role military pay has played in creating this situation, we have made a number of military/civilian pay comparisons. These comparisons control for the fact that the military has a much different composition than the labor force at large. This difference in composition matters because civilian wages grow at different rates for different segments of the labor force. We have therefore constructed a civilian wage index appropriate to the military population. We call our index the Defense Employment Cost Index, or DECI. The base year for the comparisons we present is 1982.

The key findings of our pay analysis are the following:

- The pay gap for officers is approximately 20 percent. This means that for officers, civilian pay has grown 20 percent faster than basic pay since 1982.
- The pay gap for junior enlisted personnel is a *positive* 8 percent, meaning that basic pay has risen 8 percent faster than civilian wages since 1982. (We define junior personnel as those with 5 or fewer years of service.)
- The pay gap for senior enlisted personnel is 5 percent. That is, basic pay has risen 5 percent slower than civilian wages since 1982. (Senior enlisted personnel have more than 5 years of service and, we assume, have the equivalent of some college but less than 4 years.)
- During the current economic boom, the pay gap for junior and senior enlisted personnel has worsened by about 6.5 percent, and the pay gap for officers has worsened by over 10 percent.

The remarkable range of DECI-based pay gaps across officer and enlisted personnel reflects the profound supply-and-demand adjustments that have occurred in the labor market over the past two decades. The gap for officers, -20 percent, differs from the gaps for enlisted personnel mainly because civilian wages have grown far more rapidly for college-educated workers than workers with less education. Among enlisted personnel, the pay gap for junior enlisted, +8 percent, differs from that of senior enlisted, -5 percent, for two reasons: civilian wages have

grown more rapidly for persons with more work experience, and senior personnel are assumed to have some college. The assumption that senior personnel have some college recognizes the formal education and training required in higher NCO positions.

We draw several observations from these findings. First, the difference in pay gaps between junior and senior enlisted personnel is troubling. Whatever compensation edge junior personnel enjoy is reversed as they look ahead to the prospect of remaining in the military and making the investments necessary to advance through the ranks. That is, the +8 percent gap drops to a -5 percent gap, a swing of 13 percentage points. This difference actually had emerged by the mid-1980s and the services have coped with it, but we believe it will be advantageous to modify the pay table to strengthen the incentives for capable personnel to continue in service and make the effort required for advancement to leadership positions.

Second, we believe that the worsened pay gap during the current economic boom has undoubtedly placed downward pressure on retention, compared to the situation in 1993 at the outset of the boom. But in contrast to our estimates, the usual estimate of the pay gap, which is based on the Employment Cost Index (ECI) has fallen by only 1.5 percent. Therefore, it has hardly detected the effect of the boom. We tend to trust the DECI estimates because previous research has shown

that DECI-based pay gaps do a good job of tracking changes in recruit quality, first- and second-term reenlistment, and officer continuation in the critical 7-11 year of service range. By comparison, the ECI-based pay gap does not track recruiting or retention.

Third, it may seem puzzling that the services should have difficulty in recruiting if indeed there is no pay gap for junior enlisted personnel, as we find. But the pay gap assumes one has a job. Since 1993, the unemployment rate has fallen by an astounding 29 percent and now stands at the lowest level in a quarter century. The unemployment rates for young workers are down, too. The low unemployment rates make it much easier for a young man or woman to find an acceptable job, and by implication, their expected earnings have risen. Also, since a college education now brings higher wages, many high school graduates are heading for college. This reduces the size of the recruiting pool. In addition, the higher recruiting targets in the Army and the Navy are adding to their recruiting stress.

Finally, with respect to officers, the 20 percent pay gap means that whatever military pay advantage they might have had in 1982 has been considerably dissipated. This may be a reason why the officer personnel covered under the REDUX retirement system have been so dismayed with its benefits. We recognize

that the benefit inequity between the REDUX generation and its immediate predecessor, the High-3 generation, has also been a source of aggravation.

Pay is a tool in helping the services attract, retain, and motivate the caliber of personnel they need for meeting their manning requirements. However, pay is by no means the only factor that affects recruiting and retention. In particular, the heightened pace of military operations in the post-Cold War world has engaged many personnel. According to our estimates, one-third to two-thirds of personnel had some long or hostile duty during a two-year window in 1993-1995. We were concerned that this rate of personnel usage would have a negative effect on retention. Our estimates, however, show the opposite for most personnel.

We find that long or hostile duty at the level and kind experienced in 1993-1995, increased first-term reenlistment in the Army and Marine Corps, had little effect on first-term reenlistment in the Navy and Air Force, and increased reenlistment among early career personnel. (We define early career as beyond the first term and with 10 or fewer years of service.) The positive effect on first-term reenlistment was largest for the Army. These generally positive effects may help explain why reenlistment has declined only moderately, despite the significant worsening of the pay gap and strong improvement in the unemployment rate during the boom.

Our analysis also shows, however, that additional long or hostile duty, if placed on personnel who have already had such duty, can ultimately reduce their reenlistment. This is an important caveat to keep in mind as the nation continues to rely on peace operations as an element of its national security strategy.

Moreover, we realize that many other aspects of deployments deserve study; our analysis is only a first step.

This concludes my statement. Now my colleague Beth Asch will discuss her assessment of options for increasing military compensation. I would be happy to answer your questions either now or after Dr. Asch's testimony.

TESTIMONY OF DR. BETH J. ASCH, RAND CORPORATION

Mr. Chairman, I am pleased to be here today to discuss RAND's assessment of proposals to change military pay and retirement. In my statement this morning, I will briefly describe the criteria and the methods we used to assess the proposals, summarize the proposals we evaluated, and highlight our main findings.

The major criterion we use in considering the merits of different proposals is cost-effectiveness. We measure effectiveness in terms of personnel retention and performance. That is, we examine how a pay proposal will alter the rate at which members choose to stay in the military and how it will change the financial rewards associated with better performance. The other part of our criterion is cost, and we measure cost in terms of basic pay and retirement accrual costs. We do not incorporate equity considerations or the morale effects of different policy options, although we recognize their potential importance.

To assess cost-effectiveness, we built a steady state model of the Army enlisted force that provides estimates of the retention, cost, and performance-incentive effects of each proposal relative to the current pay table and the REDUX retirement system. Although the model is for the Army, we would expect results for the other services to be similar.

At the request of OSD in autumn 1998, we evaluated several policy options with our model:

- Rollback to “High-3,” the system that covers those who entered military service between 1981 and 1986.
- REDUX with a matching contributory Thrift Savings Plan (TSP).
- A 2.25-percent across-the-board pay raise, a raise that would be in addition to the one needed to keep military and civilian wage growth in pace.
- Increased Selective Reenlistment Bonuses (SRB).
- A targeted pay raise: Members in E-1 to E-4 would receive no raise above the raise needed to keep pace with civilian pay growth; those in E-5 to E-9 would receive an additional 2.5-percent raise.

The specific across-the-board and targeted pay raises and the SRB multipliers were chosen to produce roughly the same gains in overall retention as the rollback to the High-3 option.

Before discussing the main findings, it’s useful to note three general results from our analysis that provide some guidance in setting military compensation policy.

- Pay raises targeted to the senior grades improve productivity incentives because they increase the financial returns associated with promotion. To the extent that the promotion system successfully identifies the most-productive and best-performing personnel, a targeted system increases the incentives for members to work hard and effectively, and motivates the best performers to stay in the military.

- Targeted pay raises have the advantage of directly funneling resources precisely to the personnel whose pay growth relative to the civilian sector has been the weakest—the senior personnel.
- Pay raises are more cost-effective in increasing military retention than changes to the military retirement system because the typical service member, who is relatively young, heavily discounts future retirement benefits.

Turning now to specific results, we find that moving from REDUX to the more generous High-3 retirement system would raise retention by 4 percent and would raise costs by 6 percent. These results apply to the steady state when all personnel have been under the new retirement scheme their entire career. We also find that offering a TSP option is not as cost-effective as the High-3 option when effectiveness is measured in terms of retention. Costs would rise by more than the High-3 option but retention would rise only slightly. The retention effect is small because the expected value of the benefit is relatively small for the typical enlistee. Although TSP benefits are portable in the sense that individuals who leave service will continue to earn a rate of return on their fund until the withdrawal age of 59 1/2, these returns will be heavily discounted. Furthermore, based on the experience of those covered by the Federal Employees Retirement System (FERS) who are similar in age, few Army enlisted members would contribute to the TSP, and of those who do, the percent of pay contributed would be small. Nonetheless,

personnel costs rise significantly because the government discounts future costs at a much lower rate than the typical enlistee discounts future benefits.

Consistent with the general result about the relative cost-effectiveness of a pay raise over a retirement system change, we find that the 2.25 percent across-the-board pay raise would cost less. This is the raise that by design would produce the same retention effect as the High-3 option. Increasing reenlistment bonuses would be even more cost-effective. However, bonuses have the disadvantage that they can be varied frequently, or even eliminated in the future, which can add uncertainty to a member's future compensation profile and can therefore adversely affect retention and productivity.

Among the options we consider in this exercise, we think the targeted pay raise is the most cost-effective overall. It would produce the same retention effect as the rollback to High-3 and the across-the-board pay raise options, but would cost less. Furthermore, it's the most cost-effective option in terms of performance incentives because pay raises targeted toward senior grades increase the returns to promotion and therefore performance.

None of the above options would address a long-term problem associated with the current military compensation system—limited flexibility. The current system hampers the services' ability to easily and quickly reshape the grade and experience mix of their forces because the retirement system creates “golden handcuffs” for members in their mid-career. Thus, the current system prevents the separation of these personnel when it's desirable to do so. It also hampers

flexibility because the “one-size-fits-all” nature of the pay table and retirement system generates the same general retention patterns and therefore the same general grade and years of service mix across services and occupational areas, despite potential differences in the desired profiles and career lengths across areas.

To address these flexibility problems, the targeted pay raise, the best option that we considered, should be coupled with a well-funded system of separation pay like the VSI/SSB program used during the drawdown of the early 1990s. Separation pay addresses the “golden handcuffs” problem and could facilitate more variable careers across occupational areas and services as well if the pay were varied across services and occupational areas. If pockets of shortfalls still exist, the best option would also include additional funds for Selective Reenlistment Bonuses and special pays—two policies that are extremely cost-effective in terms of retention.

Finally, we believe the best option would include additional recruiting resources to address the ongoing recruiting problems now facing the services. The vast majority of potential recruits will give little weight to pay raises that will occur later in their military careers, or perhaps even beyond the first term, and almost no weight to changes in the retirement system. Furthermore, pay raises are not the most cost-effective recruiting policy because they are paid to low-quality recruits and to high-quality recruits who would have entered the military without them—not just to new high-quality recruits. Therefore, we suggest supplementing

the targeted pay raise option with resources focused on recruiting, such as increases in recruiters, advertising, and educational benefits.

Subsequent to our analysis last autumn, DoD in December 1998 proposed a three-part change to the military compensation system: a 4.4-percent across-the-board pay raise, an even higher raise to some grade and years of service combinations, and an increase in retirement benefits for personnel under REDUX.

We find that the proposed pay raises are consistent with what we consider to be the best option—the targeted pay raise. The raises keep pay competitive in the junior enlisted ranks by providing pay growth that outpaces the recent growth in civilian wages, and they address the pay gaps for more senior personnel by providing even higher pay increases for noncommissioned and mid-grade officers. Also, because the proposed raises vary by grade and experience level, they will change the structure of the pay table by providing promotion raises that generally exceed longevity raises, which will strengthen incentives for performance.

We estimate that the new pay table, together with the proposed changes to the military retirement system, will improve productivity incentives by 7 percent, increase overall retention by 6 percent, and increase costs by 7 percent. Therefore, the proposed changes will go a long way toward addressing the retention challenges reported by the services. I'd be happy to answer any questions that you may have at this time.

RAND

April 5, 1999

The Honorable Wayne Allard
Chairman, Personnel Subcommittee
Committee on Armed Services
SR-228 Russell Senate Office Building
Washington, D.C., 20510-6050

Dear Senator Allard:

Thank you for the opportunity to provide testimony to the Personnel Subcommittee on March 3. During the hearing, you requested that RAND assess the recommendations of the Military Coalition, and Senator Reed requested that we provide an assessment of S. 4, The Soldiers', Sailors', Airmen's, and Marines' Bill of Rights Act of 1999. We are able to provide you with an analysis of the key elements of S. 4 and also some of the main features of the Military Coalition's recommendations—a return to High-3 with no cost-of-living adjustment (COLA) caps, pay table reform, a basic pay raise, and future raises that exceed the ECI by .5 percent per year. However, our model is not well-suited to analyze the other elements of the Coalition's or S. 4's recommendations, such as improved survivor benefits or the transferability of educational benefits to family members. We suggest that the DoD Office of the Actuary analyze survivor benefit provisions and perhaps the Veteran's Administration analyze or provide data for analysis of the educational benefit transferability. This letter summarizes the results of our analysis. As discussed in RAND's written statement, we assess the cost-effectiveness of different compensation policy options using a model we built of the steady-state Army enlisted force.¹

The elements of S. 4 for FY00 include:

1. Pay raise: 4.8 percent across-the-board.
2. Pay table reform: Higher raises targeted toward mid-grade personnel.
3. Out-year pay: Pay raises would be ECI + .5 percent.
4. Retirement: Members choose after 15 years of service (YOS) between REDUX with a \$30,000 five-year retention bonus and the High-3 retirement system with no COLA caps.
5. Thrift Savings Plan (TSP): Members can contribute up to 5 percent of basic pay; the services can match the contribution for a six-year obligation in a critical area. Members can invest bonuses in the TSP.
6. Montgomery GI Bill (MGIB): Increase monthly benefits to \$600 maximum; eliminate the \$1,200 member contribution; allow transfers to family members; and allow accelerated payments.
7. Special Subsistence Allowance: Members who are eligible for Food Stamps and are in grades E1 to E5 receive \$180 per month.

¹ In a steady-state model, for a given end strength and compensation package, the flow of personnel into the service is constant from period to period, and the average length of stay is constant. In our simulations of compensation policy options, we hold end strength constant but allow the model to determine how retention changes. For instance, a more generous compensation option will result in a new steady state characterized by higher retention and a lower demand for accessions. The model also attends to the sorting of personnel, the concern being that higher quality personnel are not only induced to stay in the military, but are placed in positions of higher responsibility as they progress through their military career. The extent to which a compensation policy option is effective in sorting personnel depends on what we term "productivity incentives." These provide a measure of the gain from progressing through the ranks more rapidly. Compensation options that have relatively higher pay gains from promotion to higher grades tend to have greater productivity incentives. In sum, our model provides three measures of the effects a compensation policy option: the percentage increase in retention, the percentage increase in productivity incentives, and the percentage increase in cost. These percentage increases are all relative to a base line, which we take to be the current compensation package, i.e., the current pay table and the REDUX retirement system.

8. Special pays and bonuses: Increased benefits include higher caps for Selective Reenlistment Bonuses (SRB) and Enlistment Bonuses. (The President's Budget also contains this feature.)

We use our model to estimate the steady-state retention, cost, and productivity incentive implications of elements 1-4 in the list above.² The analytical results are shown in the following table. The table also shows the effects of the main features of the Military Coalition's recommendations and of the three-part DoD proposal. The other features of the Military Coalition recommendations and S. 4 are not analyzed. Further, the President's Budget contains provisions beyond the three-part proposal, e.g., higher bonus caps, and these provisions also are not analyzed below.

Table 1
Estimated Percentage Changes Relative to REDUX and Current Pay Table
(Steady-State Army Enlisted Force)

Option	Retention	Productivity Incentives	Cost
DoD: 4.4% raise + pay table reform + High-3 with COLA caps	5.5	6.5	6.9
Military Coalition: 4.8% raise + pay table reform + High-3 with no COLA caps	7.9	9.3	9.9
S. 4: 4.8% raise + pay table reform + retirement system choice	13.8	17.1	11.8

The features of the Military Coalition's recommendations that we analyze—a return to the High-3 retirement system with no COLA caps, a 4.8 percent pay raise, and pay table reform—would raise overall retention by 7.9 percent and raise costs by 9.9 percent. These increases are proportional to the DoD proposal. That is, the cost increase is greater than the DoD proposal, but so is the increase in overall retention, and by the same proportionate amount. Costs increase by 43 percent, retention increases by 43 percent, and productivity incentives increase by 43 percent. The productivity incentive effects of both proposals result primarily from the pay table reform element of the proposals, which improves performance incentives by increasing the financial returns to promotion relative to longevity.

The S. 4 proposal is more costly than either the Military Coalition recommendations that we analyze or the DoD proposal. Basic pay and retirement accrual costs for the Army enlisted steady-state force are estimated to rise by 11.8 percent, about 70 percent more than the increase for the DoD proposal. However, the increase in retention is even more dramatic—while the cost increase is about 70 percent higher, retention rises from 5.5 to 13.8 percent, a 150 percent increase. Also, the productivity incentives increase from 6.5 to 17.1, more than a 160 percent increase. Therefore, the S. 4 proposal is a highly cost-effective plan, despite its higher cost.

S. 4 is costly because its large improvement in retention increases the seniority of the Army enlisted force. Senior personnel are more costly because their basic pay, their probability of retiring, and their retirement pay are all higher. Since our model accounts for the seniority increase when it estimates cost, S. 4 is found to be more costly than either the DoD or Military Coalition proposal. Of course, the services

²We measure the retention effect in terms of the change in expected man-years per accession. While we have no direct measure of personnel productivity incentives, we developed an indicator that reflects the financial returns associated with performance relative to longevity. Our cost measure is the sum of basic pay and retirement accrual costs. Also, we assume that the ECI will be 4.3 to 4.4 percent. Therefore, a 4.8 percent across-the-board pay raise represents an increase of about ECI + .5 percent in the steady-state.

may find that they do not need such a senior force, and they could take steps in the future to reduce retention. If so, the retention increase and therefore the cost increase reported in Table 1 will be smaller. We would suggest that if the services do indeed take steps to limit retention, that they adopt policies that discourage the retention of low-quality, not high-quality, personnel. For example, they could tighten reenlistment standards or reduce the retention control points rather than simply reduce promotion speed. That latter policy would discourage the retention of high-quality personnel.

The cost estimates also depend on the individual discount rate. The estimates assume that service members have a discount rate of 10 percent. We believe this is a conservative estimate; that is, many service members, who are relatively young, may have higher discount rates.³ Nevertheless, there is no certainty that the discount rate is exactly 10 percent, nor certainty that the rate is 10 percent for each and every service member. If the discount rate were higher, say 15 percent, the value of compensation proposals would be lower (because future compensation and retirement benefits would have a lower present value). As a result, the retention increases would be smaller, and this in turn would reduce the cost increases. In contrast, if the discount rate were lower, say 5 percent, the value of the compensation proposals would be higher, hence the retention and cost increases would also be higher than those shown in Table 1. Moreover, at a discount rate such as 5 percent, under S. 4 most service members would tend to choose High-3 rather than the REDUX-plus-\$30,000 option. As a result, the cost and retention effects of S. 4 would be more similar to those of the Military Coalition proposal, which offers only High-3. The point we mentioned above applies, too: if the retention effect were leading toward a substantially more senior force, the services could intervene to reduce the increase in retention. Doing so would reduce the cost.

Retention and productivity incentives increase significantly under the S. 4 proposal because of its generosity and the fact that its \$30,000 bonus acts like a targeted pay increase. At a discount rate of 10 percent, many service members will find REDUX with a \$30,000 retention bonus more attractive than High-3. Columns (1) and (2) of Table 2 compare the discounted present value (DPV) at YOS 15 of retirement benefits under each choice for members who expect to retire at various grades and YOS combinations. (Columns (3) and (4) are described later.) The DPV is higher under the REDUX with bonus choice than under the High-3 choice in every case. For example, a member who expects to retire as an E7 with 22 YOS will receive \$95,715 over his lifetime under the REDUX with bonus choice versus \$80,385 under the High-3 choice. The \$30,000 bonus at YOS 15 is a benefit that is paid earlier in the member's career than either the High-3 or REDUX retirement benefits, which are paid after 20 or more YOS. Because of discounting, a benefit that is paid sooner in one's career is worth more to a mid-career member than one paid later. Therefore, members covered by REDUX who would have left service without the \$30,000 benefit will have a stronger incentive to stay in the military and perform well under the S. 4 proposal.

³ Available research estimates the discount rate for enlisted service members to be around 20 to 25 percent. But these estimates were based on the more uncertain VSI/SSB separation pay choice in the early 1990s and may be too high. On the other hand, the widespread use of credit cards, which charge an interest rate of 18 to 20 percent, suggests that the discount rate may be well above 10 percent. A related point is that there is no single discount rate for the entire enlisted force as we've assumed, but rather a distribution of rates. Some will have rates that are below the 10 percent we've assumed, and some will have rates that are above it. Therefore, the estimates presented in Tables 1 and 2 are only approximate, even if one agrees with the 10 percent discount rate assumption.

Table 2
Value at YOS 15 of Retirement Benefits Under Each Choice

Grade/YOS at Retirement	High-3 (1)	REDUX + \$30,000 Bonus (2)	REDUX Alone (3)	Bonus Percent (4)
E5 with 20 YOS	\$66,110	\$80,590	\$50,590	59%
E6 with 21 YOS	71,964	87,037	57,037	53
E7 with 22 YOS	80,385	95,715	65,715	46
E8 with 25 YOS	82,326	102,487	72,487	41
E9 with 27 YOS	86,966	109,517	79,517	38

Note: DPV calculated using a 10 percent personal discount rate, a standard life table to compute mortality risk at each age, and the FY99 active duty pay table.

Another reason for the large increase in productivity incentives under S. 4 is that, like the DoD proposal and the Military Coalition's recommendations, S. 4 includes pay table reform. Because the proposed raises in S. 4 vary by grade and experience level, they will change the structure of the pay table by providing promotion raises that generally exceed longevity raises, which will strengthen incentives for performance. A final reason why S. 4 significantly improves productivity incentives is that the \$30,000 bonus acts like a targeted pay raise for senior personnel. Like a targeted pay raise, the bonus provides incentives to junior personnel to stay in the military and perform well to gain eligibility for the bonus.

Table 2 also contains a point about the equity of retirement benefits between personnel covered by REDUX and their predecessors covered by High-3. If the purpose of the \$30,000 bonus is to give service members covered by REDUX a benefit that will fill the gap between their retirement wealth and the wealth they would have received had they been covered by High-3 instead, then \$30,000 overshoots the mark. That is, the bonus amount could be less than \$30,000, and members would still be as well off, if not better off, under REDUX-plus-bonus as under High-3. For example, an E6 who retires at 21 YOS would need a bonus at YOS 15 equal to only about \$15,000 (\$71,964 - \$57,037) to make his wealth under REDUX alone (column (3)) equal to the wealth he would have received under High-3 (column (1)). Similarly, an E8 retiring at 25 YOS would need a bonus at YOS 15 equal to about \$10,000 (\$82,326 - \$72,487). Of course, if the amount of the REDUX retention bonus were reduced, S. 4 would cost less, and the cost increase in Table 1 would be smaller.

Discussion with our colleagues has brought up another point regarding how a service member might value a \$30,000 bonus paid at YOS 15. As experience with VSI/SSB showed, some service members are pleased to have a large increase in their financial liquidity because it can help them buy a house, pay for college, set up (or plan to set up) a business, and generally have the wherewithal to transition smoothly to civilian life. For such personnel, who can be said to have a fairly immediate demand for cash reserves, the bonus will be quite highly valued (higher than a 10 percent discount rate might suggest). Other personnel may be interested in the bonus strictly as an element of their retirement estate. They may want to know how much the bonus will increase their monthly post-military retirement income when they retire at, say, YOS 23. For the bonus to add to their retirement income, the bonus must be invested and managed in a way to produce a stream of future income. This raises the question of whether service members can wisely invest their bonuses. For personnel with little knowledge of financial markets and few financial assets (e.g., stocks or bonds), investing may be a challenge, and of course there is a downside risk. For such personnel, the bonus payment may, in effect, be discounted by more than the assumed 10 percent because of the added burden and risks of managing it as an investment. These phenomena, though not captured by our model, are real. They begin to reveal how and why service members may react differently to a REDUX-plus-bonus option versus a High-3 option (with or without full COLA).

Returning to Table 2, we believe the structure of the REDUX retention bonus could be improved. As column (4) shows, the \$30,000 lump-sum bonus is a larger percentage of REDUX retirement wealth (reported in column (3)) for those who retire at lower grades than at higher grades. For example, the bonus represents 59 percent of retirement wealth for a member who expects to retire as an E5 but 38 percent for one expecting to retire as an E9. Insofar as those who are promoted more slowly are poorer performers, the current lump-sum bonus structure will provide stronger retention incentives to lower quality, poorer performing personnel. This problem can be averted by making the bonus amount depend on pay grade. For example, rather than a simple lump-sum formula, the bonus could equal \$16,000 plus 60 percent of annual pay at YOS 15. Such a restructured formula would disproportionately reward better performers who expect to retire at higher rather than lower grades. Another advantage of a bonus structure that depended on basic pay would be that the bonus amount would be protected against the erosive effects of inflation. In contrast, a \$30,000 bonus would not be inflation-protected and would have to be periodically revised. We could analyze such an alternative bonus structure if the Subcommittee was interested.

Although the results reported above do not incorporate the effects of the Thrift Savings Plan option or the higher Selective Reenlistment Bonus caps, we can draw on other analysis to make some inferences about them. As our written testimony indicated, a matching contributory Thrift Savings Plan option is not a cost-effective way of improving retention, whereas Selective Reenlistment Bonuses (SRB) are highly cost-effective. Recall that the President's Budget, like S. 4, contains provisions to raise bonus caps and special pays. Therefore, the services will find higher SRB caps and increased special pays a valuable tool in managing retention problems in critical occupational areas. Moreover, bonuses can be applied rapidly, making them superb tools for meeting short-term manning objectives, i.e., for preventing or mitigating retention shortages now looming in some military specialties. On the other hand, S. 4's TSP potentially could allow service members to tax-shelter their \$30,000 bonus. This is important to note because our model captures the effects of pre-tax dollars on retention and does not treat tax-sheltering. If the bonus can be sheltered, the value of the bonus will in effect be greater, leading to a greater increase in retention and productivity incentives. The cost will also rise because the government will lose tax revenue due to the tax-sheltering.⁴

We can also draw on past studies to make inferences about the effects of S. 4 on recruiting. Research shows that pay increases improve recruiting. The 4.8 percent pay raise under the S. 4 proposal will keep pay competitive in the junior enlisted ranks by providing pay growth that outpaces the recent growth in civilian wages. On the other hand, most potential recruits will place little weight on pay raises occurring later in their military career under pay table reform, and almost no weight on the retirement system choice and the \$30,000 bonus offered at YOS 15. Therefore, while the pay and retirement changes under S4 are likely to have a positive effect on recruiting, the effects will be more muted than the retention effects.

Past studies also show that enlistment bonuses and educational benefits are powerful recruiting tools. For that reason, we think enhancing the GI Bill benefit and raising the caps on enlistment bonuses are good ideas. Given recent recruiting difficulties, these policies will help the services meet their recruiting targets. Furthermore, by allowing veterans to accelerate the receipt of their benefits, S. 4 will provide them with more flexibility in their choice of post-secondary educational programs; they will now be able to choose more costly programs that are shorter in duration. Transferability of benefits to family members also increases the value of benefits to the service member.

⁴ The extent to which members can shelter their \$30,000 bonus from taxes is unclear. While the Senate Bill would allow tax-sheltering through the Thrift Savings Plan option, it does not provide the mechanism that would accomplish this end. Further legislation would be required to waive the current \$10,000 annual limit on contributions to the plan. As the tax treatment and the limit on contributions to the TSP change, the value of the \$30,000, and therefore the retention and cost effects presented in Table 1 will change, as would the relative value of High-3 versus the REDUX with bonus choice presented in Table 2.

We have three recommendations that are likely to enhance the cost-effectiveness of S. 4's educational benefits. First, the services should be allowed to match the increase in the MGIB benefits with an increase in the college fund benefits (Army College Fund and Navy College Funds). Research shows that the college funds are highly cost-effective in attracting high-quality recruits into the military and channeling them into hard-to-fill occupations like combat arms. By making the MGIB more generous without an equally generous improvement in the college funds, S. 4 could hurt the services' ability to meet their quality targets, especially in hard-to-fill occupations. Second, the educational benefit should continue to be contributory. Past research shows that educational benefits that require a member contribution do not adversely affect recruiting outcomes and increase their cost-effectiveness as a recruiting tool. Finally, the transferability option should be studied further. Research shows that educational benefits reduce first-term attrition and retention. Transferability might improve retention because members would no longer need to leave service to take full advantage of the benefit. However, transferability might hurt future recruiting if children of service members—a group with a higher propensity to enlist—do not need to serve in the military to obtain educational benefits. Furthermore, a key reason why educational benefits are so cost-effective is that relatively few of the new recruits drawn into service by educational benefits actually end up using them. By making these benefits transferable, usage, and therefore cost, is likely to rise significantly. The importance of these effects needs further investigation.

Based on the results above, we think S. 4 is a sensible proposal with many desirable features, despite its higher cost. With some modifications—such as a restructured REDUX retention bonus—it would be even better. Furthermore, although our model does not incorporate the value members would place on having more choice in their retirement benefits, it is clear that having more choice is generally a good idea. It provides members with the flexibility to choose to some extent the timing of their benefits over their lifetime.

If there is additional information that we might provide, or if you have any questions, please let us know.

Sincerely,

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