DEFENSE MANPOWER:

COMPENSATION ISSUES FOR FISCAL YEAR 1977

Background Paper No. 6
April 2, 1976

CONGRESS OF THE UNITED STATES
Congressional Budget Office
Washington, D.C.

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price $1.45

PREFACE

As the Budget Committees consider the First Concurrent Resolution targets for national defense, they must deal with a number of issues in the area of military, civilian, and retired pay. Decisions about pay levels and compensation reform have major consequences both in fiscal year 1977 and in the long run.

These major budget issues are addressed in the national defense section of the CBO Report, Budget Options for Fiscal Year 1977. This document explains in greater detail the compensation issues and alternatives discussed in that report and examines some additional considerations.

This paper was prepared by Mr. Robert F. Hale and Dr. Gary R. Nelson of the National Security and International Affairs Division of the Congressional Budget Office.

CONTENTS

TABLES

APPENDIX TABLES

SUMMARY

Manpower costs are a significant part of the total outlays of the Department of Defense (DoD), comprising at least 54 percent in fiscal year 1976. And manpower costs are growing; in fiscal year 1964 manpower consumed only 43 percent of all outlays. The major factor in this sharp growth has been increased compensation of employees, which has more than offset a decline of almost 20 percent in numbers of DoD employees between 1964 and 1976. In view of these trends, this paper concentrates on alternative compensation policies that reduce DoD manpower costs, though it does develop one alternative that increases costs.

The paper combines the alternatives discussed below into a low option for defense manpower that is 8 to 10 percent below "current policy" costs in fiscal years 1977-81. Since current policy costs hold constant resources devoted to manpower but include adjustments for pay raises and other factors driven by inflation, the low option represents a real cut in defense manpower spending. And the low option demonstrates that Congress could reduce manpower costs significantly in fiscal year 1977 and beyond, even without reducing defense employment. In fact, Congress could reduce them below the spending cuts recommended by the President. In the President's budget, defense manpower costs are 7 percent below current policy costs in fiscal year 1977.

Pay Caps

A limitation, or "cap," of 5 percent on the fiscal years 1977 and 1978 pay raises for military and general schedule civilian employees would reduce current policy costs by $2.2 billion in fiscal year 1977 ($1.6 billion for military and $0.6 billion for civilians) and $3.7 billion in fiscal year 1978. The President's fiscal year 1977 budget actually recommends a slightly more austere cap of 4.7 percent. In addition, the President recommends a cap of 3.4 percent on the average raise of wage board (i.e., blue collar) civilians that would reduce current policy costs by another $0.2 billion in fiscal year 1977.

Pay caps not only save money, but also affect DoD's recruiting and retention abilities. This report does not consider effects on civilian recruiting and retention, nor on military retention, but it does analyze effects of pay caps in the important area of enlisted recruiting. CBO estimates that, given pay raises of 5 percent in fiscal years 1977 and 1978, DoD will be able to attract enough enlisted recruits to keep force sizes roughly constant while maintaining levels of recruit quality that prevailed in the recent past. This finding is true under a wide range of assumptions about fiscal years 1977-78 levels of unemployment and private sector civilian earnings, both of which influence enlisted recruiting.

68-716 O - 76 - 2

Beyond 1978 the picture is less clear. With the unemployment levels and civilian earnings forecast under 5 percent economic growth (CBO's "path B" economic assumptions), and assuming a return to comparability raises beyond fiscal year 1978, DoD should be able to enlist enough recruits to maintain force sizes and quality standards. However, if employment or civilian earnings improve more than assumed in path B, higher raises may be necessary.

Reform of Retirement Benefits

The current military retirement system is expensive. Annuities to retirees will cost $7.4 billion in fiscal year 1976, 8 percent of total DoD outlays. The current policy estimate shows retirement costs increasing to $12.8 billion by fiscal year 1981, over 9 percent of total outlays. Moreover, because no annuity is awarded until completion of 20 years of service, many argue that the current retirement system causes too few to remain after the first term of service (when retirement is distant), too many to stay between 10 and 20 years (because retirement is imminent), and too few to remain past 20 years (when staying in means foregoing one's pension).

If the military retirement system is to create different retention incentives, then its benefits must be reformed. The Retirement Modernization Act (RMA), which is currently before Congress (H.R. 7769), reforms nondisability military retirement benefits and should at least partially correct the retention problems noted above. RMA would also cut costs in the long run. By the year 2000, it should reduce annual costs by about $800 million in today's dollars. But RMA would actually increase costs in the first few years after its implementation because of the increased costs of early vesting.

There have also been other proposals to reform benefits. In 1971 a governmental Interagency Committee (IAC) proposed a plan that is more far-reaching than RMA. By the year 2000, the IAC plan would save $2.1 billion per year in today's dollars.

Contributory Retirement

Currently, military personnel do not contribute directly to their retirement benefits. Transforming military retirement to a contributory system would significantly reduce costs in fiscal year 1977 and beyond. The amounts would depend on how contributory retirement is structured. This paper considers contribution levels of 7 percent of basic pay (like the federal civil service) and an arbitrarily chosen level of 10 percent, which still falls short of fully funding military retirement. Savings in fiscal year 1977 would range from $0.7 billion, under a 7 percent system with voluntary participation, to $1.7 billion, under a 10 percent system with compulsory participation.

A contributory system should reduce the number reaching retirement, which many would argue is desirable, but would not encourage first-term reenlistments or careers longer than 20 years. Hence it may be most logical to consider contributory retirement along with other benefit reforms. Such a package could incorporate the desirable features of contributory retirement, while modifying benefits to offset any undesirable features.

Post-Retirement Adjustment Mechanisms

Currently, annuities of retirees are raised by 4 percent every time the Consumer Price Index (CPI) increases by 3 percent. Since the raises are given several months after the CPI increases, the extra 1 percent (the so-called "1 percent kicker") is designed to compensate for the lag. But the kicker remains in effect even after it has compensated for the lag and so eventually overcompensates for CPI increases. Simply eliminating the extra 1 percent kicker would save DoD about $90 million in fiscal year 1977 and over $600 million per year by fiscal year 1981. If inflation continues at 5 percent per year, by the year 2000 savings from eliminating the kicker would be over $2 billion per year in today's dollars. Eliminating the kicker and including a lump-sum payment to make up for the lag would still save substantial dollars in the long run, but would actually increase costs in three of the next five fiscal years.

In addition to eliminating the kicker, this paper considers a cap on increases in retirement annuities at 5 percent a year in fiscal years 1977 and 1978. Savings from this cap and elimination of the kicker would total $180 million in fiscal year 1977; by fiscal year 1981 savings would increase to over $1 billion. Limiting retired pay increases to the level of active duty increases eliminates incentives to retire early that would eventually develop (even given the current "save pay" provisions of the law) if retired pay increases consistently exceed active duty increases.

Recomputation

Because of large "catch up" pay increases given active duty personnel in the late 1960s and early 1970s, some personnel retiring today receive larger retirement annuities than personnel with higher ranks and years of service who retired in earlier years. This situation has led to suggestions that all retired annuities be recomputed using current pay tables. One bill now before Congress (S. 1969) would allow recomputation based on pay scales in effect in January, 1972, but only when the retiree reaches age 60. This limited recomputation would increase retirement costs by about $500 million in fiscal year 1977; cost increases would rise to $1 billion by fiscal year 1981.

CHAPTER I

INTRODUCTION

The Department of Defense (DoD) is the major employer in the federal government. One-third of all civilian employees and 60 percent of total military and civilian personnel are employed by DoD. In fiscal year 1976 the Department of Defense employs about 2.1 million active duty military personnel and 960,000 civilian employees, for a total active strength of 3.1 million. Other categories of persons receive payments from DoD as well. There are 875,000 reservists and National Guardsmen who only drill part-time and 1.1 million retirees and annuitants receiving retirement annuities from DoD. Counting reservists, DoD employs about 4 million persons, and including retirees, the total payroll numbers over 5 million.

Another measure of the scale of defense manpower is the size of the payroll. The defense payroll is $49.3 billion in fiscal year 1976, including active and reserve military personnel appropriations, costs of direct-hire civilians, costs of family housing supplied to military personnel, and military retired pay.[1] This constitutes 54 percent of all

---

1. This is a commonly accepted definition and is used throughout this paper. (See also DoD, Manpower Requirements Report for FY 1977 (and earlier years), Washington, D.C.: OASD(M&RA), February 1976.) However, costs that are not included in the $49.3 billion could be attributed to manpower. Total manpower costs probably should include the operating costs (other than for pay) for recruiting, medical service, training, and commissaries. Adding in these costs brings the total to about $53 billion, or 58 percent of total outlays. There are still other costs that could push this total higher. DoD includes 50 percent of base operating costs (about $1 billion), presumably to pay for operating costs of food and barracks facilities and other base costs associated with manpower. Though DoD contributes 7 percent of civilian payroll costs toward funding civil service retirement, this amount does not fully fund retirement costs; full funding would increase civilian payroll costs. DoD contributes nothing at all toward funding retirement costs of current military employees. Fully funding military retirement in fiscal year 1977 would add roughly $6 billion to DoD's manpower costs. However, this added cost would be more than offset if the cost of existing retirees ($7.3 billion in fiscal year 1976) were taken out of DoD's budget and put in an organization analogous to the Civil Service Commission. Finally, the food and quarters allowances of military employees are exempt from federal income taxes. Though not a cost to DoD, this exemption costs the government about $650 million per year in foregone taxes.

defense outlays. In contrast, manpower cost $22 billion in 1964 and consumed 43 percent of the defense budget.[2]

Efficiency Issues

The scale of manpower costs and, in particular, their rapid growth have naturally raised questions of inefficiency, waste, and excessive layering of bureaucracy in the Department of Defense. The charge of inefficiency implies either that costs are too high or that real military capability, given the money spent on defense, is not high enough. Reducing manpower costs by eliminating waste or improving efficiency can occur in three ways. Forces can be changed to better correspond to service missions--an option not considered here. Missions can be performed with fewer personnel through productivity gains or through better management. Or, the cost per person in defense manpower can be reduced without affecting overall productivity. However, costs may actually increase if the military is undermanned, if personnel are poorly trained, or if recruiting does not yield the number or quality of personnel needed by DoD. At present, the military services are fully manned and able to meet recruiting requirements, and thus this paper mainly examines ways to reduce costs.

This analysis focuses on cost cuts achieved by reducing the cost per man of defense manpower--inevitably involving compensation--rather than reducing manpower. For one reason, manpower cuts have already yielded large savings in recent years. Active military strengths (2.1 million) have declined both from the peak of the Vietnam War (3.5 million) and from prewar levels (2.65 million). The military services, moreover, are in the process of transferring over 90,000 support personnel into combat units. Although it is too early to judge the success of this effort to reduce the support "tail" of the forces, other areas also appear promising for productivity gains, such as the training activity, where estimates of the student/staff ratio are as low as 1.1 students per staff member.

The growth in costs per employee itself suggests a close examination of manpower costs per person when seeking ways to reduce manpower costs. Table 1 shows the trends in manpower and manpower costs between 1964 and 1976. The large increases in cost per man have occurred principally because of increases in compensation--increases that represented explicit decisions about pay for federal employees. In a way the increases are not surprising since the U.S. economy, during the past 12 years, has undergone a substantial wage inflation. Average earnings in manufacturing have risen 96 percent--some 20 percent more than the cost of machinery and equipment, the closest index to military hardware. Nevertheless, the cost per defense civilian has increased 127 percent, while the cost per active duty military member has increased 143 percent.

---

2. Department of Defense, Manpower Requirements Report for FY 1977 (February, 1976), p. XV-4. Costs omit indirect hires.

TABLE 1

GROWTH IN MANPOWER COSTS BETWEEN
FISCAL YEARS 1964 AND 1976

	1964	1976	% Change
Active Military Personnel[a]			
Number (millions)	2.69	2.10	-22
Annual cost per person	$4,600	$11,200	+143
Defense Civilians[a]			
Number (millions)	1.04	.96	-8
Annual cost per person	$7,000	$15,900	+127
Private Manufacturing Workers' Annual Earnings[b]	$5,300	$10,400	+96

a. Source: Manpower Requirements Report for FY 1976, adjusted for Congressional changes.

b. Source: Department of Commerce hourly estimates, adjusted assuming 40-hour work-week.

The reasons for higher growth rates for federal pay are quite clear: large raises in the late 1960s to achieve comparability with private workers; large raises for new military enlistees in the early 1970s to help achieve the all-volunteer military; and--especially for civilians--significant increases in the average grade. All but the last represent explicit national policy agreed to by the executive branch and the Congress. Offsetting the costs to some extent are quality improvements in personnel since 1964, especially military personnel who are somewhat better educated and are now volunteers. Both these factors should improve productivity and partially justify higher cost per person. Among recruits during 1975 there was a sharp rise in both educational levels and mental aptitudes in comparison with earlier years.

Compensation Issues

The military compensation system has been often studied and amended, but the elements of the system have remained largely unchanged for 30 years or more. Military personnel receive compensation in the form of basic pay,

as determined by rank and years of service, and in many other forms: tax-free allowances for quarters and food, incentive pay for doing special jobs, free services such as medical care and other fringe benefits. Personnel serving a minimum of 20 years qualify for a lifetime retirement annuity calculated from terminal base pay. The annuity after 20 years is 50 percent of basic pay, rising to 75 percent with 30 years' service. Annuities for retired personnel are adjusted upward with increases in the Consumer Price Index (CPI). Indeed, the complexity of the pay system in terms of the number of elements and the large number of benefits paid "in kind" rather than in cash have earned it the title of the "military pay muddle."[3]

Ideally, changes in compensation should be geared to producing, at minimum cost, a military force that can meet U.S. defense requirements while providing fair and equitable payments to military personnel. Compensation and retirement benefits provide inducements for individuals to enlist and reenlist and to seek a military career. Changes in the compensation package may affect enlistment and reenlistment and, therefore, may affect the force. Thus, before making any changes in pay, it is necessary to understand how proposed changes will affect the military forces and whether these changes will produce the military force needed by the United States. The Administration is proposing several changes for fiscal year 1977 in compensation and retirement for military personnel, and some of these are quite major. Also, at the present time both the Defense Manpower Commission and the Quadrennial Review of Military Compensation are conducting comprehensive studies of military compensation. Their reports will be publicly released later this year.

The existing pay and retirement system can be discussed and analyzed in terms of both the level of military compensation and its structure. The level of military compensation refers to the average value of basic pay, allowances, fringe benefits, and retirement benefits. The structure refers to the way compensation varies among groups of military personnel. There are two principal issues concerning the pay level: first, whether the level is too high or too low; and second, whether the mechanism for determining pay raises provides the proper adjustment to military pay levels. For fiscal 1977, the President has proposed a cap on military pay raises of 4.7 percent. Chapter II of this paper is devoted to an analysis of whether this cap, as well as other caps in later years, will adversely affect military recruiting in the years 1977 through 1981.

The structure of military compensation can also be analyzed in several ways. Most important, perhaps, is the way retirement benefits vary by length of service. Chapter III discusses a number of proposals that have been advanced to restructure retirement benefits. However, other dimensions to military compensation are also important, although

---

3. Martin Binkin, The Military Pay Muddle (Washington: Brookings Institution, 1975).

they are not discussed in this paper. One of these is the way compensation is structured in terms of basic pay, cash allowances, and benefits paid in kind. The principal alternative to the present system is a military salary as suggested by the first quadrennial pay review as early as 1967. Proponents of the military salary believe it would be simpler, fairer, and less costly than the present system. Another aspect of the structure is the payment of military personnel according to occupation. At present, the military does pay enlistment and reenlistment bonuses to personnel in shortage specialties, as well as give flight and submarine personnel extra pay for their jobs. The question is how flexible the military should be in allowing pay to vary with the job. At present, the United States has not gone as far as Britain in setting pay rates on a skill-by-skill basis.

68-716 O - 76 - 3

CHAPTER II

PAY CAPS

Much of the compensation for DoD employees consists of civilian salary or military basic pay, and therefore, reducing or "capping" the annual salary increase saves large amounts of money, as Table 2 shows. To achieve full comparability, the current policy level salary increase for military and general schedule civil servants would be about 12 percent[4] for fiscal year 1977 and about 8.8 percent for fiscal year 1978. Capping pay raises for these employees at 5 percent in fiscal year 1977 would save about $2.2 billion, $1.6 billion in costs of active duty military employees and $0.6 billion in costs of defense civilians. Another 5 percent cap for fiscal year 1978 would bring total savings up to $3.7 billion annually. Changing current law so as to extend the 5 percent pay cap to wage board civil servants in fiscal years 1977 and 1978 would save an additional $0.2 billion in 1977 and $0.4 billion in 1978.

TABLE 2

SAVINGS UNDER PAY CAPS FOR DEPARTMENT OF DEFENSE
(BUDGET AUTHORITY)
(Millions of dollars, fiscal years, path B inflation)

	1977	1978	1979	1980	1981
5% cap in fiscal years 1977 and 1978					
Military	1,600	2,500	2,900	3,100	3,400
GS Civilian	600	1,200	1,200	1,300	1,300
WB Civilian	200	400	600	600	600

The President's budget for fiscal year 1977 proposes several changes that would affect the pay levels of military and civilian defense employees. First, the President proposes changing the current definition of comparability by adopting the recommendations of the Rockefeller Commission. Under this new definition, the President estimates the comparability raise at 6.3 percent rather than the 12 percent included under

---

4. This 12 percent includes a 3.7 percent "catch up" due to the 5 percent cap imposed in fiscal year 1976.

current policy. This new definition saves $1.2 billion for military and $0.5 billion for general schedule civilians. Second, the President does not propose giving even the 6.3 percent raise. Rather, he proposes a raise limited to 4.7 percent. This would save an additional $0.4 billion for military and $0.2 billion for general schedule. Either House of Congress can reject this proposed cap. In addition to the cap on military and general schedule (GS) civilians, the President's third proposal is to limit raises given to wage board civilians to 3.4 percent, whereas the current policy estimate assumes an increase of 9.2 percent. Implementing the wage board cap requires that Congress change existing statutory law, since wage board increases are now set on the basis of regional labor market conditions.

Effects of Pay Caps on Recruitment

The issue of limitations on pay raises for military personnel and civilian employees is obviously much broader than the question of saving budgetary outlays. Pay raises and, more particularly, pay raise caps may have pronounced effects on the federal work force. This paper attempts to answer the question: Can the military continue to recruit successfully under the pay raise cap proposed by the President or under other pay caps the Congress might impose? Military recruiting is not the only factor to assess in deciding whether to impose a cap on federal pay raises, but it is an important factor. The pay raise affects the living standards of federal employees, raises issues of fairness and equity, and perhaps most important, affects the number and qualifications of personnel who are willing to serve in the military and civilian work force.

In analyzing the effects of a pay cap, this paper looks both at 1977 and beyond to 1981 in order to gauge the effects of future economic developments and future pay raises on recruiting in the long term and the short term. In assessing the effectiveness of military recruiting, CBO has relied on statistical studies relating the supply of enlistees to military pay levels, wage rates in the civilian sector, and unemployment in the labor market. The most recent of these studies is an econometric study of monthly enlistment data from 1970-1975 by David W. Grissmer of the General Research Corporation that provides estimates of the effects of each of the different influences on military enlistments.[5] These results permit CBO to project annual enlistments of highly qualified personnel from 1977 through 1981 under assumptions about (a) the state of the economy over the next five years and (b) military pay increases in 1977 and future years. These assumptions are laid out in Table 3.

---

5. David W. Grissmer, "The Supply of Enlisted Volunteers in the Post-Draft Environment: An Analysis Based on Monthly Data, 1970-1975," a paper presented to the Rand Conference on Defense Manpower (February 3, 1976). The paper was prepared initially for the Defense Manpower Commission.

TABLE 3

ECONOMIC SCENARIOS
1976-1981
(Calendar years)

	1976	1977	1978	1979	1980	1981	Average Annual Increase 1976-81
Unemployment Rate[a] (%)							
President's Path	7.7	6.9	6.4	5.8	5.2	4.9	6.2[c]
Path A	7.4	6.4	5.4	4.8	4.5	4.5	5.5[c]
Path B	7.7	7.5	7.1	6.7	6.3	5.9	6.9[c]
Average Earnings[b] (% increase)							
President's Path	8.2	8.7	9.3	8.5	6.6	5.8	7.8
Path A	10.5	9.9	9.7	9.1	7.8	7.3	9.0
Path B	9.6	6.9	8.9	7.8	6.1	6.2	7.6
Real GNP[d] (% increase)							
President's Path	6.2	5.7	5.9	6.5	6.5	4.9	5.9
Path A	7.5	7.0	7.0	5.7	4.7	3.8	6.0
Path B	6.4	3.9	4.8	5.0	4.9	4.9	5.0
Price Level (% increase in CPI)							
President's Path	6.3	6.0	5.9	5.0	4.2	4.0	5.2
Path A	7.2	7.1	7.0	6.8	6.6	6.6	7.0
Path B	7.2	6.9	5.9	5.6	4.8	5.0	6.0

a. Total labor force.
b. Ratio of total wages and salaries to total employment.
c. Average unemployment, 1976-81.
d. Gross National Product divided by GNP price deflator.

Economic Assumptions

Three economic scenarios were chosen: the path reported in the President's budget as well as two sets of economic assumptions (path A and path B[6]) used in CBO projections. The President's economic assumptions generally fall between path A and path B, although all three paths show real growth, declining unemployment, and an easing of inflation throughout this period. The effects of several pay raise assumptions, listed in Table 4, were evaluated along these different economic paths. The current policy budget shows pay raises averaging 8.6 percent over the next five years. The President's path, developed along with his economic assumptions, shows somewhat lower pay raises, beginning with 4.7 percent for fiscal year 1977. A more austere alternative would cap pay increases at a maximum of 5 percent for each of the next five years. Projections under this assumption show the feasibility of continuing 5 percent pay raise caps throughout the next five years. A more moderate alternative, reported in CBO's Budget Options for Fiscal Year 1977, would cap pay raises at 5 percent in fiscal years 1977 and 1978 but return to current policy level pay raises beyond 1978.

TABLE 4

EXAMPLES OF ALTERNATIVE MILITARY PAY RAISES
(Fiscal years 1977-81,[a] percentage increases)

	1977	1978	1979	1980	1981	Average 1976-1981
Current Policy Budget	12.0	8.8	8.3	6.9	6.9	8.6
President's Budget	4.7	8.6	7.0	6.5	5.75	6.5
Five-Year 5% Pay Cap	5.0	5.0	5.0	5.0	5.0	5.0
Two-Year 5% Pay Cap	5.0	5.0	8.3	6.9	6.9	6.4

a. Pay raises occur October 1, at beginning of fiscal year.

6. Path A projects 6 percent real economic growth for the period 1977-81. Path B, widely used in other CBO reports, has 5 percent real growth and inflation rates varying from 4.8 to 6.9 percent over the five-year period.

This analysis indicates that in 1977 DoD can meet recruiting requirements under the President's proposed 4.7 percent pay raise. Under all three assumptions the economy is not expected to be fully recovered by 1977. Moreover, military recruiting has been extremely effective in recent months, in part at least as a result of economic conditions. For 1977, in fact, CBO estimates that the military could still recruit effectively with no raise at all.

Potential Recruiting Shortfalls

By 1981, however, the picture is different. Recruiting shortfalls or a lowering of the quality mix may occur if pay raises continue to be limited and if the economy continues to improve. Under the President's pay increases and economic assumptions, CBO estimates that the military will just reach overall recruiting targets and may fall short if the economy improves more rapidly than expected. It will almost certainly require greater recruiting expenses in the form of recruiters, paid advertising, and enlistment bonuses, all of which have been cut back for fiscal years 1976 and 1977. Moreover, if a 5 percent pay cap is continued through 1981, significant recruiting shortfalls may occur by the end of this decade under both the President's and CBO's economic assumptions. Thus, although military pay raises can be curtailed and money can be saved in 1977, over the next five years substantial raises will have to be made to produce adequate numbers and quality of military recruits.

Quality of Military Recruits

One key to forecasting enlistments and assessing the possibilities of future shortfalls is the quality dimension of recruiting. Since the end of the draft in December, 1972, military recruiters have been concerned with the quality of recruits as well as the number of recruits. In addition to signifying the physical and moral standards that all recruits must meet, quality has also been measured by education and mental aptitude. The military services give preferences to high school graduates and to persons scoring above the 30th percentile in standard entrance examinations. However, non-high school graduates and so-called Category IV personnel, who score at or below the 30th percentile, can effectively perform numerous jobs in the military as well as in the civilian economy. In calendar year 1974, 61 percent of all Department of Defense enlistees without prior service did not have high school diplomas, although some of these had high school equivalency certificates, and only about 9 percent were in Category IV. The Congress is interested in high quality enlistments as evidenced by a 1974 requirement, since repealed, that at least 55 percent of all enlistees into each military service have a high school diploma or equivalency certificate. Such a restriction was not necessary in 1975--a banner year for military recruiting. In that year, only 28 percent of all recruits were not high school graduates and only 4 percent scored in Category IV.

The most important question in military recruiting is the quality mix. Category IV personnel, legally eligible for military service, have always been in excess supply and non-high school graduates who score above Category IV may also be in excess supply. In this case, recruiting shortfalls usually mean a lower quality mix, but it is by no means clear that the services cannot endure a lengthy retreat from the high quality standards they were able to enforce in 1975. Appendix A provides further discussion of the quality issue.

In projecting enlistments through 1981, CBO has projected the number of male high school graduate enlistments in Mental Categories I, II, and III, using 1975 as a base.[7] These enlistees were assumed to comprise 55 percent of all male enlistees, a quality mix more comparable to 1974 ratios than to 1975. Tables 5 and 6 show forecasts of enlistments for 1977 and 1981 as well as estimates of male enlistment requirements which were provided by DoD and assume relatively constant forces. The requirements for 1981 are quite tentative, of course, because limitations on pay raises may discourage reenlistments and thereby increase requirements for new enlistments. The standard deviation of these projections is calculated to be about 10,000 men per year, as discussed in Appendix A. This places a fairly narrow bound in the estimates--although these estimates also depend on economic assumptions being fulfilled.

Excess Supply for 1977

Under nearly all cases, supply is expected to exceed requirements for 1977--even with no raise and including all but the most optimistic economic assumptions. DoD can continue to take the cream from the youth labor market, enlisting a large percentage of high school graduates and persons of average and above average mental aptitude. Alternatively, the military services may be able to lower further recruiting costs in the form of recruiters, paid advertising, and enlistment bonuses.

By 1981, only with pay raises at the average of the current policy levels can the military be sure of a sufficient quantity of highly qualified enlistees, under CBO's quality assumptions and under all economic forecasts. With the President's pay raise plans and economic assumptions, enlistments are forecast to meet requirements exactly. Difficulties might arise in troublesome recruiting areas, however, such as the Marine Corps and the combat arms in the Army. Moreover, recruiting requirements might rise because reenlistments fall below projected levels due to improvements in the civilian economy. These factors would be amplified considerably if the practice of capping annual federal pay raises at 5 percent were continued through 1981. Under these circumstances, recruiting is projected to range from 300 to 340 thousand men against a requirement of 350 thousand, indicating the possibility of

---

7. See Appendix A.

TABLE 5

1977 MILITARY RECRUITING PROJECTIONS
MALE ENLISTMENTS[a]
(Thousands)

October, 1976 Pay Raise	Estimated Requirements	Economic Assumptions		
		President	CBO (Path B)	CBO (Path A)
Current Policy (12%)	375	420	430	400
President (4.7%)	375	400	410	380
No Raise	375	380	390	370

a. Nonprior service enlistments, calendar year 1977.

TABLE 6

1981 MILITARY RECRUITING PROJECTIONS
MALE ENLISTMENTS[a]
(Thousands)

Fiscal Years 1977-81 Pay Raises	Estimated Requirements	Economic Assumptions		
		President	CBO (Path B)	CBO (Path A)
Current Policy (8.6% average)	350	380	400	350
President (6.5% average)	350	350	370	320
Two-Year 5% Cap (6.4% average)	350	340	360	310
Five-Year 5% Cap (5% average)	350	320	340	300

a. Nonprior service enlistments, calendar year 1981.

major recruiting shortfalls resulting in either manpower shortages or a sharp drop in the quality of enlistments. An alternative that combines savings in fiscal years 1977 and 1978 with somewhat higher recruiting totals in 1981 would combine pay caps at 5 percent for 1977 and 1978 with higher pay increases beyond 1978. This would create greater savings than the President's proposals in 1978 and 1979 and about the same annual costs for military personnel in 1981. The savings occur because the timing of the raises is better geared to the supply of new recruits.

Policies Other Than Pay

Other factors, however, will also determine the success of military recruiting. The services can increase the proportion of high school graduates and reduce reliance on Category IV personnel by greater utilization of women (currently only about 10 percent of enlistments), by relaxing physical standards for persons in physically undemanding jobs, by substituting civilians for military personnel, and by increasing reenlistment rates wherever possible. Military pay is not the only variable affecting the supply of enlistees without prior service. The economic returns to college education may continue to decline, or youth attitudes toward the military may improve--both contributing to an increase in enlistments. Finally, DoD has other ways of increasing enlistments, such as paid advertising, recruiters, and the use of selective enlistment bonuses, all of which may be cheaper methods of recruiting than providing across-the-board pay raises.

CHAPTER III

RETIREMENT

This section discusses military retirement, a second major component of compensation. It considers the current system for military nondisability retirement and alternatives to it which reduce costs: benefit reforms, contributory retirement, changes in post-retirement adjustment mechanisms. It also considers one alternative, recomputation, that would increase costs. This section examines not only the costs of these alternatives but also their effects on retention and force management.

Current System

Description and Costs

The current nondisability retirement system pays a lifetime annuity which can begin immediately after as few as 20 years of service; 20 years' service is typically completed around age 40 for enlisted personnel and age 42 for officers. A retiree's annuity equals 2.5 percent of his basic pay on the day he retires, times his years of service. Hence the annuity after 20 years' service is 50 percent of terminal basic pay, rising to 75 percent with 30 years' service. After retirement, annuities are increased based on increases in the CPI. Military personnel do not contribute directly to this retirement system.

Under these policies, Table 7 shows that military retirement will cost $8.6 billion in fiscal year 1977. Though this amount is primarily for nondisability retirement, the $8.6 billion includes costs of all types of military retirement: regular and reserve nondisability, disability, and survivors. Based on wage and price growth assumed in CBO's "path B," these costs will increase to $12.8 billion in fiscal year 1981; path B inflation rates are given in a note to Table 7.

The $8.6 to $12.8 billion pays for costs of current retirees. DoD is also incurring a liability for future retirement costs, although this liability does not appear anywhere in the budget of DoD or the federal government. One measure of this future liability is the amount DoD would have to invest annually, assuming a given future rate of inflation and interest, in order to pay future annuities. Using this measure, a recent GAO report estimates that, at a 3 to 4 percent inflation rate and a

TABLE 7

SAVINGS UNDER VARIOUS RETIREMENT OPTIONS[a]
(Millions of dollars, fiscal years, path B inflation[b])

	1977	1978	1979	1980	1981
Current Retirement System (total costs)	8,620	9,670	10,570	11,720	12,810
Benefit Reform					
RMA[c]	+168	+138	+130	+92	+83
IAC[d]	+162	+112	+61	-42	-132
Contributory Retirement[e]					
Voluntary - 7%	-700	-770	-830	-890	-950
- 10%	-1,010	-1,090	-1,180	-1,270	-1,350
Compulsory - 7%	-1,200	-1,170	-1,130	-1,140	-1,170
- 10%	-1,710	-1,670	-1,610	-1,630	-1,670
Eliminate 1 Percent Kicker[f]					
Current Mechanism	-90	-220	-330	-510	-670
H.R. 3310 Mechanism[g]	+20	-50	-120	-400	-460
DMC Mechanism[h]	+390	+90	-50	+110	-320
Two-Year 5% Retired Pay Cap[i] and Eliminate Kicker	-180	-580	-720	-920	-1,090
Limited Recomputation (S. 1969)[j]	+560	+690	+790	+980	+1,040

a. All options are assumed implemented in October, 1976. Savings in this table do not consider any reductions in tax revenues which may be caused by the options. Savings under contributory retirement might not be savings to DoD, depending on how contributory retirement is structured.

TABLE 7 (Continued)

b. Path B inflation assumes the following percentage changes (October to October) in the CPI and wages:

	1977	1978	1979	1980	1981
CPI	6.7	5.0	5.9	4.5	4.8
Wages	12.0	8.8	8.3	6.9	6.9

c. Retirement Modernization Act. See p. 26.

d. Interagency Committee plan. See p. 29.

e. See p. 30.

f. See p. 32.

g. See p. 34.

h. Defense Manpower Commission. See p. 35. These figures exclude savings from DMC's proposed new mechanism for the first adjustment for new retirees.

i. See p. 35.

j. See p. 36.

7 percent interest rate, the liability in fiscal year 1977 would be $6 to $7 billion.[8]

Expensive as it is, today's military retirement system is not without parallel. Many New York City employees can retire after 20 to 25 years' service, with annuities equal to half of their final year's salary. And a recent survey[9] of 21 retirement systems for municipal police and firemen revealed that five of the systems allowed retirement after 20 to 25 years' service. However, the military retirement system is generous relative to many other public retirement programs. In the federal civil service, normal retirement cannot commence before age 55. Also, civil service annuities are only 1.5 to 2 percent times years of service and are based on average salary in any three consecutive years rather than on terminal pay. According to a 1965 survey by the Social Security Administration and a 1970 private survey,[10] military retirement is also quite generous relative to state employee retirement systems. State systems usually do not permit retirement until age 60. Also, most state retirement systems set annuities at 1 to 2 percent times years of service, and most base annuities on average salary in the most recent three to five years of service.

Retention Effects

Though these comparisons provide useful perspective, analysis of the military retirement system should concentrate on how well it allows the military to recruit and retain desired personnel. The current retirement system affects retention both by providing incentives to stay in the military and by influencing the military's willingness to force out personnel. The combined effect of these factors can be seen by looking at Table 8, which shows how many out of 1,000 enlisted and officer recruits remain in the service at various points in their careers. These numbers are based on DoD actuary's data that still partially reflect low retention under the draft. Nonetheless, the numbers reflect general trends which are still valid today.

All three columns in Table 8, but particularly the enlisted column, show a sharp drop after five years' service, which for most personnel is beyond the point of first reenlistment. One reason for the drop is that,

---

8. General Accounting Office, A Contributory Retirement System for Military Personnel (March 4, 1976), p. 23 (processed). (GAO assumes a 5 percent annual annuity increase, a 5.5 percent wage increase, and 7 percent interest.)

9. "Pension Plans," The American City (October, 1974), p. 90.

10. John R. Mackin, Protecting Purchasing Power in Retirement (New York: Fleet Academic Editions, Inc., 1971), pp. 27-34.

since retirement benefits are not available until after a minimum of 20 years' service, they provide little incentive to reenlist early in a career. But there are other important reasons. There is a tendency among all young persons, inside and outside the military, to switch jobs frequently. Perhaps more important, DoD does not allow everyone to reenlist who wants to; some are forced out because DoD regards them as unsuitable while others are forced out to limit numbers of career personnel. Managing numbers of career personnel by limiting first reenlistments is costly because it requires training a new recruit to fill the vacated spot and because it reduces the average experience level. Whether this part of DoD's force management is cost-effective deserves further investigation, but the current retirement system is clearly part of the reason DoD manages as it does. Because there is no annuity for anyone leaving with less than 20 years of service, DoD is reluctant to force out anyone who has been allowed to reenlist the first time.

TABLE 8

RETENTION OF OFFICERS AND ENLISTED PERSONNEL

Years of Completed Service	Numbers Remaining		
	Enlisted	Officers	Officers & Enlisted[a]
0	1,000	1,000	1,000
5	194	411	211
10	121	329	137
15	97	327	115
20[b]	89	318	107
25	11	134	21
30	3	46	6

a. Mixture of officers and enlisted based on current active force proportions.

b. Number qualifying for 20-year pension. Some naval personnel qualify a few months before completing 20 years of service.

Whereas only about 20 percent of officers and enlisted personnel stay beyond five years, about 51 percent of those who do stay remain until retirement. This reflects the increasing lure of retirement, a lure that becomes much stronger as one approaches 20 years of service. This high retention also reflects the reluctance of DoD to force out personnel, especially those near 20 years' service, because they would lose their pension rights.

This high retention (51 percent) between 5 and 20 years drops again to 6 percent between 20 and 30 years. Retirement is certainly an important factor in this low retention rate. Staying in beyond 20 years means foregoing one's pension; this significantly (and sometimes fully) offsets the increased annuity that one earns by staying beyond 20. However, there are also other important reasons for low retention between 20 and 30 years, including military policies that force out both officers and enlisted personnel in order to reduce numbers of older employees and to improve promotion opportunities.

Some evidence already exists that the retention rate reflected in Table 8 is not adequate. The Navy, for example, asserts that it is short some 23,000 petty officers;[11] petty officers are those in paygrades E-4 to E-9, most of whom have four or more years of service. If the Navy wishes to meet this shortage, it must either pursue the expensive option of taking in more junior people to "grow" enough people with needed experience, or alter its retention pattern to retain more persons beyond four years, or both.

Benefit Reforms

Retirement Modernization Act

One way of changing retention patterns is to reform retirement benefits; these reforms can also save money. The Retirement Modernization Act (RMA), which is currently before Congress (H.R. 7769), is one such reform. Table 9 summarizes the major provisions of RMA and compares them to those of the current system.

RMA provides that annuities will be calculated based on salary in that year of service when salary is highest (the "high-1" provision), rather than based on salary at the last day of service. Since salary on the last day may reflect a pay raise that was not in effect during the entire year, the high-1 provision should reduce costs. High-1 should

---

11. Statement on fleet readiness by Vice Admiral Watkins, Chief of Naval Personnel, before the Subcommittee on Seapower and Strategic and Critical Materials of the House Armed Services Committee (January 15, 1976).

TABLE 9

PROVISIONS OF ALTERNATIVE RETIREMENT SYSTEMS

Area of Comparison		Current	RMA	IAC
Formula for computing annuity		•2-1/2% for 20-30 years of service (YOS)	•2-1/2% for 20-24 YOS •3% for 25-30 YOS	•2-1/2% for 20-24 YOS •3% for 25-30 YOS •2% for 31-35 YOS
			•Reduced annuity from retirement to time when 30 YOS would have been attained •15 percentage point reduction in multiplier	•Reduced annuity from retirement to age 60 (20-24 YOS) or age 55 (25 or more YOS) •2% reduction for each year under age threshold
Base for computing annuity		•Terminal basic pay	•High-1	•High-3
Relation between military and SS retirement annuities		None	•Combines annuities at age 65	•Combines annuities at age 65
Payment to members separating before 20 YOS	VOL	None	•10-19 YOS •Equity payment--deferred annuity only	•10-19 YOS •Equity payment--deferred annuity or lump sum
	INVOL	•Readjustment pay--2 months basic pay (BP) per YOS (max. 2 yrs. pay or $15,000)[a]	•5 or more YOS •Readjustment pay--5% x BP x YOS •Plus equity payment after 5 YOS (lump sum or deferred annuity)	•5 or more YOS •Readjustment pay--5% x BP x YOS •Plus equity payment after 10 YOS (lump sum)
Save-pay and transition provisions		Not applicable	•Same save-pay provision as IAC •Transition based on the number of years from implementation to 20 YOS divided by 20 YOS	•Guarantees all future retirees at least as much as similar member retiring before them •Transition spanning 10 pay raises

a. Varies by service and reason for involuntary separation.

also make retirement planning more flexible, since benefits will depend less critically on the exact time of retirement. In addition to imposing high-1, RMA reduces military retirement annuities at age 65 by half the amount of the social security annuity "attributable to military service." This provision reflects the military's matching of the member's social security contributions while he was on active duty. However, because social security benefits are progressive (i.e., low-income retirees receive a higher percentage of their income as an annuity than high-income retirees), it is difficult, if not impossible, to determine what part of the social security annuity is properly attributable to military service. A staff paper of the Defense Manpower Commission has argued that this is a serious and uncorrectable defect in RMA.[12]

The changes in RMA which have the greatest effect on retention are its benefit reforms. RMA provides some retirement benefits after 10 years' service, which should increase first term reenlistment. For the first 10 years after retirement, RMA reduces the annuity of a 20-year careerist from 50 percent of basic pay to 35 percent. But the act increases the annuity of a 30-year careerist from its current value of 75 percent to 78 percent. Together these provisions should reduce the number remaining for 20 years but increase the number of 20-year careerists who stay for 30 years.

One issue is whether the provisions of RMA, particularly those aimed at increasing retention beyond 20 years, would increase retention enough to create a superannuated force. RMA would certainly not stop the military from preventing superannuation by requiring retirement before 30 years, or by requiring that those who stay beyond 20 years leave those military specialties (such as combat arms) that clearly require youth. If anything, the early vesting provisions of RMA would provide more flexibility to manage the age of the force. Moreover, RMA would probably not dramatically alter the overall age distribution. The historical retention data used in Table 8 is based on a force with a median age of 23.2 years (the actual figure at the end of fiscal year 1974 was 24 years); 6 percent have over 20 years' service. Assuming, solely for illustration, that RMA has a fairly drastic effect on retention (25 percent fewer losses at years 4 and 5, 10 percent fewer losses in each year 20 to 29), the median age would climb to 24.9 years and 8 percent would have over 20 years' service. Thus, it does not appear that RMA will create a superannuated force.

RMA would not only affect retention; it would affect costs, increasing them in years immediately after its passage but eventually saving large amounts. Table 7 shows that, if implemented at the beginning of

---

12. E. J. Devine and Richard Kuzmack, Integration of Military Retired Pay and Social Security Benefits: The Attribution Problem and its Implications for the Private Sector, staff paper of the Defense Manpower Commission (October 17, 1975).

fiscal year 1977, RMA would increase costs in every year between fiscal years 1977 and 1981. Costs would increase by $80 to $170 million per year in this period because the increased lump-sum payments to those forced out more than offset savings from high-1 averaging. RMA's reduced annuities for 20-year careerists would save little in fiscal years 1977-81 because of extensive transition provisions that exempt personnel now in the force from many of RMA's reductions. However, by fiscal year 1984 RMA would begin to save money, and savings by fiscal year 2000 would amount to $800 million per year in today's dollars.

These cost estimates are based on a model developed by the Office of the Assistant Secretary of Defense for Manpower and Reserve Affairs (OASD/M&RA). The estimates assume that force size and composition remain at current levels and that retention remains unchanged except for significant increases in force-outs of enlisted and officer personnel with less than 20 years' service. CBO believes these estimates are reasonable, and they are currently the best available. However, some of the assumptions (particularly about retention) deserve further investigation. Appendix B discusses these problems in more detail.

Interagency Committee Plan

RMA actually grew out of a proposal in 1971 by an Interagency Committee (IAC). Table 9 summarizes the IAC plan's provisions. The IAC plan is more far-reaching and saves more than RMA. The IAC plan's provisions for those retiring with less than 10 years' service are similar to RMA's; and, like RMA, IAC integrates social security and military annuities at age 65. But in most other ways IAC is a more drastic reform than RMA. The IAC plan would base annuities on salary in the three years of service with highest salary. The IAC plan would reduce the annuity of a 20-year careerist to about 30 percent, rather than RMA's 35 percent, and continue the reduction until age 60 rather than for just 10 years. The IAC plan would provide the same annuity for 30-year careerists (though it would be reduced until the retiree reaches age 55) as would RMA, but annuities would continue to grow for those who stay past 30 years, reaching a maximun of 88 percent for those who stay for 35 years.

IAC's larger and longer reduction for 20-year careerists, combined with higher annuities for those who stay past 30 years, should reduce the number of 20-year careerists more than RMA and increase the fraction staying beyond 20 years more than RMA.

The IAC plan would also save more than RMA. Table 7 shows that, if the IAC plan were implemented at the beginning of fiscal year 1977, retirement costs would be increased in fiscal years 1977-79 because lump-sum costs of force-outs exceed savings from high-3 averaging and because, due to transition provisions, the IAC plan's reduced multipliers would save little during this period. Savings would begin in fiscal year 1980, and by fiscal year 2000 the IAC plan would save about $2.1 billion

in today's dollars. These cost estimates, like those for RMA, are based on the OASD/M&RA model.

Contributory Retirement

Unlike federal civil servants and some private sector employees, military personnel contribute nothing directly to their retirement system. A contributory retirement system for the military should reduce the number of 20-year careerists, which previous discussion has suggested may be desirable. But contributory retirement will do nothing to increase first-term reenlistments nor those remaining past 20 years' service; in fact it may reduce both. Hence it may be more logical to consider contributory retirement as part of a package of reforms including benefit reforms. Such a package could incorporate the desirable features of contributory retirement, including its cost savings that are estimated below, while modifying benefits to offset any undesirable features.

Contributory retirement would significantly reduce costs; the amount would depend on how contributory retirement is structured. This paper considers options which require contributions of both 7 percent (like federal civil service) and 10 percent of basic pay.[13] For both the 7 percent and 10 percent options, this report considers an option which is voluntary and one which requires contributions from all persons. Both voluntary and compulsory options provide refunds, with interest at 3 percent, to those who leave the military before retiring. All options assume that military members would still be required to contribute to social security and that military contributions would be taxable, as civil service contributions are now.

Table 7 shows estimated savings to the government under the 7 percent and 10 percent options and, within each, under a voluntary and compulsory option. Appendix B discusses the methods used in making the estimates. Savings under the voluntary options assume "perfect foresight," i.e., only those who eventually retire choose to participate.

---

13. Even the 10 percent contribution falls far short of fully funding military retirement. An enlisted man actually retiring as an E-7 after 20 years would have had to contribute about 80 percent of his basic pay each year (or 40 percent, if matched by DoD) to fully fund his retirement, assuming only 3 percent annual inflation. An officer actually retiring as an O-6 after 30 years would have had to contribute about 60 percent of his basic pay per year, again assuming 3 percent annual inflation. (This does not imply that DoD would have to set aside 60 to 80 percent of its total bill for basic pay, since many personnel do not stay to retirement. A recent GAO study estimates that about 37 percent of total DoD basic pay would have to be set aside.)

Savings in fiscal year 1977 would be $700 million for the 7 percent system and $1,010 million for the 10 percent option. Savings under the compulsory options are based on estimates by the DoD actuary, adjusted for inflation. Under compulsory options, the savings in fiscal year 1977 would be $1,200 million under the 7 percent option and $1,710 million under the 10 percent option. Note that these savings would be reductions in total government spending, but they would not necessarily be reflected in reductions to the DoD budget. Reductions to the DoD budget depend on how the contributory system is structured.

Table 7 reflects all major savings from contributory retirement in fiscal years 1977-81, but savings might change in the longer run. The fewer numbers expected to continue to retirement under a contributory system would eventually reduce the costs of military retirement. On the other hand, higher losses increase the costs of recruiting and training. Nor do the savings in Table 7 consider tax effects. Currently, almost all of military annuities are taxable. But if military contributions were taxed (as is assumed in Table 7), then annuity payments up to the amount of the contributions should be tax-free. Thus, some fraction of the savings, perhaps 20 percent or so, would eventually be lost to the government through reduced tax revenue, but the loss would be insignificant in 1977-81.

The choice between the voluntary and compulsory options should consider more than just cost savings. Consistency with the federal civil service system suggests a compulsory option, since all civil servants must participate in their retirement system. However, civil servants are not covered by social security while military are; hence a voluntary military and compulsory civil service plan may not be inconsistent. There may be other advantages to a voluntary system. A voluntary option would avoid deductions from junior personnel who do not wish to participate. Under a compulsory option these deductions, even though refunded if the person leaves before retirement, might make recruiting more difficult by lowering starting take-home pay. Also the prospect of a large lump-sum refund if one chooses not to reenlist might cut down on reenlistments. On the other hand, a voluntary option has the major disadvantage that personnel who elect not to participate in the first years they are in the military, but who later (perhaps as long as 10 or more years later) are considering a career and wish to participate, would be faced with a large make-up payment which might cause them to decide against a career. Some advantages of both options might be obtained by making the system voluntary up to five or so years of service and compulsory thereafter.

Post-Retirement Adjustment Mechanisms

Current law automatically increases annuities of military retirees on the basis of increases in the CPI. This report discusses alternative mechanisms that would eliminate the 1 percent kicker--a provision of the

current law which overcompensates for CPI increases--and that would cap retired pay increases.

These mechanisms are important because, as Table 10 shows, the largest part of growth in retirement costs in fiscal years 1977-81 will be due to CPI increases. The first two columns in Table 10 show total military retirement costs in fiscal years 1976-81 and increases over the fiscal year 1976 level. The remaining three columns show parts of the growth attributable to each of three reasons: (1) net increase in population (including cost increases because average annuities are increasing); (2) future wage growth; and (3) CPI increases. Under path B inflation assumptions, CPI increases account for 65 to 68 percent of the growth.

One Percent Kicker

One reform which would slow this growth is elimination of the 1 percent kicker from the law governing post-retirement adjustments for military retirees.[14] The current law, effective since 1969, increases annuities of those who have already retired whenever the CPI increases by 3 percent over the last base month and sustains that increase for three consecutive months. Annuities are increased by 1 percent more than the highest monthly CPI increase since the last base month. This is the 1 percent kicker. Since the increased annuities do not become effective until two months later, the kicker was presumably included in the law to compensate for this lag, although it may also have been intended to pass on to retirees the benefits of productivity increases.

There are several arguments in favor of eliminating the kicker. The main one is that it has more than compensated for CPI increases. Since the kicker became effective, there have been nine raises (through August, 1975) which together increased annuities by 63 percent; during the same period the CPI has risen only 50 percent. Part of this higher increase in annuities compensates for the lag between CPI increases and increases in annuities. But since the kicker remains in effect after it has compensated for the lag, it eventually overcompensates.

Another argument for eliminating the kicker is that it could cause inflation adjustments in annuities to be larger than the growth in active duty wages; i.e., there may be a "pay inversion." Military retirement annuities are based on active duty wages at the time of retirement; inflation adjustments only begin after retirement. Hence during periods of

---

14. There is also a kicker in the adjustment mechanism for federal civil service retirement, but elimination of this kicker is dealt with in other CBO papers. (See Federal Pay: Its Budgetary Implications, Background Paper No. 4, March 10, 1975, and Budget Options for Fiscal Year 1977, March 15, 1975.)

TABLE 10

GROWTH IN RETIREMENT COSTS
(Path B inflation)

Fiscal Year		Total Costs (1)	Increase over fiscal year 1976 due to: All Causes (2)	Population Growth (3)	Wage Growth (4)	CPI Growth (5)
1976	$ millions	7,400	0	0	0	0
1977	$ millions	8,620	1,220[a]	350	40	830
	percent	----	100	29	3	68
1978	$ millions	9,670	2,270	620	120	1,530
	percent	----	100	27	5	68
1979	$ millions	10,570	3,170	870	230	2,070
	percent	----	100	28	7	65
1980	$ millions	11,720	4,320	1,110	370	2,840
	percent	----	100	26	8	66
1981	$ millions	12,810	5,410	1,350	530	3,530
	percent	----	100	25	10	65

a. Includes growth in fiscal year 1977 and the transition quarter.

pay inversion, it is advantageous for eligible persons to hasten their retirement and cash in on the higher post-retirement adjustments. These early retirements may not be in the best interests of the military. Congress has reduced the impact of pay inversions by passing "save-pay" laws that allow retirees to "look back" after retirement and choose either active duty raises or inflation raises, whichever are higher. However, current "save-pay" laws limit the length of time one may look back. Hence continuing pay inversions, which are made more likely by the 1 percent kicker, will eventually cause early retirements, even with "save-pay."

Perhaps because of these undesirable features, no state retirement system covered in an extensive private survey[15] in 1970 had a mechanism like the kicker. Twenty-five states had established automatic adjustment mechanisms, but none would overcompensate for inflation increases with certainty, as the kicker mechanism does.

What mechanism, if any, to substitute for the kicker depends on one's criteria. If one wants to make military retirement adjustments consistent with adjustments in other federal retirement programs, which compensate for CPI increases only after a lag, then simple elimination of the 1 percent kicker from the current mechanism is a reasonable option.[16] This is the alternative recommended in the President's budget. Eliminating the kicker would save DoD $90 million in fiscal year 1977 and $670 million in fiscal year 1981, as Table 7 shows. (These savings assume "path B" inflation rates, which range between 4.5 percent and 6.7 percent per year in fiscal years 1977-81.) If inflation continues at 5 percent per year, then by the year 2000 elimination of the kicker will save roughly $2.2 billion per year in today's dollars.

H.R. 3310 Mechanism. Since simple elimination of the kicker undercompensates for inflation because of the lag, one way to minimize this undercompensation is to reduce the lag. A bill currently before Congress (H.R. 3310) proposes to reduce the lag for civil service retirees by increasing annuities every time the CPI increases by 3 percent for one month. Annuities would go up only by the amount of the CPI increase (there would be no kicker), but increased annuities would be payable at the beginning of the second month. If applied to the military, the H.R. 3310 mechanism would reduce the lag between 3 percent CPI increases and payment of increased annuities from its current five months to about two months. Table 7 shows that, if the H.R. 3310 mechanism were applied

---

15. Mackin, Protecting Purchasing Power, p. 96.

16. Eliminating the kicker would not, however, make military retirement completely consistent with other federal programs. Social security, for example, typically adjusts annually for price increases and so has a one-year lag.

to military retirees beginning in October, 1976,[17] costs in fiscal year 1977 would increase by about $20 million because the shorter lag more than offsets savings from the kicker. But by fiscal year 1981 savings would be about $460 million. If inflation continues at 5 percent per year, by the year 2000 savings would be about $2 billion per year in today's dollars.

DMC Mechanism. Another criterion would call for full compensation for CPI increases, including compensation for the entire lag. This should be done, not with a kicker, but by including in the first check after a CPI adjustment a lump-sum payment large enough to compensate for whatever lag must be allowed for administrative response. In its Interim Report, the Defense Manpower Commission (DMC)[18] has proposed a way of calculating the required lump-sum payment. The method is explained in detail in Appendix B. Elimination of the kicker in favor of this lump-sum payment would, of course, save less than simply eliminating the kicker. Year 2000 savings would be slightly smaller (about $1.9 billion per year in today's dollars if inflation continues at 5 percent per year). But the DMC lump-sum payment would dramatically change costs in fiscal years 1977-81. As Table 7 shows,[19] addition of this lump-sum payment, even though accompanied by elimination of the 1 percent kicker, would actually increase retirement costs by $390 million in fiscal year 1977 (this large increase occurs because there are two raises, and hence two lump-sum payments, in fiscal year 1977). In fact, the lump-sum payment combined with elimination of the kicker would increase costs in three of the five years during the 1977-81 period.

Retirement Pay Cap

Even if the 1 percent kicker is eliminated, there will be two retired pay increases totaling 9.3 percent during fiscal year 1977, under path B inflation assumptions. It may be desirable to limit or "cap" retired pay increases at some lower level, especially if active duty wage increases are capped. If retired pay grows faster than active duty wages, the resulting "pay inversions" may cause undesirable early retirements.

---

17. Savings are quite sensitive to when the bill is enacted. If enacted in June, 1976, the mechanism would increase military retirement costs by $50 million in the transition quarter and $10 million in fiscal year 1977. But, because June enactment would avoid a kicker increase that would occur under October enactment, savings under June enactment are $630 million by fiscal year 1981 versus $460 million under October enactment.

18. Defense Manpower Commission, Interim Report to the President and the Congress (May 16, 1975), pp. 37-44, Appendix H.

19. Savings in Table 7 do not include savings from DMC's proposed revision of the first CPI increase for new retirees.

Table 7 shows the savings if the 1 percent kicker is eliminated in all years during the 1977-81 period and if, in addition, retired pay in fiscal years 1977 and 1978 is capped at 5 percent. Savings in fiscal year 1977 would be $180 million, rising to $1,090 million in fiscal year 1981.

Recomputation

Pending before the Congress is legislation which would increase retirement costs. Until 1958 retirement annuities were generally increased at the same rate as active duty pay; since then retired pay has been adjusted according to CPI increases. But since 1958 retired pay has grown by 230 percent whereas active duty pay has grown by 430 percent. The difference is due primarily to large "catch-up" pay increases given active duty personnel in the late 1960s and early 1970s and to increases in the standard of living throughout the economy during this period. This large difference in rate of growth means that some personnel retiring today receive larger annuities than personnel with higher ranks and longer service who retired in earlier years.

This situation has resulted in suggestions that all retired annuities be recomputed using current pay tables. Two bills now before the Congress call for recomputation, but in a limited form. One bill (S. 1969) allows recomputation based on pay scales in effect in January, 1972, but only when the retiree reaches age 60. A second bill (S. 1702) would allow recomputation based on pay scales in effect in October, 1974, but only when the retiree reaches age 65.

Based on computer model runs made by DoD, S. 1969 would increase retirement costs in fiscal year 1977 by $560 million; by fiscal year 1980 this bill would increase costs by $1.04 billion.

CHAPTER IV

OPTIONS

This section formulates and discusses four optional levels of spending on defense manpower. The first, useful mostly as a benchmark, is the "current policy" level; this is the cost of devoting the same resources to defense manpower as in fiscal year 1976. A second option is the President's fiscal year 1977 budget. The last two options, one higher and one lower than the current policy option, use alternatives developed earlier in this paper. Table 11 shows the total cost of each of the four options in each fiscal year 1977-81.

TABLE 11

DEFENSE MANPOWER OPTIONS (BUDGET AUTHORITY)
(Billions of dollars, fiscal years, path B inflation)

	1977	1978	1979	1980	1981
Current Policy	55.8	60.9	66.0	70.9	75.9
President's Budget	51.9	56.1[a]	59.9[a]	63.7[a]	67.2[a]
High Option	56.3	61.6	66.8	71.9	76.9
Low Option	51.6	54.8	59.4	63.7	68.2

a. CBO projections. (See footnote 21.)

Current Policy Option

Devoting the same resources to defense manpower would leave costs identical to those in fiscal year 1976 except for increases due to inflation.[20] After accounting for these increases, Table 11 shows that the current policy level of defense manpower will cost $55.8 billion in fiscal year 1977; costs grow to $75.9 billion by 1981. As a percent of total DoD budget authority, current policy manpower costs grow from 50 percent in fiscal year 1977 to 55 percent in fiscal year 1981.

20. The one exception to this statement is that current policy estimates include increased costs due to greater numbers of military retirees.

Manpower grows as a fraction of total budget authority largely because pay increases are greater than inflation in nonpay accounts.

By estimating the cost of devoting the same resources to defense manpower as in fiscal year 1976, the current policy option provides a useful benchmark for evaluating how other options affect the "real" level of defense manpower spending.

President's Budget Option

Table 11 shows that the President's budget for defense manpower begins at $51.9 billion in fiscal year 1977 and increases to $67.2 billion in fiscal year 1981.[21] The President's budget is 7 percent below the current policy benchmark in fiscal year 1977 and 12 percent below in fiscal year 1981. Hence the President is proposing real cuts in defense manpower spending. This report first discusses where these real cuts are in fiscal year 1977; then it comments briefly on why the cuts grow in years beyond 1977.

The President's defense manpower budget in fiscal year 1977 is $51.9 billion versus a current policy level of $55.8 billion, which represents a real cut of $3.9 billion. Most of this cut would be achieved by reducing compensation of DoD employees rather than by reducing numbers of employees, and the largest part of the compensation cut would be achieved by limiting pay raises. For military and general schedule civilians, the current policy option assumes a catch-up pay increase of 12 percent in fiscal year 1977. This catch-up raise is based on the current definition of comparability. However, the President has redefined comparability based on recommendations of the Rockefeller Commission. This redefinition would cut the raise to 6.3 percent even in the absence of other action. But the President proposes limiting, or "capping" raises at 4.7 percent.[22] The redefinition would save $1.7 billion; the cap would save an additional $0.6 billion.

In addition to the reduced raises for military and general schedule civilians, the President proposes a cap on pay raises for wage board (i.e., blue collar) civilians. Wage board raises vary by geographic area. But under the President's cap, the average raise would be 3.4 percent whereas the current policy estimates assume an average raise of

---

21. The President has not published estimates of his defense manpower budget levels beyond fiscal year 1977. The numbers in Table 11 for fiscal years 1978-81 are a projection of the costs of fiscal year 1977 numbers of personnel, adjusted to reflect the President's pay proposals and CPI assumptions.

22. The military pay raise is usually quoted at 4.5 percent. This is less than 4.7 percent because DoD plans to recoup part of the pay raise by charging more for housing supplied to some active duty military personnel.

9.2 percent. The wage board cap would save about $0.2 billion in fiscal year 1977.

Caps on pay raises would save $2.5 billion of the $3.9 billion reduction. But the President also proposes other reductions in compensation which, taken together, would save about $0.5 billion.[23] The President's plans include a reduction in construction of new family housing and in maintenance on existing housing, reduction in the commissary subsidy, elimination of the 1 percent kicker, reducing enlistment bonuses and clothing allowances, raising the rent charged for housing supplied to some military members, reducing several types of reserve pay, and cuts in military cadet pay.

Finally, the President plans reductions in numbers of personnel and in travel policies. Together these cuts would save about $0.4 billion. The main change would be a reduction of 26,000 in the number of DoD civilians between the end of the transition quarter and the end of fiscal year 1977. There would be no significant cuts in active duty end strengths, though accession and loss policies would reduce man-years by about 5,000. However, there would be a reduction in numbers of reserves in the expensive, paid-drill status; and there would be cost-saving revisions in travel policies.

All the cuts discussed above explain $3.4 billion of the $3.9 billion difference between current policy and the President's budget. The remainder is due to differences in inflation assumptions used in estimating retired pay and to differences between CBO and the DoD Comptroller in estimates of the level and distribution of pay of general schedule and wage board civilians.

Between fiscal years 1977 and 1981, the difference between the President's budget and the current policy level would grow from $3.9 billion, or 7 percent, to $8.7 billion, or 11 percent. One reason for the growth is that the personnel cuts made in fiscal year 1977 would not realize their full savings until fiscal year 1978 and beyond. More important, the President assumes over 5 percent less growth in the CPI between fiscal years 1977-81 than does the current policy projection. This assumption of lower inflation translates into lower pay raises than are in the current policy option and hence a lower cost for defense manpower.

---

23. Budget Options for Fiscal Year 1977 shows $0.8 billion for this number ($0.1 billion for elimination of the 1 percent kicker and $0.7 billion for other compensation cuts). More detailed analysis subsequent to publication of the report indicated that $0.5 billion is correct. However, for consistency with the Budget Options report, $0.7 billion is used in Table 11.

High Option

This paper has concentrated on alternatives that reduce defense manpower costs, because they are a large and growing fraction of total DoD outlays. The only alternative in this paper that adds to costs in all years is limited recomputation for older military retirees. Thus the high option consists of costs of limited recomputation added to the current policy option. As Table 11 shows, the high option would exceed the current policy option by $500 million in fiscal year 1977 (0.9 percent) and by $1 billion in fiscal year 1981 (1.3 percent). The high option would exceed the President's budget by 8 percent in fiscal year 1977 and 14 percent in fiscal year 1981.

The effect of the high option is to continue the fiscal year 1976 level of defense manpower resources except that funds are included to compensate older military retirees for the large catch-up wage increases of the late 1960s.

Low Option

The low option combines most of the alternatives[24] discussed earlier in the paper that reduce defense manpower costs in fiscal years 1977-81. These include a 5 percent cap on raises for military, general schedule, and military retirees in both fiscal years 1977 and 1978; a 7 percent compulsory contributory retirement system; and simple elimination of the 1 percent kicker. In addition, the low option includes other cuts in compensation proposed by the President and discussed above. The low option does not include any of the major reforms of retirement benefits because their complexity probably precludes implementing them by fiscal year 1977 and because they actually increase costs for the first few years after implementation. Nonetheless, benefit reforms are a promising way of saving large amounts of money in the more distant future.

As Table 11 shows, the low option is 8 percent below the current policy option and slightly below the President's budget in fiscal year 1977. Hence the low option would make significant real cuts in spending on defense manpower, cuts that are larger than those recommended by the President. By fiscal year 1981 the low option would be 10 percent below current policy; but, because of lower inflation assumed in the President's budget, the low option would be about 1 percent higher than the President's budget proposal.

---

24. This low option omits the cap on wage board civilians' pay raises. This was done to maintain consistency with other parts of the CBO Budget Options report. Including a 5 percent cap on wage board increases in fiscal years 1977 and 1978 would reduce costs of the low option in Table 1 by $0.2 billion in fiscal year 1977, $0.4 billion in fiscal year 1978, and $0.6 billion in fiscal years 1979-81.

The low option has important effects other than budgetary ones, the most important stemming from the combination of military and general schedule pay caps with contributory retirement. These alternatives would affect how well DoD can recruit and retain needed personnel. CBO's analysis suggests that, with a combined cap and contributory retirement system, DoD can obtain needed military recruits of adequate quality in fiscal years 1977 and 1978. In years beyond 1978, the situation is less clear. The effect of a two-year pay cap, plus contributory retirement, would at least require a return to the comparability pay raises included in the low option, if enough high-quality recruits are to be obtained. Higher raises than those included in the low option might be necessary if employment and private sector earnings improve more than anticipated.

By eliminating the 1 percent kicker, the low option would implement a post-retirement adjustment mechanism that would compensate military retirees for inflation in the CPI, but only after a lag of some months. Compensating after a lag is consistent with other federal retirement systems such as social security, but it would mean that the purchasing power of military retirees' annuities would not be fully maintained. Actually, the low option would not only eliminate the 1 percent kicker; it would limit retirement increases to the level of active duty increases in fiscal years 1977 and 1978. This retired pay cap would eliminate pay inversions and resulting incentives for early retirement.

APPENDIX A

FORECASTING MILITARY ENLISTMENTS 1977-1981

Results of GRC Study

Forecasts of military enlistments for 1977-81 are based on the most recent econometric study of the supply of enlistees to the Department of Defense. The paper, "The Supply of Enlisted Volunteers in the Post-Draft Environment," by David W. Grissmer of the General Research Corporation (GRC), was given at the Rand Conference on Defense Manpower, February 3-5, 1976. The paper[1] reported the results of a time-series analysis of monthly DoD enlistments from June, 1970, to July, 1975. This covers a substantial period since the end of the draft in December, 1972, as well as the earlier period of the draft lottery, during which it was possible to estimate volunteer enlistments with some accuracy.[2]

The GRC study estimated three different versions of an enlistment model in which the monthly enlistment rate is related to: (1) the ratio of military pay (regular military compensation) to civilian incomes for youths; (2) the unemployment rate for 16-21-year-old males; and (3) a set of seasonal factors. The versions of the model include a logarithmic model, a linear model, and a linear model with seasonal interactions, all of which provide nearly identical results. The data and the versions of the model are discussed in detail in the GRC paper.

The results of the study are best summarized in terms of pay and unemployment "elasticities." The pay elasticity is the percentage increase in nonprior service male enlistments in response to a 1 percent change in the ratio of military to civilian pay. Both the pay

---

1. Other work, presented at the conference by Alan E. Fechter, reports the results of a quarterly time-series analysis of Army enlistments between 1958-72. This study gives results that are reasonably consistent with the monthly time-series analysis of the Army. CBO uses only results applying to total DoD enlistments, however.

2. The lottery assigned draft priority numbers 1 to 366 to potential draftees on the basis of birth dates. No lottery number above 195 was ever called for the draft. Consequently, enlistments of persons with lottery numbers above 240 constitute an estimate of voluntary enlistments, if extrapolated to include all lottery numbers and persons too young to have received a lottery number.

ratio and the unemployment rate were statistically significant (at the 1 percent level). The 1970-75 time period affords an excellent opportunity to measure the effects of pay and unemployment on enlistment. In November, 1971, base pay for enlisted personnel with less than two years of service increased by approximately 100 percent. In late 1974 the unemployment rate for 16-21-year-old youths also increased sharply, rising by about 100 percent within a period of a few months. However, other factors also changed during this period which were not possible to account for in the analysis.[3] Thus, according to GRC, "the estimated pay elasticities ... should be interpreted as upper limits of the actual pay elasticities." (p. 35)

The results from an analysis of DoD enlisted volunteers are summarized in Table A. These estimated elasticities represent the average of the three versions of the enlistment model and were made for four different groups of enlistees. The groups represent persons with different employment and educational opportunities in the civilian sector but, more important, persons with different degrees of recruiting priority for the military. The category designation in Table A refers to scores on service aptitude tests, such as the Armed Forces Qualification Test.

APPENDIX TABLE A

AVERAGE PAY AND UNEMPLOYMENT ELASTICITIES
FOR ENLISTED VOLUNTEERS

Enlistment Group	Pay Elasticity	Unemployment Elasticity
High School Graduate, Category I-II	.89	.45
High School Graduate, Category III	1.15	.24
Nongraduate, Category I-II	1.35	-.30
Total, Category I-III	1.00	.14

3. A close correlation between pay increases and increases in advertising and recruiter resources made it impossible to enter these as separate variables.

Personnel in Category I-II score above the 65th percentile and are above average in ability. Persons in Category III are of average ability, scoring between percentiles 31 and 64. Personnel in Category IV are of below average ability and are not included in the analysis because military recruiters assign these individuals low priority in filling their quotas.

The purpose of the analysis is to estimate the supply of enlistees--that is, the number seeking to enter military service--rather than merely the number the services accept. Consequently, for the more able or highly educated groups, the military will be attempting to recruit all available enlistees, but for lower quality groups demand constraints may come into play. These results show up in the unemployment elasticities in Table A. Whereas pay elasticities increase as quality declines, varying only from 0.89 to 1.35, unemployment elasticities decline and become negative for nongraduates. Grissmer believes that the decline in unemployment elasticity is attributable to recruiting quotas emphasizing high quality enlisted personnel:

> The unemployment elasticities might be explained in terms of substitution effects. For the preferred quality groups, Category I, II, III high school graduates, higher unemployment brings additional personnel into the service. As more of these become available, the services accept a lesser number of the lower quality groups, i.e., Category I-II nonhigh school graduates. The negative unemployment elasticity for this group is consistent with such substitution effects.

As a result of this quality rationing, or "creaming," CBO has used the unemployment elasticity for the high school graduates, Category I-II, in forecasting enlistments. For a pay elasticity CBO has used the elasticity for total Category I-III personnel, as representative of the broadest group of potential enlistees.[4]

The combination of these results implies that a 1 percent increase in military pay or a 1 percent decrease in civilian wages produces a 1 percent increase in voluntary enlistments. An increase in youth unemployment by 1 percent increases recruiting by about 0.5 percent. Alternatively, if the elasticity had been formulated in terms of employment rather than unemployment, then a 1 percent

---

4. One reason that quality rationing may show up in the unemployment elasticity and not the pay elasticity is that the rise in unemployment occurred after the pay increase. At the time of the pay increase, voluntary enlistments were far below recruiting quotas; consequently, no creaming in Categories I-III was needed--or possible.

employment increase would reduce recruiting by about 2.5 percent.[5] Viewed this way, employment effects were every bit as strong as pay effects in the five-year period covered by the data.

Recruiting Projections, 1975-1981

Enlistments for the period 1977-81 can be projected using the GRC results and the various economic assumptions covering this time period. The projections make several specific assumptions:

- Calendar year 1975 is the base year for making projections and high school graduate enlistments in Mental Category I-III are the base group.
- The pay variables are military pay, adjusted for raises, and projected wages and salaries per employee in the civilian economy.
- Projected total unemployment rate is the only unemployment variable projected over the next five years, but CBO has constructed an estimated unemployment rate for workers 16 to 19 years of age.[6]
- The pay variable affects enlistments with a six-month lag, but changes in the unemployment rate have an instantaneous effect on enlistments.

---

5. The reason is that the unemployment elasticity is $\frac{\Delta v/v}{\Delta u/u} = .45$, where v is voluntary enlistments and u is the unemployment rate. The employment elasticity is:

$$\frac{\Delta v/v}{\Delta e/e} = \frac{\Delta v/v}{\Delta(1-u)/(1-u)} = -\frac{\Delta v/v}{\Delta u/(1-u)} = -\frac{1-u}{u}\ \frac{\Delta v/v}{\Delta u/u},$$

where e is the employment rate. At u = .15 and an unemployment elasticity of .45, the employment elasticity is -2.55.

6. Regression of the youth unemployment rate on the total unemployment rate yielded the equation:

$$\log_e U_{16\text{-}19} = 1.78 + .55 \log_e U_{total}$$

The change in $U_{16\text{-}19}$ was taken to be only 55 percent as great as the change in U_{total}, all changes expressed in percentage terms.

Projected enlistments beyond calendar 1975 depend on enlistments in 1975 and projected changes in the independent variables from their 1975 values. The projection equation can be written:[7]

$$E_t = E_{75}\left[\left(\frac{P_t}{P_{75}}\right)\left(\frac{M_t/C_t}{M_{75}/C_{75}}\right)\left(\frac{U_t}{U_{75}}\right)^{.2475}\right]$$

where

E_t = enlistments of HSG, Category I-III in period t.

P_t = male population, aged 18-19 years.

M_t = index of regular military compensation, lagged six months from time t.

C_t = total U.S. wages and salaries divided by employed labor force, lagged six months from time t.

U_t = total unemployment rate.

The portion of the equation contained in brackets was calculated separately and constitutes a recruiting index whose value is set at 100 in 1975. The recruiting for 1975-81 under the three economic assumptions and the four military pay assumptions is shown in Table B.

Under all three economic paths, unemployment and civilian wages and salaries are expected to improve throughout the time period. Only under current policy budget pay raises (average raise of 8.6 percent, 1975-81) does military pay keep up with civilian pay increases, but even these pay raises do not compensate for improvement in employment conditions throughout this time period. According to the table, the recruiting index tends to fall throughout the period. However, recruiting in 1981 obviously depends heavily on pay raise and economic assumptions, varying from 92 under current policy raises and path B economic assumptions to 68 under a continued 5 percent pay cap and path A assumptions.

---

7. The enlistment equation is:

$$\log_e (E_t/P_t) = a_0 + a_1 \log_e (M_t/C_t) + a_2\, b \log_e U_t$$

CBO has taken $a_1 = 1.0$, $a_2 = .45$, and the constant b representing the elasticity of youth unemployment to total unemployment to be .55. This does not represent the GRC equation, but uses results taken from that study.

APPENDIX TABLE B

RECRUITING INDEX, 1975-1981
(1975 = 100)

	Current Policy (8.6%)	President (6.5%)	2-Year Cap (6.4%)	5-Year Cap (5.0%)
President's Path				
1976	97	97	97	97
1977	96	92	92	92
1978	96	90	88	88
1979	93	86	84	82
1980	89	81	80	77
1981	87	79	77	74
CBO Path B: 5% Growth				
1976	97	97	97	97
1977	98	93	93	93
1978	99	92	90	90
1979	98	90	88	86
1980	94	87	85	82
1981	92	84	82	78
CBO Path A: 6% Growth				
1976	95	95	95	95
1977	92	88	88	88
1978	89	83	81	81
1979	86	79	77	76
1980	81	74	73	70
1981	80	73	71	68

Requirements and Quality

Although projecting the supply of enlistments requires troublesome assumptions, estimating accession requirements and the quality mix of new accessions is perhaps even more difficult. Estimates of requirements for nonprior service male accessions for 1977 through 1981 were derived from data provided by the Office of the Assistant Secretary of Defense for Manpower and Reserve Affairs (Table C). These figures assume approximately constant force sizes through 1981. These requirements were applied to all military pay assumptions, even though military pay has a strong positive effect on military reenlistment. Under the more austere military raises, requirements for new accessions by 1981 may rise due to a fall in reenlistments. No attempt has been made to quantify this relationship.

APPENDIX TABLE C

MALE NONPRIOR SERVICE ACCESSION REQUIREMENTS
(Calendar years)

1976	379,000
1977	373,000
1978	368,000
1979	368,000
1980	357,000
1981	350,000

Source: OASD/M&RA. Derived from fiscal year (June 30) data.

The base period enlistments for making projections consist of high school graduates, Mental Category I-III enlistments in 1975--a figure of approximately 240,000,[8] or 66 percent of male enlistments. Also in 1975, 71.5 percent of all enlistees (male and female) were

---

8. No complete breakdown of enlistments by sex, education, and mental aptitude is yet available for 1975. There were 284,000 enlistees with high school diplomas. Of these, CBO estimated 30,000 were women (of whom 90 percent are high school graduates) and another 14,000 were in Category IV, giving a figure of 240,000. Slight variations in these assumptions do not materially affect the calculations.

high school graduates and 96 percent were Mental Category I-III. CBO has used a quality standard requiring that 55 percent rather than 66 percent of male enlistees be high school graduates in Mental Category I-III. This standard is similar to 1974 totals, when 60.6 percent of all enlistees were high school graduates and 90.7 percent were Mental Category I-III. For DoD as a whole, 1974 was a good recruiting year. In contrast, the Central All-Volunteer Task Force in November, 1972, published a study of quality requirements under the volunteer force. Its conclusions imply that the services could meet quality requirements in terms of mental aptitude with anywhere from 16 to 19 percent of Category IV.[9] High school graduation is not covered under skill-based quality requirements; however, DoD has noted high attrition rates among men without high school diplomas. On balance, the 55 percent standard may be somewhat conservative if compared to minimum acceptable quality levels.

Tables 3 and 4 in the text are based on these quality assumptions.

Forecasting Error

The projection equation provides a point estimate of enlistments, where in fact both the estimate and future enlistments are subject to random fluctuations. It is possible, however, to make an educated guess at the standard deviation of the forecasts contained herein. Aside from the bias which may have crept into this estimate and the error in forecasting the economy, there are three sources of random variation statisticians would usually recognize in estimates of annual enlistments: (1) randomness in future enlistments; (2) lack of statistical independence among monthly enlistment totals; and (3) deviation of the independent variables from the means of the sample of values from 1970 to 1975. Only the first of these is computationally important in this case.[10] The standard error of the regression is a good estimate of the standard deviation of future enlistments. In all the GRC regressions standard error is between 8.5 and 11 percent of monthly enlistments. On an annual basis, the standard deviation is 10,000 to 12,000 enlistments per year--or about 3 percent of total

---

9. The study showed a range in terms of acceptable Category IV proportions: Army, 0.21 - 0.21; Navy, 0.12 - 0.17; Marine Corps, 0.16 - 0.22; and Air Force, 0.11 - 0.16. This produced a range of 0.16 to 0.19 for DoD as a whole using service manpower requirements, 1976-81, as a base.

10. The Durbin-Watson statistic was not significantly different from 2.0 in the equation based on the most highly sought after group of enlistees (HSG, Category I-II), but showed evidence of positive serial correlation where "creaming" may have been involved. Also, the values of the independent variables--pay and employment--tend back toward their mean values during the period 1977-81.

enlistments.[11] This is relatively small compared with other sources of variation in enlistments and is some indication of the accuracy of the forecasts.

---

11. Assumed monthly enlistments was a log-normal variable with $\mu = \log 20{,}000 = 4.3$ and $\sigma = .10$. The variance of monthly enlistments is:

$$e^{2\mu + \sigma^2} (e^{\sigma^2} - 1) = 4.06 \times 10^6$$

and the standard deviation is 2,015. The variance of annual enlistments is $12 \times 4.06 \times 10^6$, assuming monthly enlistments are independent and the standard deviation of annual enlistments is 7,000. These are only HSG, Category I-III, and extrapolating to the whole population yields a standard deviation of 10,000 to 12,000.

APPENDIX B

RETIREMENT COSTING

Preceding sections have discussed the costs of various changes to the current military retirement system: RMA, IAC, contributory retirement, 1 percent kicker, and a retired pay cap. This section discusses how the fiscal years 1977-81 costs were estimated, first for the current system and then for the changes.

Current System

If current policies are followed, military retirement costs would rise from $7.4 billion in fiscal year 1976 to $12.8 billion in fiscal year 1981. The methodology used to estimate the costs in Tables 7 and 11 begins with DoD estimates of costs of those already retired by fiscal year 1976 and new retirees in fiscal years 1976-81. The DoD estimates exclude any wage or CPI growth beyond January, 1975. CBO adjusted these DoD estimates for future wage and CPI growth. Specifically, this report inflated estimates of new retirees in their first year of retirement by expected growth in basic pay after January, 1975, and by any first-year CPI increases. This adjustment assumed that all persons retire mid-year and ignored all "save-pay" provisions in the retirement law; ignoring "save-pay" greatly simplifies the calculations at the expense of slightly understating costs during periods of pay inversions. Costs of new retirees after their first year (assuming no deaths from new retirees), and costs of those already retired by fiscal year 1976 (net of expected deaths), were simply inflated for expected CPI growth.

RMA and IAC

Table 7 shows costs for the RMA and IAC retirement plans. These results are based on runs of the NRETIR model made for CBO by the Office of the Assistant Secretary of Defense for Manpower and Reserve Affairs (OASD/M&RA). The runs use CBO's path B inflation assumptions. Table D shows the detailed results that led to cost changes in Table 7.

CBO has reviewed the parts of NRETIR that are documented and talked with OASD/M&RA about other parts; it has not reviewed the actual numbers used as input. The structure of the model seems reasonable and it is the best available. Nevertheless, some assumptions and possible problems should be made clear. Based on a recent survey of all the services, OASD/M&RA assumes that the services force out significant numbers of officers before they complete 20 years

APPENDIX TABLE D

COSTS OF POST-FISCAL YEAR 1977 RETIREES
(Millions of dollars, path B inflation assumptions)

Fiscal Year	Current System	RMA	IAC
1977	218	386	380
1978	603	741	715
1979	1,030	1,160	1,091
1980	1,483	1,575	1,441
1981	1,981	2,064	1,849
1985	4,408	4,340	3,644
1990	8,665	8,229	6,558
1995	14,827	13,553	10,543
2000	23,041	20,525	15,923

(force-outs are the same under model runs for RMA and IAC). But neither the RMA or IAC estimates assume any change in voluntary attrition. However, voluntary attrition should change, especially under IAC. More personnel should leave before completing 20 years, but more of those who complete 20 years should stay for 30 or more years. CBO cannot accurately estimate the dollar effects of putting these changes in the NRETIR model.

The runs also assume that equity payments for involuntary retirees are lump-sum payments, even though under IAC the recipient could choose a deferred annuity. This may overstate near-term costs of IAC. There may also be an error in calculating costs under IAC. The IAC plan only awards equity payments to involuntary retirees who have completed 10 or more years of service, versus five years under RMA. OASD/M&RA may have used an RMA assumption of five years in its IAC run, thereby overstating IAC costs.

After age 65 both RMA and IAC reduce military annuities by one-half the social security benefits attributable to military service. The formulas for estimating benefits attributable to military service require reconstructing the military wage history of retirees. In doing this, OASD/M&RA assumes that past wage increases equal future increases (6.5 percent in CBO runs). Since this 6.5 percent is

probably higher than past increases, the wage history and the offset are probably underestimated.

Contributory Retirement

Table 7 shows the savings under the four contributory retirement options discussed above. If contributory retirement is voluntary, savings in fiscal year 1977 would be $700 million if the contribution rate is 7 percent of basic pay and $1,010 million if the rate is 10 percent. If contributory retirement is compulsory, but those leaving before retirement receive refunds with interest of 3 percent per year, then savings in fiscal year 1977 would be $1,200 million with a 7 percent rate and $1,710 million with a 10 percent rate.

The savings under voluntary contributory retirement are estimated by applying percentages to estimated basic pay in each year. One percentage (3.86 percent) was used for the 7 percent option and another (5.51 percent) for the 10 percent option. The percentages were derived assuming "perfect foresight," i.e., only those who actually retire contribute. Specifically, the percentages were estimated in three steps: (1) the number in each length-of-service cell in the end fiscal year 1974 inventory was multiplied by the DoD actuary's estimate of the fraction in that cell expected to retire; this calculation was done separately for officers and enlisted; (2) either 7 percent or 10 percent of average basic pay rate for each length-of-service cell was applied to the results of step (1) to estimate contributions; and (3) total contributions were divided by total basic pay to determine the percentage.

The savings under compulsory retirement require estimates of total refunds, which were provided by DoD assuming that the force remains constant at its end of fiscal year 1976 level. These DoD estimates excluded any pay raises beyond October, 1975, and assumed no interest on refunds. To adjust for expected pay increases and for interest, CBO needed an estimate of refunds by the year in which the refunded contribution was made. CBO categorized refunds by the year in which they were made assuming that losses from each length-of-service cell remain constant in all years.

One Percent Kicker

This report has discussed savings under two ways of eliminating the 1 percent kicker. The first way keeps the current adjustment mechanism but, beginning with the first adjustment in fiscal year 1977, eliminates the additional 1 percent for existing retirees.[1] Savings

---

1. The first CPI adjustment for new retirees does not include the kicker and so is unaffected.

under this option were the difference between costs of total military retirement given the lower CPI increases and costs with the higher increases. A second method (H.R. 3310) substituted a new timing mechanism and so required changing the timing of the raises as well as their magnitude. In both cases, this analysis ignored all "save-pay" provisions in estimating costs.

Another way of eliminating the kicker is to eliminate the 1 percent extra increase but to include a lump-sum payment to make up for undercompensation. This method was proposed in the Interim Report of the Defense Manpower Commission (DMC). The lump-sum payment is included in the first check, and only the first check, whenever a CPI adjustment is made. The lump-sum payment C to all retirees is defined as follows:

$$C = M (1 + I) (3I + P)$$

where

M = total monthly pay of all retirees just before the CPI increase.

I = percentage increase in CPI from old to new base month.

P = sum of the percentage increases in the CPI over the old base month for each month from the old base month up to and including the new base month.

CBO estimated savings under this DMC mechanism by adding the cost of the lump-sum payment C to savings from simple elimination of the kicker. The payment C was estimated using the equation above. CBO calculated the associated I and P for each raise directly from the monthly CPIs under path B inflation. Next, M was estimated as one-twelfth of the total annual payments which would be made assuming all CPI (less the kicker) and wage growth up to the new base month. This analysis assumes that all new retirements occur before the first CPI raise.

The DMC also recommended changes in the way the first CPI adjustment is made. This report has ignored this recommended change in making cost estimates, but it should have little effect.

Retired Cap Pay

To estimate savings from eliminating the 1 percent kicker and imposing a 5 percent cap on retired pay in fiscal years 1977 and 1978, CBO simply reestimated total retirement costs assuming that the first raise in fiscal year 1977 was 4.9 percent (as it would normally be without the kicker) but that the second raise was only 0.1 percent rather than its normal level of 4.2 percent. The fiscal year 1978 raise was set at 5 percent. All raises beyond fiscal year 1978 were assumed to be at their normal level without the kicker.