

# Thinking about Military Retirement: An Analysis for the 10th QRMC

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## CONTENTS

|  |    |
|--|----|
| <b>Introduction and summary</b> .....                                  | 1  |
| <b>What should a personnel system do</b> .....                         | 3  |
| <b>What does the current compensation system do?</b> .....             | 5  |
| <b>Are the criticisms of the current system justified?</b> .....       | 8  |
| Cost and efficiency .....  | 8  |
| Fairness .....   | 9  |
| Force management .....   | 10 |
| Career lengths .....   | 10 |
| Assignment length .....  | 11 |
| Promotion and up-or-out systems .....                                  | 11 |
| Evaluating personnel and rewording performance .....                   | 12 |
| Flexibility to adapt to change .....                                   | 13 |
| Integrating the active and reserve retirement systems .....            | 14 |
| Institutional incentives .....   | 15 |
| <b>What are the options for restructuring the system?</b> .....        | 16 |
| Features of a restructured retirement system .....                     | 17 |
| Accumulating for old age .....   | 17 |
| Managing separations from the force .....                              | 19 |
| <b>Cost and force structure analysis of several alternatives</b> ..... | 21 |
| <b>Appendix: New British armed forces pension scheme</b> .....         | 29 |
| <b>References</b> .....  | 31 |

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## INTRODUCTION AND SUMMARY<sup>1</sup>

The current military retirement system dates back to 1947, when Congress implemented a common 20-year system for all services and for officers and enlisted personnel alike. A reading of the a 1947 report by the Joint Army-Navy Pay Board and another report by the 1948 Advisory Commission on Service Pay (the Hook Commission) shows that the 20-year system was controversial from the start. Over the years, critics have charged that the system is (1) excessively costly and unfair to taxpayers, (2) inefficient, (3) unfair to the vast majority of entrants who do not serve long enough to receive any benefits, and (4) inflexible and hampers force management [1, p. 175]. Since 1972 a number of Department of Defense (DOD) study groups and independent commissions have recommended overhaul of the system. In 1986 the system was in fact modified in ways that would have provided smaller benefits to virtually all post-1986 entrants who reach retirement eligibility. But in the face of mounting criticism of the modified system (known as REDUX) from senior military leadership in the late 1990's, Congress repealed it in FY 2000. With the repeal of REDUX, the 20-year system now seems more entrenched than ever.

However, discussion of the system continues. Three internal DOD study groups that were convened between 1998 and 2001 made the case for change and then-Secretary of Defense Donald Rumsfeld himself embraced the broad findings of these study groups. In the spring of 2005, he appointed seven members to the Defense Advisory Committee on Military Compensation (DACMC).<sup>2</sup> The DACMC also endorsed the findings of the three internal DOD study groups and it made broad recommendations for reform that are intended to be turned into specific legislative proposals by the 10<sup>th</sup> Quadrennial Review of Military Compensation (10<sup>th</sup> QRMC).

As part of the report of the 10<sup>th</sup> QRMC, the purpose of this paper is to provide readers with a discussion of the issues relating to the military retirement system. To set the stage for the discussion that follows, the first section outlines what a personnel system should do. Here, the purposes of compensation and personnel policy are reviewed and certain institutional constraints that influence the structure of the military compensation system are identified. Following that, the second section highlights the structure of the current compensation system and the outcomes that result from this structure.

The third section evaluates the past criticisms of the retirement system listed above. There are elements of truth to all of the criticisms. The current system is more costly than it could be, but not grossly so. The system is unfair to the personnel who serve for significant periods of time, but not long enough to qualify for retirement benefits (although the provision of other elements of compensation (e.g., bonuses) mitigates this criticism somewhat). The main problem is the inefficiencies that result from the severe limitations the retirement system places on personnel management. The military personnel management system is a one-size-fits-all system that lacks the capacity to adapt to ever-changing circumstances. Unlike the days when most military personnel were concentrated in the Combat Arms skills, today's personnel perform a wide variety of tasks with much different skill sets. The military labor force is an increasingly heterogeneous work force, but is still being managed as if all personnel were in the so-called "youth and vigor" (Y&V) skills.

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<sup>1</sup> The author is a CNA consultant and a Professor of Economics at Clemson University. This report was originally published by CNA in January of 2006 as CRM0013583.A1/Final. This report is an abridged version of CRM0013583.A1/Final.

<sup>2</sup> See <http://www.defenselink.mil/prhome/dacmc.html> for the list of committee members.

In my view, the personnel management system needs to be restructured to (1) provide more capacity to adjust force size and structure in a timely manner, (2) allow for more variation in career lengths across the wide spectrum of military skills, (3) provide for longer assignments to capture the returns to training, and (4) encourage generally longer careers for personnel destined to be senior leaders. Retirement reform is a key ingredient to a re-vamped system of personnel management.

The fourth section discusses the retirement reform recommendations of several past commissions and identifies the broad features of a revised system. DOD needs to communicate to personnel that the retirement system serves to distinct purposes and recognize those distinct purposes in policy. The first purpose of the retirement system is to help personnel accumulate for old-age. Today's system does not perform this function very well for the vast majority of personnel. To help personnel accumulate for old age, personnel should be vested much earlier than they are today in an old-age benefit that might take the form of a defined benefit (as under today's annuity system), the form of DOD contributions to military members' Thrift Savings Plan (TSP) accounts, or some mix of defined benefits and defined contributions. The old-age part of the system would be an entitlement that personnel earn proportionally to the service that they render.

The second purpose of the retirement system is to improve force management by enabling DOD to separate personnel on good terms when it is in DOD's interest to do so. This might mean encouraging separations prior to the 20-year mark in the Y&V skills but delaying them well beyond the 20-year mark in the human-capital intensive skills. DOD should establish a system of separation payments and manage the system separately from the old-age part of the system on a skill-by-skill basis. The separation payments might take the form of an annuity (as under the current system) or a lump-sum cash payment. But because they are intended to be a flexible force management tool, the separation payments are *explicitly not an entitlement*.

Opponents of change to the retirement system have argued that a new system would be too risky and would fail to provide the same quality force as the current system. The fifth section uses an economic model developed by Asch and Warner [2, 3] to estimate how the experience mix of the Army's enlisted force would change under four alternative systems and how much costs would change. I find that three of these plans would *maintain or increase* the quality and average experience level of the force without an increase in cost. These plans would contribute to the old-age needs of a much larger portion of the force while providing DOD and the services with better force shaping tools. In sum, there is a case for changing the retirement system.

## WHAT SHOULD A PERSONNEL SYSTEM DO?

To evaluate the current military compensation system or determine whether it needs modification, one must stay focused on the goals of a personnel system. In any organization, an effective personnel system must do the following:

- **Attract and retain.** The system must be able to attract and retain the requisite number of people who have the ability to do the tasks required by the organization.
- **Train.** The system must encourage people to acquire the skills needed to be productive within the organization, recognizing that some skills have more value outside the organization than others. Since much training is on-the-job and the skills required to perform specific tasks are learned by doing, assignments must be sequenced and timed so that people have the proper incentives to learn their jobs and effectively use the skills they acquire.
- **Sort.** The higher the position within the organization, the more performance or productivity depends on the ability of the person filling the position. As a result, the system must be able to sort people by ability and fill the upper-level positions with the most able personnel. The system must avoid *adverse selection*, whereby the organization loses the more able, and retains the less able, personnel.
- **Motivate.** The system must motivate all personnel to work hard and effectively. It must avoid *moral hazard*, whereby workers shirk because effort is difficult or costly to observe.
- **Separate.** At some point, all personnel—including the most productive—must leave the organization. When people reach that point, the system must encourage them to leave voluntarily and on good terms.

Several institutional features of the U.S. military personnel system affect how the system now accomplishes these goals. One is the lack of lateral entry.<sup>3</sup> Because there is little or no lateral entry, the military must fill positions (billets) at various levels (ranks) by recruiting youth just out of school, training them to perform entry-level jobs, and then promoting them to more-senior positions as they acquire the skills and experience necessary to occupy those positions. The lack of lateral entry means that the senior leaders of 2030 must be in the pipeline today. The quality of each entry cohort thus affects how well the military performs in the future. Arguably, military entry cohorts must have higher ability, on average, than the new hires of organizations that can resort to the external market to fill senior positions.

The second institutional feature is its hierarchical rank structure. The rank structure is based partly on military tables of organization and engineering studies that determine how many personnel are needed in different ranks to operate particular pieces of equipment and perform various military tasks. Congress has placed constraints on the officer rank distribution and the percentage of the enlisted force that can occupy the top three enlisted grades. Positions at each rank are filled by promotions from among those at the next lower rank. Promotions through the junior grades (E-1/E-4 and O-1/O-3) are “standards –based,” while promotions thereafter are “vacancy driven” and based on a fixed number of available slots at the next rank. Officers in the

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<sup>3</sup> The lack of lateral entry derives from several sources. First, much military training is specific to the military, and people possessing the skills demanded by the military are not available in the civilian sector. Second, as Rosen [4] says, war is a young man’s game; many military jobs (e.g., combat arms) require “youth and vigor.” Given these constraints, most new entrants will be by young, untrained people at the bottom ranks.

rank of O-3 and above and enlisted personnel in the rank of E-6 and above are selected for promotion by centralized promotion boards.

Since the fraction selected for promotion declines with rank, the competition for promotion becomes increasingly keener as people move through the system. Rewards must be properly sequenced by rank to motivate personnel to seek advancement within the hierarchy (i.e., avoid moral hazard). Rewards must also be sequenced by rank so that the best and brightest remain in service and compete for the higher ranking positions rather than leave for the civilian sector after one or two terms of service (i.e., avoid adverse selection).

Rewards for performance depend on promotion rates and timing and the rank structure of compensation [2, 3]. But voluntary separations may not be sufficient to maintain promotion flows and weed out personnel who have no future promotion opportunities. As Army Chief of Staff following World War II, Dwight Eisenhower imposed up-or-out rules on Army officers after insufficient turnover of senior officers limited the promotion opportunities of promising, and presumably more able, junior officers. Since then, mandatory separation rules have been expanded to the officer corps of the other services as well as to the enlisted ranks. Mandatory separation now applies at various year-of-service (YOS) points to retirement-eligible personnel as well as to some ranks before YOS 20.

What is the *distinctive* purpose of a retirement system in achieving personnel system goals? Helping retain, sort, and motivate personnel, while important, are not distinctive purposes of the retirement system. These purposes can be achieved through modifications to active duty pay and to personnel policies, such as promotion rates and up-or-out points.<sup>4</sup> Theoretically, a retirement system's distinctive purpose is to induce personnel to separate voluntarily, and on good terms, when it is in the best interest of the services that they do so. The 1948 Hook Commission stated this purpose well [5, p. 40]:

a sound retirement system is essential to solving the superannuation problem. The services must be kept young, vigorous, and efficient: a sound retirement plan with a proper compulsory retirement age will permit youth and brains to rise to the top in time to be effective.... Other concepts of retirement for those taking up the profession of arms are also important and have been taken into consideration but the Commission does not consider them to be controlling.

This quotation makes clear that the role of the retirement system is to induce voluntary separations at the "right time." If the right time is a period well before full withdrawal from the labor force, the retirement system is likely to need adequate transition benefits to induce voluntary separations. Indeed, under today's system, most personnel retire in their late thirties to mid-forties. Without separation benefits to reduce the cost of leaving the military, fewer personnel would willingly separate, and the military would either have to resort to involuntary separations to control the age distribution of the force, which might harm morale, or allow more personnel to remain in service than it wants to remain in service, which would add to costs.<sup>5</sup> The retirement system therefore has a unique role to play in the compensation system. The right time for personnel to terminate their careers is another question, one that I address below.

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<sup>4</sup> See Asch and Warner [2, 3] for more details.

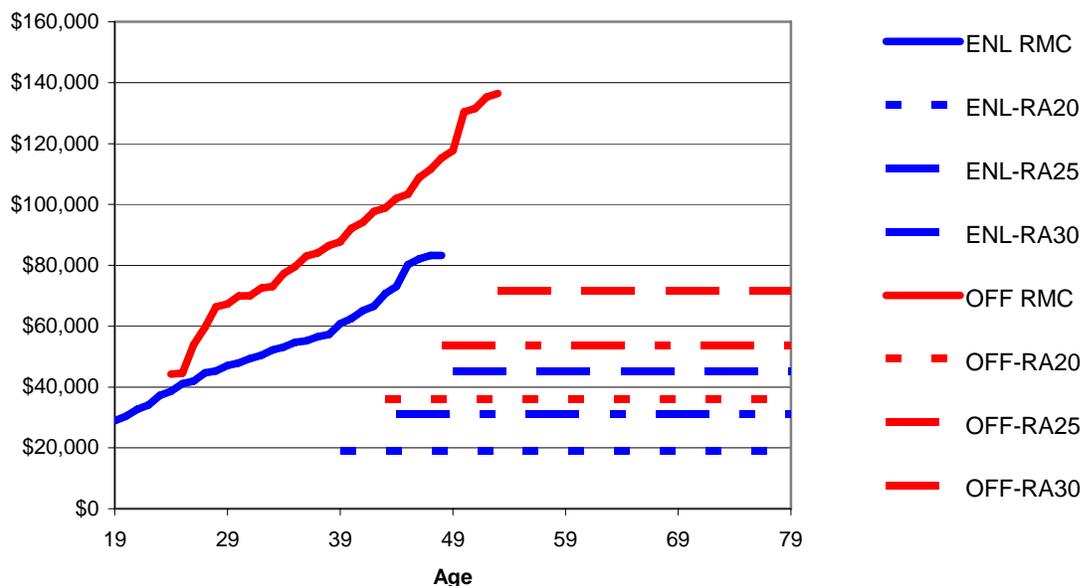
<sup>5</sup>The contrast between the active and reserve force retirement systems is relevant here. The reserve system vests personnel after 20 years of creditable service but does not provide a pension until age 60. As a result, the reserve forces do not experience nearly as much turnover after the 20-year mark as the active forces.

## WHAT DOES THE CURRENT COMPENSATION SYSTEM DO?

The purpose of the compensation system is to help attract, retain, train, sort, motivate, and separate personnel. The current system relies heavily on three elements of compensation to achieve these goals: basic pay, housing and food allowances, and retired pay. In FY 2003, the basic pay cost of the active force was about \$39.7 billion [6, table 3]. Allowances for housing and food added another \$19.7 billion; the retirement accrual charge for the active force added another \$10.7 billion. Including the \$3.9-billion tax advantage due to the nontaxability of allowances, these three elements of compensation accounted for over 90 percent of direct compensation. Special and incentive pays and other allowances amounted to only \$5 billion.

The structure of the compensation system is illustrated in figure 1, which plots the FY 2004 Regular Military Compensation (RMC) by years of service of officers and enlisted personnel under the assumption that officers enter at age 23 and enlisted personnel enter at age 19.<sup>6</sup> (For enlisted personnel (officers), age 19 (23) corresponds to YOS 1, age 20 (24) corresponds to YOS 2, and so forth.) The figure also shows the retirement income streams that personnel who depart with 20, 25, and 30 years of service, respectively, will receive. These streams are assumed to end at an expected age of 79.

**Figure 1**  
Average RMC by Age and Retirement Annuities for Personnel who Depart at YOS 20, 25, and 30



The structure of the compensation system has implications for how well it helps achieve the goals of the personnel system. First, most of the reward for performance comes from promotion. Promotion rewards personnel with higher current pay and with a larger future retirement benefit. As the technical analyses in Asch and Warner [2, 3] demonstrate, larger interranks pay spreads motivate better performance and help keep more able personnel. FY 2001

<sup>6</sup> RMC includes basic pay, housing and subsistence allowances, and a tax advantage for the nontaxability of the allowances.

and 2002 basic pay hikes that gave higher ranking personnel larger percentage increases were driven by the objective of stimulating the reward for performance and enhancing retention incentives for better qualified personnel.<sup>7</sup>

Second, the deferred nature of retirement benefits coupled with “cliff vesting” at the 20-year mark exerts a strong effect on retention decisions both before and beyond that career point. As figure 1 makes evident, the value of the retirement system grows ever larger as a fraction of total current and future compensation as personnel age. Indeed, the retirement system has been likened to a pair of “golden handcuffs” that prevent personnel from leaving prematurely. As a result of the golden handcuffs, the retirement system exerts an increasingly strong *pull effect* as personnel approach the 20<sup>th</sup> year. From the 6<sup>th</sup> year of service to the 20<sup>th</sup>, all four services have annual continuation rates in excess of 90 percent. Between the 11<sup>th</sup> and 19<sup>th</sup> years of service, they are in excess of 95 percent.

The retirement system exerts a strong *push effect* on personnel once they become vested. Only about 10 percent of officers and 3 percent of enlisted personnel who become vested remain for a full 30-year career.<sup>8</sup> While much of the high turnover after YOS 20 is due to the push effect of the retirement system, the high turnover is due in part to mandatory separation for those who have failed to reach the ranks required for continuation.<sup>9</sup>

The influence of the current compensation and retirement systems can be seen in survival curves that show the fraction of new entrants that are expected to remain to various career points. Figures 2 and 3 show survival curves for new entrants derived from FY 1994-99 average continuation rates. Curves based on other time periods, including the 1980s, are remarkably similar. The curves reveal that only about 15 to 30 percent of Army, Navy, and Marine Corps enlisted entrants remain to the 6<sup>th</sup> year of service. Early Air Force survival is much higher; about 40 percent of Air Force entrants are still in service at the 6-year mark. About a third of enlisted personnel who complete 6 years of service and about half of those who stay to the 10-year mark complete a 20-year career. A comparison of the enlisted survival rates in figure 2 with the officer rates in figure 3 indicates that officer retention is much higher than enlisted retention.

Hansen [8] and Asch and Hosek [9] show that the average level of compensation differs little by service or by occupation. Neither does the YOS pattern of compensation. As a result, the system produces broadly similar experience distributions of personnel and patterns of turnover across the four services and the full spectrum of military occupations [9, tables 3 and 4].

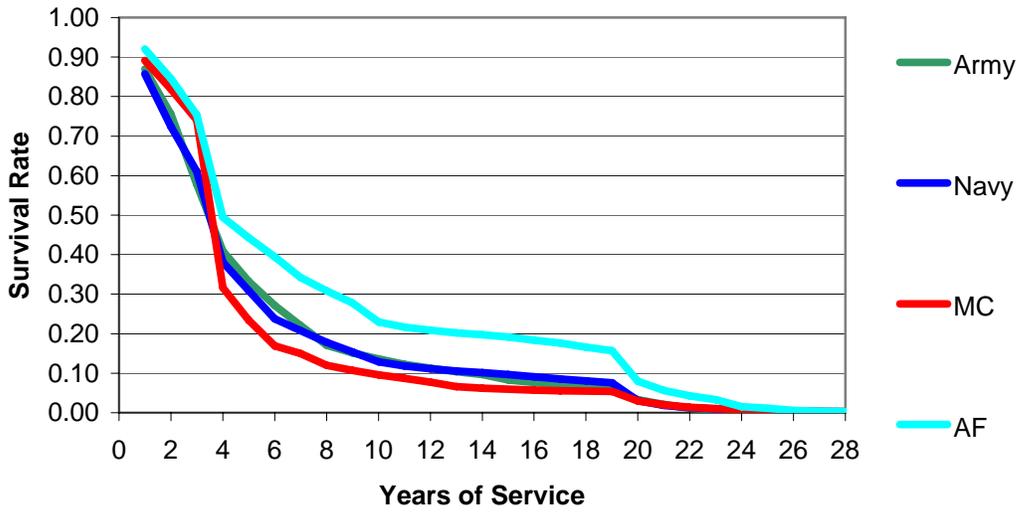
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<sup>7</sup> The targeted pay hikes were based partly on analysis by the 9<sup>th</sup> QRMC [7], which found that there was too much pay compression in the middle ranks.

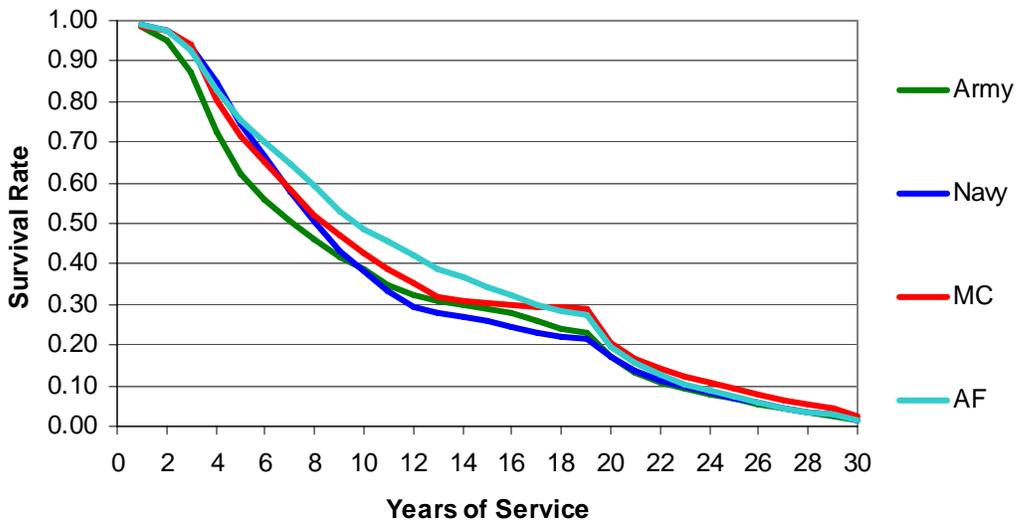
<sup>8</sup> Officer retention is higher because officers typically have one or more potential promotions remaining when they reach the 20-year mark. By that point, most enlisted personnel have reached their terminal grades and therefore have fewer remaining promotions and less incentive to stay. Enlisted personnel retire at an average age of 41 and officers at an average age of 45.

<sup>9</sup> Mandatory separation points for officers are codified in the 1980 Defense Officer Personnel Management Act (DOPMA) and modifications to it. Officers with the rank of O-4 must retire immediately upon completion of 20 years; O-5s must retire after 24 years of service, and O-6s must retire after 30 years. High year-of-tenure (HYT) policies for enlisted personnel are managed by each service individually and vary from service to service.

**Figure 2**  
**Survival of Enlisted Entrants to Given YOS**  
 (Based on FY 1994-1999 data)



**Figure 3**  
**Survival of Officer Entrants to Given YOS**  
 (Based on FY 1994-1999 data)



## ARE THE CRITICISMS OF THE CURRENT SYSTEM JUSTIFIED?

The introduction listed four areas of criticism of the current military retirement system: (1) cost, (2) efficiency, (3) unfairness, and (4) inflexibility. I now examine these criticisms in more detail.

### Cost and efficiency

The first two areas of criticism are cost and efficiency. The U.S. military retirement system is expensive: the retired pay accrual is about one-quarter of outlays for basic pay. Over the years, such critics as Gansler [10] have charged that it is grossly inefficient and unfair to taxpayers to make retirement payments to military retirees during their second careers. One reason for the presumed inefficiency is the apparently high discount rates exhibited by military personnel. Reducing the amount of compensation directed to retirement pay and placing more “up front” in active duty pay would generate more retention at lower cost to the government.<sup>10</sup>

Concern about the apparently high cost of the retirement system motivated the 1985 President’s Private Sector Commission on Government Cost Control—known as the Grace Commission—to recommend eliminating all annuity payments before age 60 or 62, thus effectively converting the system to an old-age annuity system.<sup>11</sup> Eliminating the second-career annuity would obviously hurt retention and reduce the average experience level in the force. Maintaining the same experience level that the current system provides would require an increase in active duty pay. Using an economic model that determines the costs and effects of alternative compensation systems and personnel policies, Asch and Warner [2, 3] found that, when coupled with the upfront active duty pay increases necessary to maintain the same average experience level as the current force, the Grace Commission proposal would reduce the steady-state *system* cost by about 5 percent.<sup>12</sup> Today, this would amount to about \$2 billion per year. This analysis suggested that the current system is somewhat inefficient, but not grossly so.

But this sanguine conclusion has to be tempered by the fact that it was based on analysis of a force in steady state. The retirement system, coupled with the practice of compensating all personnel similarly regardless of skill, leads to a dynamic inefficiency and excessive cost growth over time.<sup>13</sup> Former Deputy Secretary of Defense John White states that “the management emphasis on exogenous market forces, the traditional structure of compensation, the bitter lesson

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<sup>10</sup> This is the case if personnel discount future dollars at a rate of 10 percent, and \$1 of pay next year has the same value as  $\$1/(1 + .1) = \$0.909$  today. But since the government has a real borrowing cost of about 2.5 percent, the government will receive  $\$1/(1 + .025) = \$0.976$  from a bondholder to whom it promises to pay \$1 next year. It is therefore cheaper for the government to pay the person \$0.909 up front than \$1 next year because the \$1 payment next year costs the government \$0.976 today.

<sup>11</sup> This commission was appointed by President Reagan to identify cost reduction measures throughout the federal government and was chaired by businessman W. R. Grace [11].

<sup>12</sup> System cost was defined as the present value of the future active duty and retirement cost of each accession cohort. Costs are calculated at a government real discount rate of 2.75 percent. Savings result from the fact that retention decision-makers discount future dollars at a higher rate than the government. A 10-percent personal discount rate was assumed in the analysis; however, simulations indicated that the results were insensitive to the assumed discount rate.

<sup>13</sup> The practice of paying all personnel similarly derives from a philosophy that pay equity is needed to maintain morale and *esprit de corps*. See Hogan, Simon, and Warner [6] for further discussion of pay philosophies. Recognizing the cost of a policy of pay equity, the British vary pay increases by service and officer-enlisted status based on recruiting and retention. In 2004, Army enlisted personnel received a pay increase of 5.5 percent, while Army officers received a pay hike of only 3.7 percent. In the Royal Air Force, enlisted personnel received a pay increase 3.9 percent, while officers received an increase of only 2.1 percent.

of the pay freezes in the late 1970s, and the heavy emphasis on meeting retention goals have made cost control a secondary concern in force management” [12, p. 41].

The problem of “supply side bias,” as White calls it, is illustrated by the events of the past seven years. The booming economy of the late 1990s caused retention in many military skills to sag below levels required to maintain the force in steady state. The shortfalls were not across the board, but DOD nevertheless responded with significant basic pay increases in FY 2001-03. The pay hikes coupled with the recession that began in 2001 had the effect of improving retention—in fact, improving retention in the Air Force and Navy “too much.”<sup>14</sup> These services are now confronted with an overhang of midcareer personnel whom those services are reluctant to separate for fear of “breaking faith” with those who have provided faithful service over a sustained period.<sup>15</sup> The system is inefficient in a dynamic sense for, while retention shortfalls can be addressed by active duty pay increases, adjustments to surpluses are more difficult due to the influence of the retirement system on force management.<sup>16</sup>

### **Fairness**

Most civilian employers are required by the Employee Retirement Income Security Act (ERISA) to vest employees in company-provided retirement plans no later than 5 years of service. But the military retirement system is exempt from ERISA vesting requirements. The delayed nature of vesting of military retirement benefits leads to the criticism that the system is unfair to the vast majority of personnel who do not stay long enough to receive benefits through active service or some combination of active and reserve service.<sup>17</sup>

By one view, though, earlier vesting is not a panacea. Without any change in force management practices, earlier vesting would entail a larger retirement accrual charge without any corresponding benefit to DOD.<sup>18</sup> By adding to cost, the extra retirement accrual charge would restrict the services’ capacity to manage their forces through the use of special and incentive pays and, as a result, would result in reduced levels of such pays to personnel. What junior personnel gain through extra retirement benefits they would lose in upfront compensation.

Despite this argument against it, earlier vesting has been a component of most previous attempts to reform the military retirement system. One reason for advocating earlier vesting is the normative belief that DOD should do more to help young personnel, who may not be concerned about doing so at the time, accumulate for the future. Indeed, the prospect of a pension that begins at a relatively young age may discourage junior and midcareer personnel who anticipate completing a 20-year career from saving on their own. The other reason is that earlier vesting is a prelude to more innovative force management, which would not be possible without it.

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<sup>14</sup> See Hansen and Wenger [13] for an analysis of the Navy’s career content. The analysis indicates that the Navy may have too many careerists in many skills.

<sup>15</sup> The much higher retention of Air Force midcareerists is evident in figure 2.

<sup>16</sup> Furthermore, reliance on basic pay levels to manage retention means that an excessive level of pay—one that produces too much retention—can only be eliminated over time through slower pay raises.

<sup>17</sup> The unfairness of the system is evident in the case of a Navy Sailor with 17 years of service whose wife was killed in a car accident, leaving him with five children. He was forced to leave the Navy without any accumulated retirement benefits when he was reassigned to sea duty and had no one to care for his children. (This anecdote was provided to me by Navy Captain Chris Kopang, former director of OSD (Compensation).)

<sup>18</sup> Vesting before the 20-year mark is usually assumed to take the form of an old-age annuity based on the formula  $0.025 * YOS * \text{High-3 years' average basic pay}$ . Asch and Warner [14] show that such vesting would have little effect on retention patterns, force quality, or motivation.

## **Force management**

The revolution in military affairs has caused planners to rethink fundamental assumptions in many areas. A perusal of the papers presented by both senior military personnel and civilians at the 30<sup>th</sup> Anniversary Conference of the All-Volunteer Force [15] indicates that this rethinking of assumptions is occurring in the areas of manpower planning and personnel management. The need to rethink fundamental assumptions is also evident in the discussions of three recent internal DOD study groups that were appointed to examine what the military manpower and personnel systems should look like in the 21<sup>st</sup> century and how the compensation and personnel management systems should best be configured to support them. These study groups included the 1998 Defense Science Board Task Force on Human Resource Management in the Department of Defense (hereafter DSB), the 2000 Officer Management Study Group (hereafter OMSG), and the 2001 Quality of Life Panel (hereafter QoL).<sup>19</sup>

Collectively, these study groups considered the following questions about the military manpower/personnel and compensation systems that are germane to a discussion of the retirement system:

- How long should military careers be? Should some careers be shorter than 20 years? Should others last much longer than 20 years?
- Do personnel spend the right amount of time in each assignment? Should assignments be longer?
- Do the current promotion and up-or-out systems serve the needs of the military well? Should the up-or-out system be modified to accommodate different practices, such as up-and-stay?
- Related to this discussion, should all of the reward for performance come through promotion (and longevity) or should alternative compensation tools be implemented to motivate personnel and reward performance? What would be the implications for the retirement system?
- Is there sufficient flexibility in the manpower and personnel system to adapt to ongoing changes in technology, external threats, and other factors?
- What personnel and compensation system changes would allow better integration of the active and reserve forces into a seamless total force?
- Do force managers have the right incentives to manage the force efficiently? Do different systems imbed different incentives for efficient force management?

***Career lengths.*** The optimal length of an active duty military career should be related to the path of productivity with respect to age and military experience. It should also be related to the cost of training. Historically, the physically demanding nature of warfare required a “young and vigorous” force. Vesting personnel in an immediate retirement benefit at YOS 20, typically around age 38 to 40 for enlisted personnel and age 42 to 46 for officers, became the mechanism for generating the voluntary separations necessary to maintain a young and vigorous force.

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<sup>19</sup> The DSB study group was cochaired by Dr. John Foster and General Larry Welch (USAF, Ret.). The OMSG was chaired by LTG Michael McGinty (USAF, Ret.), and the QoL panel was headed by Admiral David Jeremiah (USN, Ret.). The DSB issued a final report [16]. The deliberations of the other two groups are contained in briefings or unpublished internal DOD memoranda. Koopman et al. [17] discuss many of the issues raised in this section from a Navy perspective.

But is 20 years now the optimal career length in all military career fields? The three DOD study groups believed not. Vessey [18] gives the example of infantrymen, whose productive service life is around 10 to 14 years. Another example is fighter pilots [16]. Doctors, nurses, and lawyers are examples of personnel whose productive service life spans well beyond 20 years. Given the nature of the tasks performed and differences in the occupational distributions of their forces, the productive service life of Army and Marine Corps personnel is, on average, likely to be shorter than the productive service life of Air Force and Navy personnel.<sup>20</sup> When most of the U.S. military forces were concentrated in Combat Arms skills, the question of career lengths was not a critical one. But as U.S. forces have become more occupationally diverse, the payoff from managing different skill groups separately increases.

**Assignment length.** Military skills are acquired through a sequence of assignments. Effective officers and senior noncommissioned officers (NCOs) must have a breadth of experience in different assignments. Providing the breadth of experience required to be a senior leader in the context of the 20-year retirement system means that assignments must be fairly short (2 to 3 years on average). But frequent rotation has several adverse effects. First, people are often moved before they have fully learned their current tasks. Second, frequent rotation breaks the link between a person's actions in a given assignment and the consequences of those actions. Third, because there is often a lag between a person's actions and the outcomes of those actions, frequent rotation impedes effective personnel evaluation.

Evidence from a series of CNA studies indicates that higher crew turnover (especially among senior enlisted personnel and commanding officers) hurts ship and aircraft readiness [21, 22, 23]. Because of these considerations, there was unanimous agreement among the retired officers who participated in the three study groups cited earlier that officers, in particular, do not spend enough time in each assignment. They shared a belief that officers should spend more time in each assignment and that officer career lengths should be generally increased.

**Promotion and up-or-out systems.** These systems, as they are currently structured, provide entrants with the "rules of the game" that define career "success" or "failure." As they have evolved since World War II, they are designed to sequentially select the "best and brightest" for more demanding, upper-level jobs and induce the separation, after some point, of personnel who have been deemed unfit for future promotion. Within the context of a fixed hierarchy, separation at some point of those who are doing well in their current jobs, but are unsuited for promotion, is deemed necessary to maintain promotion opportunities for more junior personnel. Asch and Warner [2, 3] show that, when combined with a skewed rank structure of compensation (a structure in which pay differentials increase with rank), up-or-out rules can in fact increase motivation and improve the personnel system's capacity to sort personnel by ability. That is to say, there is a certain value in up-or-out rules.

Nevertheless, certain aspects of the promotion and up-or-out systems generate unease as they are applied in practice. One source of uneasiness is the focus on identifying senior leaders. The systems do not accommodate task specialization very well, and they do not allow people who do not want command responsibility to remain in operator jobs for long periods. The second source of uneasiness is what unintended behaviors the systems encourage. The personnel system should encourage people at all levels to assume responsibility and take risks that are potentially beneficial to their units and to the country. But centralized promotion boards that are faced with sorting through large numbers of very similar service records often identify whom to promote, or better yet *not* promote, based on blemishes to service records. Because bad

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<sup>20</sup> See [13, 17, 19, and 20] for further discussion of career lengths in the Navy.

outcomes to risk-taking often result in mandatory separation, while good outcomes only result in a due-course promotion, the system is in fact designed to penalize failure and discourage useful risk-taking.<sup>21</sup>

These concerns have led some observers to recommend that the U.S. military move away from the up-or-out system, whereby individuals are continuously winnowed out of the system through the promotion process, toward some form of up-and-stay system. An early proponent of such a system—as well as critic of up-or-out—was Air Force Colonel John Boyd. Former Under Secretary of Defense for Force Management and Personnel Bernard Rostker has recently advocated such a system [24, 25]. In Rostker's system, young officers would remain in an untenured status until the 10- to 12-year mark, at which point they would gain career status or be separated. This selection would retain fewer officers than the 80 percent of O-3s that are promoted at this career point to O-4 today. However, those retained would be kept for much longer careers than officers serve today and would not be subject to the continual winnowing that occurs today. Longer assignments would permit deeper skill development, and the negative aspects of up-or-out identified earlier would be avoided. But the system would still avoid stagnation by permitting the removal of officers on a case-by-case basis for underperformance.

***Evaluating personnel and rewarding performance.*** As just discussed, the main reward for performance in today's military personnel system is promotion, but longevity is also rewarded through time-in-service increases at specified intervals (usually 2 years) and through delayed retirement vesting. Promotion is a blunt instrument for rewarding performance because it fails to recognize significant within-rank differences that exist and requires personnel who are suited to their current positions, but not necessarily to higher-level positions, to move up the chain of command or leave. And as personnel move up the chain of command, the shape of the military hierarchy successively limits the capacity of the system to reward performance through further promotion. Obviously, lock-step longevity increases provide no incentive for better within-rank performance.

In an organization as large and geographically dispersed as the U.S. military, the practice of rewarding personnel through promotion, supplemented by automatic longevity increases, arises partly from the difficulty of measuring individual performance and linking individual pay to performance. Nevertheless, the information revolution is surely reducing technological limitations to more individualized evaluation, and the increased specialization and diversity of military tasks points to the need for improvements in personnel evaluation.

More individualized evaluation would permit compensation to be more directly, and immediately, related to individual performance and would lessen the need to rely on promotion and up-or-out practices to motivate personnel. The personnel system could then better accommodate personnel who are highly qualified to do their current jobs but who may not be qualified, or want, to do higher-level tasks.

Improved personnel evaluation has implications for the structure of the retirement system. One rationale for the 20-year retirement system is that it generates the turnover required to create promotion opportunities (and thus motivation) for junior personnel. The high turnover helps cleanse the system of underperforming midcareerists whom personnel managers are unable or unwilling to separate before the 20-year mark. If an improved evaluation system with more individualized incentives reduced the need for promotions as the primary motivation incentive, it would also weaken the need for high turnover at a single career point to maintain promotion

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<sup>21</sup> During the DSB meetings, General Larry Welch was adamant on this point.

flows. And a system that reduces the large 20-year retirement carrot, but maintains motivation and effort through more incremental incentives, would give personnel managers more ability to separate underperforming personnel.

***Flexibility to adapt to change.*** The preceding three issues—career lengths, assignment lengths, and promotion/up-or-out—were issues about the force in steady state. But the downsizing period of the early 1990s and the more recent events alluded to earlier highlight questions of how the system deals with change. During the downsizing period, the issue was how to contract the overall size of the force. More recently, the question has become how to contract the size of the Air Force and Navy while expanding the size of the Army. Furthermore, there is the ongoing question of how to expand or contract particular skill groups in response to ongoing changes in technology and external threats.<sup>22</sup> For example, the rapid changes in technology over the past decade have increased the demand for Information Technology (IT) specialists. The conflicts in Afghanistan and Iraq have raised awareness of the long-term need for more linguists and Special Forces personnel.

The current system has difficulty dealing with changes in demand. Expansions in demand in particular skills can sometimes be accommodated by cross-training personnel in skills with declining demand. Indeed, the current “Blue to Green” program is attempting to move personnel from the Air Force and Navy, where endstrengths are declining, to the Army, where endstrength is growing (by 30,000). Most often, an expansion in demand is satisfied by bringing in new accessions (who are young and inexperienced) and training them for newly created billets. The constraint on lateral entry means that new billets can take a long time to fill as the system “grows” the new personnel. The three DOD study groups urged that ways to reduce the lateral entry constraint be investigated so that the services can more easily access civilians who have immediately useful skills.

As difficult as dealing with an expansion in demand is, the far more difficult problem is dealing with a decline in demand. The difficulty of dealing with a decline in demand is illustrated by the downsizing period of the early 1990s, when the U.S. military was confronted with reducing the active force from 2.1 million to 1.4 million personnel. The military could have reduced force size two ways. One way would have been to just reduce accessions and allow those currently in the force to flow through the system as before. But the large contraction in accession that would have been required to reduce the force by one-third would have meant that 10 years in the future there would not have been enough midranking members to meet the demand for experienced personnel. There would have been “holes in the force.” In fact, if this option had been selected in the early 1990s, the prosecution of the wars in Afghanistan and Iraq would have been much more difficult.

The other option, a balanced reduction in the force, would have required the involuntary separation of thousands of midcareer personnel who were not yet vested in the retirement system. The services were understandably reluctant to involuntarily separate midcareerists (those in roughly the 10- to 19-YOS zone) in the early 1990s because involuntarily separating personnel at this point rather than allowing them to continue until the 20-year point would have been seen as a “break of faith” with personnel who made prior retention decisions on the assumption of a 20-year career. In addition to being unfair to the group separated due to declining demand, it was feared that such a break of faith would cause problems for future recruiting.

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<sup>22</sup> See Koopman [20] for a discussion of the need for more flexible career paths in the Navy and a discussion of policies for gaining added flexibility, which complements the discussion here.

To limit the criticism that involuntary separation during downsizing would have meant breaking an implicit contract with personnel that gave them tenure beyond a certain career gate (e.g., attainment of rank O-4 for officers), DOD and the Congress devised two buyout options for midcareer personnel: the Voluntary Separation Incentive (VSI) and the Selective Separation Benefit (SSB). VSI offered separatees an annuity payment for twice their years of service based on the military retirement formula  $0.025 * YOS * \text{final monthly basic pay}$ .<sup>23</sup> SSB offered personnel a lump-sum separation benefit calculated as  $1.5 * YOS * \text{final year's basic pay}$ . Although not all of the additional departures that occurred during the downsizing period were truly voluntary, these programs did assist the reduction in force, and in fact were necessary for it to occur, without a lot of angst.<sup>24</sup> Although many personnel were disappointed that their military careers were coming to a premature end, most understood that their departures were necessary for the maintenance of a balanced, effective fighting force in the future.

The downsizing period was a useful lesson in force management. It was the first period since Vietnam in which there had been a significant change in the overall demand for military personnel. There was a significant reduction in force after the Vietnam War, but that downsizing was made easy by the fact that the force had a much higher percentage of junior personnel, many of whom were draftees. It was a useful lesson in force management because it proved that many of the assumed inflexibilities in the system could be addressed with better force-shaping tools. But the VSI-SSB authorities lapsed such that DOD is now back where it was before the end of the Cold War. DOD needs, at a minimum, a permanent force-shaping authority that, as I argue below, should become part of a restructured—or at least “reframed”—retirement system.

***Integrating the active and reserve retirement systems.*** Now that successful management of the reserve forces is so critical to U.S. military missions around the world, reserve force compensation issues have received much more attention recently. One of those issues is how the reserve retirement system should be configured. The reserve system, like the active system, vests reservists after 20 years of creditable retirement points. The key difference is that reservists do not receive an immediate annuity upon retirement. Rather, the annuity only begins at age 62. As mentioned earlier, the lack of an immediate annuity after 20 years of creditable service keeps reserve retention higher after vesting than it would otherwise be; annual continuation of reservists in their forties and fifties is much higher than continuation of active duty personnel of similar ages.

DOD's official adoption and espousal of the “total force” concept has brought into clearer view many differences in treatment of active duty and reserve force personnel (see the report of the 9<sup>th</sup> QRMC [7] and Bicksler, Gilroy, and Warner [15]) and has led to demands by some that all distinctions in personnel and compensation policy be eliminated. In the retirement

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<sup>23</sup> To be clear, the VSI was based on final basic pay, and the retirement annuities of personnel who entered the force before 1981 are based on final basic pay. But entrants after 1980 will have their annuities based on high-3 years' average basic pay.

<sup>24</sup> References [26, 27, and 28] estimated the separation effects of the downsizing programs and [29] derived estimates of personal discount rates from the choice between the lump-sum and the annuity offered by the programs. Moore, Griffis, and Cavalluzzo [26] estimated that eligibility for VSI/SSB raised Navy separations in the 1992-1994 period by 22 percentage points; Asch and Warner [28] obtained a 20-percentage-point estimate using Army data. Estimation of a pure separation effect of the program, though, is complicated by the fact that personnel were told that, if enough personnel did not separate voluntarily, involuntary separations would begin and personnel so separated would receive a lump-sum amount equal to  $1.0 * YOS * \text{final year's basic pay}$ . The risk of staying and facing involuntary separation, rather than separating with SSB, was half a year's pay. Using Air Force data, Mehay and Hogan [27] estimated stronger separation effects in skills that were subject to a bigger chance of involuntary separation.

policy area, DOD has been under some pressure to provide reservists with annuities immediately upon retirement after 20 years of creditable service—that is, make the reserve system identical to the current active force system. As Asch, Hosek, and Clendenning [29] argue, however, this would be precisely the wrong thing to do. It would not solve any reserve force management issue that could not be fixed more efficiently by other means, and it would subject reserve force managers to the same inflexibilities now built into the current system for active duty personnel.<sup>25</sup>

***Institutional incentives.*** An important issue in force management is the degree to which force managers are able, or willing, to respond to the relative costs of different types of personnel.<sup>26</sup> Although relative costs should influence force mix choices, personnel managers are often uninformed about relative costs or lack the incentive to respond to them even when costs are known. A case in point is the retirement accrual charge. The retirement accrual accounting system was introduced in the 1980s precisely for the purpose of making retirement costs more transparent and personnel managers more responsive to retirement costs when managing their forces. But the accrual charge is based on a long-term average estimate of the likelihood that military entrants will become retirees and does not vary by career field or service. Thus, the Air Force incurs the same accrual charge as the Marine Corps despite the fact that a much higher fraction of Air Force personnel will eventually receive retirement benefits. Air Force careerists are underpriced and Marine Corps careerists are overpriced, giving Air Force personnel managers the incentive to overuse careerists and Marine Corps personnel managers the incentive to underuse them. The insensitivity of the accrual charge to management decisions also means that force managers have little incentive to control retention surges that arise from downturns in the economy and other factors.

Senior-level DOD officials are aware of the need for more institutional responsiveness to cost. As I discuss in the next section, some forms of retirement systems would give force managers better incentives than others. In particular, defined contribution (DC) systems might provide better incentives to personnel managers than defined benefit (DB) systems. DB systems, such as today's retirement system, promise to pay specific future benefits. DC systems, by contrast, provide contributions into individual accounts but do not guarantee future benefits. Future benefits in a DC system depend on the performance of financial markets.

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<sup>25</sup> To be specific, they show that 20-year vesting of reservists, or reducing to 55 the age for an immediate annuity, would generate fewer reserve man-years than other policies with the same cost, such as reserve affiliation bonuses.

<sup>26</sup> In particular, it is the marginal cost of personnel (change in cost due to a change in number) that is relevant for decision-making, not their average cost.

## WHAT ARE THE OPTIONS FOR RESTRUCTURING THE SYSTEM?

Based on the preceding discussion, there is a plausible case for restructuring the military personnel management system to (1) provide more flexibility in adjusting to changes in force size and structure, (2) allow for more variation in career lengths across the wide spectrum of military skills, (3) provide for longer assignments to capture the returns to training, and (4) encourage generally longer careers for personnel destined to be senior leaders. The case for change is not new. Many of the same criticisms that were discussed earlier were leveled at the system back in the 1970s, first by the Defense Manpower Commission (DMC) [30] and then by the President's Commission on Military Compensation (PCMC) [31]. The purpose of this section is to discuss in general terms the past proposals for modifying the military retirement system and the desirable features of a modernized system. The next section offers a more detailed analysis of the costs and force structure effects of four alternatives to the current system.

It is instructive to begin with a review of the DMC and PCMC proposals. Both commissions recommended earlier vesting of retirement benefits to give personnel managers more flexibility (and incentive) to separate midcareerists in skill groups that are in excess supply due to changes in supply or demand and to separate nonperformers on a case-by-case basis. But, because the DMC's plan vested midcareer personnel in an old-age annuity only after YOS 10, and did not provide immediate retirement benefits before YOS 20, it is likely that force managers would remain reluctant to separate midcareerists not yet vested in immediate benefits. The PCMC recognized this problem, and its plan provided a cash transition fund based on defined contributions into a trust fund beginning at YOS 5 (but not payable to personnel who separate before YOS 10).<sup>27</sup>

The plans addressed the question of career lengths, but would have handled them quite differently. The DMC simply argued that the optimal career length for personnel in the Combat Arms skills was 20 years and 30 years for everyone else. So it recommended immediate annuities for Combat Arms personnel beginning at YOS 20 but for everyone else not beginning until YOS 30. Personnel with more than 10 years of service who left voluntarily before the immediate annuity points would be eligible for the old-age annuity beginning at age 62.

The PCMC, by contrast, did not specify optimal separation points for personnel in different career fields, and its plan did not provide an immediate annuity for those who separate before "full-retirement age."<sup>28</sup> Separates beyond YOS 10 would receive their accumulated cash transition fund but no other benefit before the full-retirement age. The PCMC simply assumed that the availability of the trust funds would give personnel managers more incentive to separate personnel due to changes in supply or demand without feeling that they had broken faith. The PCMC plan, unlike the DMC plan, recognized the importance of transition benefits for midcareer personnel both in enabling personnel to make the transition to the civilian sector and in giving personnel managers the tools to manage the force without being subject to the criticism of broken faith whenever they separated surplus personnel or marginal performers.

Despite support of the PCMC plan from Chief of Naval Personnel Admiral James Watkins, the plan was staunchly opposed by the senior leaders of the other services. To quote White [12, p. 40], "This leadership supported the existing system because it was familiar, operational, and equitable, i.e., all members were subject to the same rules, from senior

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<sup>27</sup> The defined contributions were based on a percentage of basic pay and increased with YOS and would have earned interest. See table 2 in the next main section.

<sup>28</sup> The full-retirement age was defined as follows: age 55 for those with 30 years, age 60 for those with 20 to 29 years, and age 62 for those with 10 to 19 years.

noncommissioned officers to the newest recruits. The institution voted for tradition over innovation.” During the period of the PCMC, the AVF was in its infancy and its success was by no means assured. The senior leaders were understandably reluctant to entertain a change in the backbone of the compensation system at a time when careerist retention was plummeting in the face of pay freezes and other factors. They feared that what they gave away in retirement reform they would not get back in other adjustments to compensation.

But much has changed since then. Congress has shown sustained support for the volunteer force concept and has usually responded with pay increases and other incentives during periods of difficulty, albeit sometimes with lags. Furthermore, the experience of the drawdown demonstrated that proactive force management with such tools as VSI and SSB is possible. While more proactive force shaping is possible with the appropriate tools, however, force management is back on automatic pilot, with personnel flowing through the one-size-fits-all system much as they did before the drawdown.

It is fair to say that at the end of the deliberations of the three recent DOD panels charged with studying the personnel/compensation system, the retired flag rank officers who participated were convinced of the limitations and costs of the current system and the need for change.<sup>29</sup> A change in the system, however, will require the support and leadership of the senior military leadership. As the REDUX experience indicates, changes are unlikely to succeed if they are imposed from without.

### **Features of a Restructured Retirement System**

What features of a retirement system would simultaneously allow for longer careers for some, shorter careers for others, provide greater flexibility to manage the active force, and improve the integration of the active and reserve forces without being seen by personnel as an uncertain and capricious system? How can the supply-side bias that White talks about be eliminated while still being fair to personnel? The key is to explicitly recognize in policy the two distinct purposes of the retirement system—helping people accumulate for old age and managing separations from the force—and manage them separately. That is, DOD needs to create a *two-part retirement system*, the first part of which is an entitlement established for the good of the individual and the second part of which is not an entitlement but is managed for the good of the force. The second part could be managed differently by service, by career field, and over time to keep the experience distribution of the force in line with the distribution desired by personnel managers. The next two subsections elaborate on these ideas.

***Accumulating for old age.*** The first step in getting personnel to buy into a new system is to vest all personnel in an old-age benefit somewhere between YOS 5 and YOS 10. Remarkably, the British vest all military personnel in an old-age annuity (called the “reckonable pension”) beginning at age 65 after just *2 years of service!*<sup>30</sup> The British vest this early to bring the military system in conformity with other public pension programs. Vesting U.S. personnel this

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<sup>29</sup> These officers included former Air Force Chief of Staff General Larry Welch, who was cochair of the DSB study group, former Vice Chief of Naval Operations Admiral David Jeremiah, who was chair of the QoL panel, and former Air Force Chief of Staff for Personnel LTG Michael McGinty, who chaired the OMSG. Other participants in these study groups included General Andrew Goodpaster, former Joint Chiefs of Staff Chairman General John Vessey, and MG Arthur Dean. It is also fair to say that the limitations of the current system have hit home to many current and former personnel managers in the services and OSD. See, for example, the January 12, 2001, briefing by Vice Admiral Pat Tracey, former Deputy Assistant Secretary of Defense for Military Personnel Policy [32].

<sup>30</sup>The British have just revamped their military retirement system. Because their new system has so many interesting features, appendix A discusses it in some detail.

early would be costly and would limit the capacity of personnel managers to use other compensation tools, such as bonuses, to shape the force. But vesting somewhere between YOS 5 and YOS 10 would bring the U.S. system in closer conformity with ERISA requirements and would help create the perception that DOD is looking after the long-term needs of a larger fraction of the force.

Just what form the old-age benefit should take is another question. The old-age benefit could take the form of the traditional defined benefit (DB) annuity, defined contributions into military members' Thrift Savings Plan (TSP) accounts, or some combination of the two. Although past study groups, such as the DMC and PCMC, assumed that the old-age benefit would be in the form of an annuity, the DSB recommended that the benefit take the form of DOD-paid defined contributions into members' TSP accounts. The DSB felt that providing personnel with defined contributions was more in step with trends in the private sector than providing them with annuities. Assuming a 5-percent real annual return to a balanced TSP portfolio of stocks and bonds, the DSB calculated that a contribution rate of 15 percent of basic pay would be required to provide personnel who serve at least 20 years with as much old-age retirement benefit as the current system does.

Defined contribution (DC) systems are sometimes perceived as being too risky, especially for older people, because their payouts depend on the performance of financial markets. But many civilian-sector employees, including many college faculty as well as CNA and RAND employees, are covered by TIAA-CREF and other defined contribution systems. The advantage of making the old-age part of the military retirement system a defined contribution system is that funds that are allowed to accumulate over longer periods are actually subject to less market risk than funds invested for shorter periods. Military members, who would get their defined contributions at relatively young ages, would have many years to grow their accounts before accessing them for retirement purposes.

While a DC system is likely to be more appealing than an annuity to personnel who serve just long enough to become vested and then transition to a civilian job, annuities might still be more appealing to those who serve for long periods. In lieu of a straight DC system, one option would be to continue to base the old-age benefit on the standard annuity formula but permit personnel to take a lump-sum distribution upon departure in lieu of an annuity, provided that it is rolled over into another tax-deferred retirement instrument (e.g., 401(K) plan or IRA).<sup>31</sup> This option might appeal to personnel who serve for shorter periods.

Another option would be to base the old-age part of the system on defined contributions but allow personnel who serve beyond a certain career gate (e.g., 20 years) to forgo their DOD contributions in favor of the traditional annuity.<sup>32</sup> Such a scheme would preserve the old-age benefits of personnel who serve for 20 or more years while providing personnel who serve for shorter periods the opportunity to grow their TSP accounts over longer periods.

Integration of the active and reserve forces would be easy under a defined contribution system. DOD would contribute into the same account at the same rate regardless of whether the service is in active or reserve status. The system would be seamless.

The form of the old-age benefit has implications for the efficiency of personnel management. Under today's annuity system, future military retirement liabilities are accounted

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<sup>31</sup> The British, in fact, allow this option in their Armed Forces Pension Scheme (AFPS); see appendix A.

<sup>32</sup> This option was advanced by Jerry Cox of CNA in a memo entitled "Realizing Savings from Voluntary Retirement Reform."

for by the annual retirement accrual charge. This system has two problems. The first is that the accrual charge is based on a long-term average estimate of the likelihood that a military entrant will become a retiree. Changes in the experience mix of the force have no immediate impact on the accrual charge, with the result that force managers have no incentive to account for retirement costs in decisions about the experience mix of the force. The second, related problem is that dollars are not fungible between the retirement pay account and other accounts. Retirement costs saved through more efficient force management cannot be used elsewhere. Under a defined contribution system, the government would incur a real cost of retirement at the time that military labor services are rendered and dollars would be immediately fungible between accounts. Both facts imply that force managers would have much more incentive to actively manage the force than they have today.

***Managing separations from the force.*** Under the current system, the annuity that is received from the point of separation until full retirement age may be thought of as the second-career separation benefit. It is the part of the current system that is used to induce voluntary separation from the force and to compensate personnel for second-career earnings losses that they may experience due to the transition from military to civilian life. Today, the separation part of the system is common to all. The problem is how to gain more management flexibility while being fair to personnel.

One option is through a PCMC-like system of transition benefits that is common to all, but provided earlier. By providing a transition benefit that is vested at YOS 10 rather than YOS 20, designers of the PCMC plan hoped to encourage higher retention before YOS 10 while allowing for the earlier separation of personnel in the Y&V skills. But, to encourage longer careers in other skills, the PCMC plan offered transition benefits that were much less generous to those separating in midcareer (e.g., YOS 20) than the annuity provided today under the formula  $0.025 * YOS * \text{high-3 years' basic pay}$ .<sup>33</sup>

Rather than a system of transition benefits that is vested earlier and common to all, a second way to gain management flexibility is through variation in the YOS points at which personnel become eligible for separation benefits. For example, separation payments might be made available before YOS 20 in the Y&V skills but delayed well past YOS 20 in skills where more experience is desired. Such a system would permit the Army to voluntarily separate infantrymen before the 20-year mark while keeping for longer careers – by postponing eligibility for separation payments -- doctors, nurses, electronics repair technicians and other personnel in skills that have high training costs and productivity profiles that do not peak until later ages. Given the general conclusion by the recent study groups that officer career lengths need to be increased, the separation payment point for officers would be increased. Under Rostker's up-and-stay plan, officers might not be eligible for separation payments before YOS 30.<sup>34</sup>

Some will object that pushing back the vesting point to 30 years in some skills and providing nothing (other than the old-age pension) to personnel who separate earlier, as the

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<sup>33</sup> As part of a significant redesign of their retirement system, the British have *cut in half* the second-career benefit provided to personnel who separate before the full retirement age. They gave the following reason for these changes: "As the skills that personnel acquire in Service are now generally more marketable outside than they were when the current IP arrangements were introduced in 1973, it is no longer considered that such a generous safety net is required for second careers" (page 2 of [www.mod.uk/issues/pensions/new\\_afps/edps.htm](http://www.mod.uk/issues/pensions/new_afps/edps.htm)).

<sup>34</sup> Extending careers beyond 30 years requires elimination of the 75-percent cap on retired pay as a percentage of high-3 years' basic pay. Personnel who now serve beyond 30 years (mostly flag rank officers) receive no additional year-of-service credit on their pensions. This cap is an irritant to long-serving personnel and would be a discouragement to attempts to expand the fraction of personnel serving beyond 30 years.

DMC proposal did, is a harsh policy because it does not do anything to assist the transition of personnel who serve for long periods but not all of the way to the separation payment point for their skill. So a third possibility is a blend of the two options just discussed. First, provide all personnel who reach a certain career gate (e.g., 12 to 15 years) with eligibility for a payment whose purpose is to assist with the transition to civilian life and whose amount is set at a fairly low level to discourage excessive early departures (much lower than the amount available in today's annuity formula). The transition payment could take the form of a cash payment or short-term annuity.<sup>35</sup> Second, provide exit payments (bonuses, if you will) that are targeted by skill to the career point at which the services want to begin inducing separations in that skill. Thus, the exit payments for infantrymen and pilots might begin at YOS 15, while doctors and nurses do not qualify for exit payments until a much later date. For purposes of career planning, the payment dates for the exit payments should not vary too much on an annual basis, but they could be manipulated within certain ranges to better manage personnel inventories and adjust more quickly to imbalances between supply and demand within different career zones.

The form of the separation payments is an open question. One possibility is to provide separatees with an annuity from the age at separation until the age at which the old-age benefit begins. But offering people second-career annuities rather than cash separation payments may not be fully efficient. Evidence suggests that military personnel have significantly higher real personal discount rates than the real interest rate at which the government borrows money [33]. This being the case, offering separation payments in the form of an annuity is not the most efficient method of payment. If people discount future dollars at a higher rate than the government, both could be made better off by offering separatees the choice between an annuity and a lump-sum payment computed at some intermediate discount rate. Offering personnel a choice between an annuity and a lump-sum payment constructed at an intermediate discount rate can both reduce the cost of the separation payment system and provide personnel with stronger retention and work incentives before the separation point.

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<sup>35</sup> To assist in the transition to the civilian sector, the British provide all retirement-eligible personnel with a tax-free lump-sum payment equal to 3 years of pension payments upon separation.

## **COST AND FORCE STRUCTURE ANALYSIS OF SEVERAL ALTERNATIVES**

One of the main stumbling blocks to reform of the military retirement system is a fear that a revised system will fail to provide the same experience and quality as the current force. The purpose of this section is to estimate the costs and force structure effects of several specific proposals to modify the system using the Asch-Warner model referenced earlier for the purpose of gauging how different plans might affect the force. Briefly, the model describes a force in steady state in which entrants, who vary with respect to tastes for military service, make retention decisions every 4 years. The model tracks the retention decisions and promotion outcomes of the entrants during a 30-year career and aggregates to a total force dimensioned by rank and years of service. Personnel make decisions based on the structure of the compensation system they confront as well as personnel policies, such as rank-to-rank promotion opportunities and high-year-of-tenure (HYT) policies. The model calculates expected man-years per accession (MPA) and the number of accessions required to sustain a force of given size. It also calculates the cost of the steady-state force based on the given compensation policy. For this analysis, the model was calibrated to fit the FY 2004 Army enlisted force of 413,000 personnel as closely as possible.<sup>36</sup>

The plans to be analyzed are described in table 1. Table 2 illustrates benefits that these plans would provide to enlisted personnel who retire in different ranks after various years of service. According to table 2, under the current system an E-7 with 20 years will receive about \$18,500 per year, an E-8 with 25 years will receive \$27,900, and an E-9 with 30 years will receive \$43,700. The table also shows the present value (at separation) of the second-career annuity, defined as the annuity received between the age of separation and age 60. Two present values are shown, one that discounts the annuity at a 2.5-percent real interest rate (the government rate) and one that discounts it at 10 percent (a personal discount rate). At a 10-percent discount rate, an E-7 with 20 years of service would place a lump-sum value of about \$173,000 on the second-career annuity at the time of separation; the lump-sum equivalent cost to the government is \$303,000. These amounts can be compared to plans that do not provide a second-career annuity but rather a lump-sum cash separation payment.

The first alternative is the Grace Commission plan. To make the military retirement system fairer, the Grace Commission proposed vesting personnel in an old-age annuity after just 5 years of service. But the commission also recommended elimination of the second-career annuity for personnel serving more than 20 years, effectively converting the military retirement system to an Old-Age System (OAS). The Grace Commission's proposal lacked any civilian benefit, and it eliminated much of the deferred retention incentive provided by the current system's second-career annuity. The Grace Commission plan is useful to examine because its effects illustrate the retention value of the current system's second-career annuity.

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<sup>36</sup> The model's predictions about the effects of pay increases are consistent with existing empirical estimates of pay responsiveness. To illustrate, a 10-percent across-the-board pay increase is predicted to increase first-term reenlistments by 18 percent.

**Table 1**  
**Retirement systems to be analyzed**

|   |   |
|---|---|
| <b>Current system:</b>  | <ul style="list-style-type: none"> <li>• Annuity begins at separation after 20 years of service (YOS) and is paid for life</li> <li>• Annuity = <math>.025 * YOS * \text{High-3 Years' average basic pay}</math></li> <li>• Annuity is capped at 75% of High-3 basic pay after YOS 30</li> <li>• Annuity is fully inflation protected (indexed to Consumer Price Index)</li> </ul>  |
| <b>OAS:</b>   | <ul style="list-style-type: none"> <li>• Annuity same as current system</li> <li>• Annuity payments do not start until age 60</li> </ul>  |
| <b>PCMC:</b>  | <ul style="list-style-type: none"> <li>• Annuity payments start at age 60 using current system formula</li> <li>• Separation Payment System vested at YOS 10 based on annual DOD contributions into a TSP account with the following contribution rates as a percentage of basic pay: 0% for YOS 0-5, 20% for YOS 6-10, 25% for YOS 11-20, 15% for YOS 21-25, 5% for YOS 26-30</li> </ul>   |
| <b>General features of FERS coupled with separation payment system:</b> | <ul style="list-style-type: none"> <li>• Old-age benefits based on a combination of defined benefit annuity (DBA) and defined contributions into Federal Thrift Savings Plan (TSP)</li> <li>• DBA vested after year 5 with payments based on age and YOS: 5-19 YOS = age 62, 20-29 YOS = age 60, 30+ YOS = age 57</li> <li>• DBA = <math>.015 * YOS * \text{High-3 year's average basic pay}^a</math></li> <li>• TSP contributions = 5% of basic pay and require a matching 5% contribution</li> <li>• Individual contributions are vested immediately and government contributions vested after YOS 3</li> <li>• Separation payments: <math>SP = (1 + .25 * (YOS - 10)) * \text{Final Basic Pay}</math></li> <li>• Eligibility for separation payments to be determined by DOD force managers</li> </ul> |
| <b>Special cases of FERS analyzed below:</b>                            | <ul style="list-style-type: none"> <li>• <b>FERS1:</b> personnel eligible for separation payment at any YOS after YOS 10</li> <li>• <b>FERS2:</b> personnel eligible for separation pay within 3 years of current HYT points (E-4 = 13, E-5 = 20, E-6 = 22, E-7 = 25, E-8 = 27, E-9 = 30)</li> </ul> <p>Under FERS1 and FERS2, E-4 and below receive a 5% basic pay increase; E-5 and above receive a 7% increase.</p>  |
| <b>OAS with TSP &amp; gate pay</b>                                      | <ul style="list-style-type: none"> <li>• Old-age annuity vested at YOS 10 starting at age 60 based on current formula</li> <li>• Personnel may take actuarially reduced annuity at separation</li> <li>• Government TSP contributions at 50% matching rate up to 5% of pay</li> <li>• Gate pay equal to 1-year's basic pay at 5-year intervals starting at YOS 10</li> </ul>  |

<sup>a</sup>FERS DBA multiplier is .01 and not .015. FERS annuity multiplier was raised to account for the fact that basic pay is around two-thirds of RMC.

**Table 2**  
**Benefits under alternative plans**

|  | <b><u>E-5 with<br/>10 YOS</u></b> | <b><u>E-6 with<br/>15 YOS</u></b> | <b><u>E-7 with<br/>20 YOS</u></b> | <b><u>E-8 with<br/>25 YOS</u></b> | <b><u>E-9 with<br/>30 YOS</u></b> |
|--|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| <b><u>Current system</u></b>                     |                                   |                                   |                                   |                                   |                                   |
| Annuity <sup>a</sup>                             | 0                                 | 0                                 | \$18,500                          | \$27,900                          | \$43,700                          |
| 2 <sup>nd</sup> Career PV at 10% DR <sup>b</sup> |                                   |                                   | \$173,000                         | \$240,000                         | \$316,000                         |
| 2 <sup>nd</sup> Career PV at 2.5% DR             |                                   |                                   | \$303,000                         | \$374,400                         | \$439,800                         |
| <b><u>Old-Age System</u></b>                     |                                   |                                   |                                   |                                   |                                   |
| Annuity at age 60                                | \$7,100                           | \$11,500                          | \$18,500                          | \$27,900                          | \$43,700                          |
| <b><u>PCMC proposal</u></b>                      |                                   |                                   |                                   |                                   |                                   |
| Separation fund                                  | \$27,900                          | \$78,800                          | \$150,800                         | \$225,000                         | \$294,200                         |
| Annuity at age 60                                | \$7,100                           | \$11,500                          | \$18,500                          | \$27,900                          | \$43,700                          |
| <b><u>FERS</u></b>                               |                                   |                                   |                                   |                                   |                                   |
| Separation fund                                  | \$28,900                          | \$79,800                          | \$202,100                         | \$277,000                         | \$389,400                         |
| DB Annuity                                       | \$4,000                           | \$7,400                           | \$11,900                          | \$17,900                          | \$28,000                          |
| TSP at age 60                                    | \$87,800 <sup>c</sup>             | \$137,100                         | \$193,100                         | \$284,700                         | \$380,300                         |
| Total annuity at age 60                          | \$10,700                          | \$17,900                          | \$27,700                          | \$39,700                          | \$57,000                          |
| <b><u>OAS-Gate Pay</u></b>                       |                                   |                                   |                                   |                                   |                                   |
| DB Annuity at age 60                             | \$6,200                           | \$11,500                          | \$18,500                          | \$27,900                          | \$43,700                          |
| TSP at age 60                                    | \$28,900                          | \$60,000                          | \$100,600                         | \$167,000                         | \$271,700                         |

<sup>a</sup>Current system benefits based on high-3 years' average basic pay.

<sup>b</sup>PV = present value; DR = discounted rate.

<sup>c</sup>Assumes a 4% real return on TSP accounts and includes individual contributions.

The second alternative is the Zwick Commission (PCMC) proposal for a two-part system of benefits. First, it proposed that all personnel be vested in an old-age annuity after 10 years of service. Second, it proposed that each member receive a separation fund financed by DOD contributions. The contributions would begin after 5 years of service and be placed into interest-bearing accounts similar to the Thrift Savings Plan (TSP) in which military personnel now participate. Personnel would be vested in these accounts after 10 years of service. The purposes of the accounts were twofold: (a) provide a deferred retention incentive and (b) provide a transition (separation) benefit that personnel could use during the move from the military back to the civilian sector. Table 2 illustrates this plan's benefits for various personnel. It is interesting that the PCMC separation funds for personnel who serve 20 or more years are almost the same as the present values of the second-career annuities under the current system computed at a 10-percent discount rate.

Since the mid-1980s, new federal employees have been covered by the Federal Employee Retirement System (FERS). So it is natural to ask what the impact would be of folding military

personnel into this system. FERS provides a two-part system of retirement benefits: (a) a defined benefit (DB) annuity and (b) government defined contributions (DCs) into the Federal Thrift Savings Plan (which participants can annuitize upon reaching retirement age). (Since military personnel are now eligible to participate in FERS, the institutional mechanism for folding military personnel into FERS is now in place.) The government matches individual contributions into TSP at a one-to-one rate up to the first 5 percent of salary. TSP contributions are vested after 3 years of service, and the DB annuity (DBA) is vested after 5 years. Table 2 shows benefits that various military personnel might receive under FERS. It shows the DBA assuming an annuity multiplier rate of 1.5 percent and the total annuity that personnel would receive if they hold their TSP accounts until age 60 and then annuitize them.<sup>37</sup>

Analysis of FERS by Asch, Johnson, and Warner [34] indicated that, by itself, FERS would lack sufficient retention incentives to provide as much average experience as the current force. Furthermore, FERS by itself lacks transition benefits, such as those provided by the PCMC proposal. So in the analysis that follows, FERS is supplemented by a system of separation payments defined by the formula  $SP = (1 + .25(YOS - 10)) * \text{Final Basic Pay}$ . Thus, personnel separating with 10 years of service would receive 1 year's basic pay; the separation payment would grow by one-quarter of a year's basic pay for each year of service thereafter. Table 2 shows separation payment amounts for personnel separating at various career points. The separation payments under the assumed formula are, in fact, more generous for long-serving personnel than the present value of the current system's second-career annuity for these personnel.

The last alternative is a variant of a proposal put forward by Mr. Fred Cook, a member of the Defense Advisory Commission on Military Compensation. Similar to the Grace Commission proposal, Mr. Cook proposed that all personnel be vested after YOS 10 in an annuity to begin at age 60, with the following twist. Rather than waiting until age 60 to begin the annuity, personnel would be able to take an actuarially reduced annuity immediately upon separation. In addition to this annuity, personnel would receive government matching contributions into TSP accounts at a 0.5-to-1 rate (50-cent government contribution for each dollar of individual contribution).

Analysis of Mr. Cook's original proposal indicated that, like the Grace Commission's proposal, it lacked sufficient retention incentives. The proposal could be enhanced several ways, one of which is through higher active duty pay and another of which is through a separation pay system such as those in the PCMC and FERS proposals. Rather than coupling Mr. Cook's proposal with some form of separation pay, I couple it with a new concept that I call "gate pay." Gate pay would give a cash payment to all personnel who complete 10 years of service and then make payments to them at *discrete* intervals thereafter. What are the advantages of gate pay?

- Gate payments are neutral to the separation decision.
- They are a deferred (but not excessively deferred) incentive to work and get promoted.
- Since they will be paid at discrete intervals, they will be larger and more visible than if they were paid in regular paychecks.
- If a person receives a gate payment and then leaves, the gate payment serves as a separation payment. By not putting them in regular paychecks, the gate payment is more likely to be available to assist in transitions to the civilian sector when personnel do leave.

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<sup>37</sup> We assume, conservatively, that personnel earn a real return of 4 percent on their TSP accounts. The annuity multiplier under FERS is 1 percent, not 1.5 percent. I adjusted the multiplier upward to reflect the fact that civil service annuities are based on salary, while military annuities are based on basic pay, which is roughly 2/3 of RMC.

- Personnel would be encouraged to place their gate payments into TSP accounts (on a tax-free basis, to encourage saving) for later use, but would be free to consume them immediately if they wish. Flexibility in their use would thus be an attraction.
- Since gate pay is not part of basic pay, it does not increase future retirement costs as would basic pay increases.

I analyze the effects of Mr. Cook’s plan coupled with gate payments at the start of years 11, 16, 21, 26, and 30 equal to three-quarters of a year’s basic pay at each gate. The gate payments are analogous to a basic pay increase of 15 percent for all personnel with more than 10 years of service. But, as just argued, there are advantages over increasing basic pay only. Furthermore, because it is part of the career package of all personnel, it will be perceived as less risky than compensation packages that are heavy on special and incentive pays and thus will help diffuse criticism that the plan takes away too much pay for long-serving careerists.

Tables 3 and 4 contain the analysis results. Table 3 shows the experience distribution predicted for each retirement system, the fraction of entrants expected to remain to each YOS point, man-years per accession, and the number of required accessions. Table 4 shows the per-capita basic pay, RMC, and retirement accrual cost of each system as well as its total cost.<sup>38</sup>

**Table 3**  
**Force structure effects of alternative retirement systems**

|                        | <b>Current</b> | <b>OAS</b> | <b>PCMC</b> | <b>FERS 1</b> | <b>FERS 2</b> | <b>OAS<br/>with<br/>TSP &amp;<br/>gate pay</b> |
|------------------------|----------------|------------|-------------|---------------|---------------|--|
| <b>Force structure</b> |                |            |             |               |               |  |
| YOS<br>distribution:   |                |            |             |               |               |  |
| 0-4                    | 51             | 57         | 51          | 51            | 50            | 50   |
| 5-10                   | 25             | 24         | 26          | 27            | 25            | 26   |
| 11-20                  | 21             | 15         | 19          | 19            | 19            | 20   |
| 21-30                  | 4              | 4          | 4           | 4             | 6             | 4  |
| MPA <sup>a</sup>       | 5.5            | 4.8        | 5.5         | 5.5           | 5.6           | 5.5  |
| Accessions             | 75,400         | 85,000     | 75,000      | 74,800        | 74,400        | 74,600   |

**Percentage of entrants predicted to stay at least:**

|          |     |     |     |     |    |    |
|----------|-----|-----|-----|-----|----|----|
| 5 years  | 29  | 27  | 31  | 32  | 30 | 30 |
| 10 years | 17  | 13  | 18  | 19  | 16 | 18 |
| 15 years | 11  | 8   | 11  | 11  | 11 | 11 |
| 20 years | 10  | 6   | 6   | 6   | 8  | 7  |
| 25 years | 2   | 2   | 2   | 2   | 3  | 2  |
| 30 years | 0.3 | 0.5 | 0.5 | 0.4 | 1  | 1  |

<sup>a</sup>MPA = Man-years per accession.

<sup>38</sup> Accrual cost is computed assuming a 2.5-percent real government borrowing rate.

The model is calibrated so that under the current system 51 percent of the force has less than 5 years of service, 25 percent has between 5 and 10 years, 21 percent has 11 to 20 years, and 4 percent has more than 20 years. These percentages are practically the same as the Army's FY 2004 force.<sup>39</sup> The model predicts that 29 percent of entrants will reach the 5<sup>th</sup> year of service, 17 percent will survive to the 10-year point, 10 percent will survive to the 20-year point, and only 0.3 percent will stay for a 30-year career. This career survival pattern is almost identical to the pattern derived from actual Army enlisted continuation rates. Entrants stay for 5.5 years on average, and 75,400 accessions are needed annually to sustain the force of 413,000 personnel. The force costs \$18.9 billion (table 4).

**Table 4**  
**Costs of alternative systems**

|   | <b>Current</b>       | <b>OAS</b> | <b>PCMC</b> | <b>FERS 1</b> | <b>FERS 2</b> | <b>OAS<br/>with<br/>TSP &amp;<br/>gate pay</b> |
|---|----------------------|------------|-------------|---------------|---------------|--|
| Per-capita:   |                      |            |             |               |               |  |
| Basic pay   | \$24,000             | \$23,000   | \$23,900    | \$24,800      | \$26,400      | \$24,100                                       |
| RMC   | \$39,700             | \$38,500   | \$39,600    | \$40,500      | \$41,200      | \$39,900                                       |
| Retirement<br>accrual                               | \$5,100 <sup>a</sup> | \$1,500    | \$5,400     | \$5,100       | \$4,800       | \$4,200  |
| Total cost <sup>b</sup><br>(413,000<br>endstrength) | \$18.9B              | \$16.8B    | \$18.6B     | \$18.9B       | \$19.0B       | \$18.9 <sup>c</sup>                            |

<sup>a</sup>Retirement accruals calculated assuming a 2.5% real government borrowing rate.

<sup>b</sup>Cost is sum of basic pay and retirement accrual.

<sup>c</sup>Includes gate pay cost.

Without any other changes to the compensation system, the Grace Commission's old-age-only retirement system is predicted to cause substantially less retention and much larger accession requirements. The probability that an entrant remains for a 20-year career drops 40 percent. This simulation illustrates the retention value of the second-career annuity in the current retirement system. Costs fall, but only because the OAS system force is more junior.

The old-age annuity parts of the OAS and PCMC proposals are the same (although the OAS would vest at year 5 and PCMC vests at year 10). The essential difference is that the PCMC proposal adds in separation benefits vested at YOS 10. For junior personnel, the earlier vesting in the old-age annuity coupled with the availability of separation benefits at YOS 10 more than compensates for the (comparative) loss of second-career benefits later in the career: the model predicts slightly higher retention (and more personnel in YOS 5-10) than with the current system before YOS 10. Retention is predicted to be lower than under the current system in the range of YOS 16 to 20 but again higher in the post-YOS-20 range. Overall, the PCMC force is similar in experience to the current system force but costs slightly less.

<sup>39</sup> In fact, the experience percentage distribution of the Army's enlisted force has changed little since the late 1980s.

The two FERSs produce similar man-years per accession as the current force but with different experience patterns. They also cost about the same as the current force. FERS2, which delays eligibility for separation benefits until personnel are within 2 years of their HYT points, has higher retention late in the career due to the delayed eligibility for separation payments but less retention before the 10-year mark. The comparison of FERS1 and FERS2 shows the effect of varying eligibility for separation payments and how eligibility might be varied by skill to influence career retention patterns.<sup>40</sup>

The final system is the one that combines an old-age annuity with TSP contributions and gate payments equal to three-fourths of a year's basic pay and paid at 5-year intervals beginning at YOS 10. Gate payments of three-fourths of a year's basic pay were chosen because these are the amounts that keep the cost of this system comparable to the costs under the current system. This system produces a force with comparable years per accession and an experience distribution similar to the current force. The advantages of this system were listed above. Its potential cost might be unwillingness of older personnel to separate voluntarily when they reach an HYT point or in cases of reductions-in-force.<sup>41</sup>

The effects of these plans on force structure and cost indicate that the current retirement system is not inefficient at producing the current force, at least in comparison with other alternatives that also defer a significant amount of compensation to the post-career period.<sup>42</sup> In fact, none of the proposed plans offer the prospect of reducing costs given the constraint that the system produce as many man-years per accession as the current system. But the plans accomplish two objectives.

First, they address the unfairness of the current system by meeting the retirement accumulation needs of personnel who serve for significant periods, but not long enough to qualify for benefits under the current system. While several plans maintain the current system's structure of old-age benefits, the plans that provide TSP contributions, but reduced annuities, would enable personnel who serve 20 or more years to enjoy larger total retirement benefits than they would receive under the current system.<sup>43</sup>

Second, the plans offer the opportunity for more flexible, and more innovative, management of the career force. Smooth benefit growth from YOS 10 onward eliminates the 20-year focal point under the current system with its golden handcuffs. As a result, force managers

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<sup>40</sup>For example, separation payments could be made earlier for personnel in skills that need youth and vigor than in skills requiring more experience.

<sup>41</sup>Current law pays an involuntary separation payment to personnel who are forced out with less than 20 years of service. The problem could be mitigated by payment of involuntary separation pay to anyone reaching an HYT point or separated during a reduction in force under the current formula of 10 percent of annual basic pay per year of service.

<sup>42</sup> An interesting thought experiment is to ask what force would evolve if the current system's second-career annuity were eliminated while active duty pay were increased enough to keep total cost constant. According to the model, a 10-percent basic pay increase for E-1/E-4 personnel and a 15-percent increase for E-5/E-9 personnel would keep costs constant while increasing the average experience level of the force. In fact, man-years per accession rise from 5.5 to 5.8 and accessions fall from 75,400 to 71,300. Careerists would comprise 51 percent of the force rather than 49 percent under the current system, and the new force would have more personnel in the 21- to 30-year range. The force would clearly be more productive. The increase in average experience arises from the fact that putting all of the savings from elimination of the second-career annuity into active duty pay has a larger effect on first-term retention than any of the retirement alternatives in table 2. This thought experiment illustrates the technical efficiency of upfront active duty pay over deferred compensation, and it suggests that the case for provision of deferred retirement benefits must be made on grounds other than technical efficiency.

<sup>43</sup> This statement is, of course, conditional on the real rate of return on TSP. The calculations in table 2 assume a 4-percent real return, which is (purposely) conservative by historical standards.

would be freed to vary HYT points and eligibility for separation payments on a skill-by-skill basis. They could push back HYT points and delay the start of separation pay when that is desirable (as in the case of skills with high training costs and high personnel productivity growth with respect to experience) or make separation payments before the 20-year mark when that is desirable (as in the case of the so-called youth and vigor skills). Several recent study groups have argued for longer careers for officers for up to 40 years. The plans would easily accommodate significantly longer careers for officers. Finally, the availability of separation benefits earlier in the career would make adjustments to overall force size less problematic.

## APPENDIX: NEW BRITISH ARMED FORCES PENSION SCHEME

The British have just overhauled their military retirement system in significant ways that are useful to review because their new plan imbeds some of the features that a revised U.S. system ought to include. Faced with competing objectives, the British made a series of changes to their system that they believe will be cost-neutral.<sup>44</sup> First, benefits are provided in two parts: the old-age pension and the Early Departure Payment (EDP). Personnel are vested in the old-age pension after just 2 years of service. The pension is based on final pensionable pay (FPP), which includes salary and some other special pays. FPP is based on the best (not average) of the last 3 years' pay that constitutes FPP. Personnel must serve a full 35-year career in order to receive an immediate old-age pension beginning at age 55. Anyone who separates before age 55 or 35 years of service will not receive the pension until age 65 (increased from age 60 or age 62 under their old system). The old-age pension accrues at the linear rate of 1/70<sup>th</sup> of FPP per year of service so that the old-age pension of someone who serves the full 35-year career is one-half of FPP.<sup>45</sup> The fact that their system now delays for 10 additional years the start of the old-age annuity for anyone who separates short of a 35-year career creates much stronger retention incentives for those who reach the later stages of a career. The British old-age annuity ages are in fact remarkably similar to those recommended in 1978 by the PCMC.

The EDP changed the preretirement part of the system in significant ways. First, the retirement point for all personnel was set at age 40 or 18 years of service, whichever comes later. Officers were previously eligible to retire after 16 years of service or age 38, but enlisted personnel could not retire until 22 years of service or age 40. Second, the EDP payments were *reduced in half compared with the preretirement annuities under the old system*. For example, under the old system, a Major retiring at age 40 with 18 years received an immediate payment (IP) equal to £12,256; under the new system, the EDP is £6,138. At age 55, the EDP is increased to 75 percent of the old-age annuity (£9,207) for the remaining 10 years before the old-age pension of £12,256 kicks in at age 65.

The dramatic (50-percent) reduction in “second-career” benefits for those who leave before the full-retirement point, coupled with the delay in the age at which the old-age annuity begins for such people, will provide a significant change in the return to a military career and in the incentive to separate at various points in a career. First, because the changes reduce the return to separating in midcareer without increasing the payoff to a long career, the changes reduce the expected payoff to junior personnel of a military career. The British no doubt believe that any adverse effect of their new system on early career retention can be effectively (and more efficiently) managed with active duty pays. Personnel who continue to the midcareer range will have a stronger incentive to stay for a full career. The fact that the British are now calling their system of transition payments Early Departure Payments seems to signal that they want personnel to stay for longer careers.<sup>46</sup>

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<sup>44</sup> Several documents describing their old and new plans and the analysis that led them to change their system may be found at [www.mod.uk/issues/pensions/](http://www.mod.uk/issues/pensions/).

<sup>45</sup> The U.S. military pension peaks at 75 percent of high-3 years' basic pay after a 30-year career; however, since basic pay is typically around 70 percent of Regular Military Compensation (RMC), the “full-career” replacement rate of total compensation is closer than it first appears.

<sup>46</sup> The British gave the following reason for these changes: “As the skills that personnel acquire in Service are now generally more marketable outside than they were when the current IP arrangements were introduced in 1973, it is no longer considered that such a generous safety net is required for second careers....The EDP will continue to offer

The British system differs from the U.S. system in other important respects. First, unlike the U.S. system, the EDP is not adjusted for inflation before age 55, although it is readjusted at age 55 for prior price level growth and inflation-protected thereafter.<sup>47</sup> The old-age annuity is also fully inflation-protected. A second way in which the British system differs from the U.S. system is in permitting what is called “commutation.” Commutation permits people to receive benefits in the form of a lump-sum payment rather than an annuity. For example, the Major who separates at age 40 can take the EDP in the form of a £36,768 lump-sum payment rather than 15 annual annuity payments of £6,138.<sup>48</sup>

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a uniquely generous benefit to the Armed Forces, reflecting the special nature of a Service career.” Although they did not state explicitly the objective of encouraging longer careers, their plan will have that effect. See p. 2 of [www.mod.uk/issues/pensions/new\\_afps/edps.htm](http://www.mod.uk/issues/pensions/new_afps/edps.htm).

<sup>47</sup> The IP was not adjusted for inflation in their old system either, so the lack of inflation adjustment in the EDP does not represent a change.

<sup>48</sup> The discount rate that equates the present value of the annuity with the lump sum is 18 percent, a number exactly equal to the discount rate implied by the VSI-SSB choice during the drawdown. If the U.S. drawdown experience is any indication [33], a significant number of British personnel will commute their EDP payments.

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