

**ANALYSIS OF THE MILITARY
SURVIVOR BENEFIT PLAN**

**The Congress of the United States
Congressional Budget Office**

August 1, 1980

PREFACE

Over the last several years, the Congress has debated changes in the military Survivor Benefit Plan and may soon enact major revisions to it. These changes may be needed because of inequities in the current legislation that have become apparent since its enactment in 1972.

This study analyzes the current Survivor Benefit Plan, including how inequities in the plan affect government expenditures and the portion of costs paid by military retirees. The study then evaluates numerous alternatives to the plan that the Congress has considered to correct those inequities.

The study was done at the request of the Honorable Bob Wilson, Ranking Minority Member of the House Armed Services Committee. In accordance with CBO's mandate to provide objective analysis, it makes no recommendations.

The study was prepared by Robert F. Hale of the National Security and International Affairs Division of the Congressional Budget Office, under the general supervision of David S.C. Chu. The results benefit from extensive analysis performed for CBO by David Wilt of the American Management Systems, Inc. The author also gratefully acknowledges the contributions of Julia Doherty, Harold Furchtgott, John Green, and Nancy Swope, and the assistance of the Department of Defense in providing data and the basic cost model. Francis Pierce edited the manuscript; Janet Stafford prepared it for publication, in addition to typing the numerous preliminary analyses that preceded this final document.

Alice M. Rivlin
Director

August 1980

CONTENTS

	<u>Page</u>
SUMMARY	vii
CHAPTER I. INTRODUCTION	1
CHAPTER II. THE PRESENT SURVIVOR BENEFIT PLAN	3
Description	3
Problems Under the Current Law	4
Cost Sharing Under the Current Law	6
Costs Under the Current Law	11
CHAPTER III. THE SENATE ALTERNATIVE (S. 91)	13
Description	13
Cost Sharing Under S. 91	14
Costs	15
CHAPTER IV. OTHER ALTERNATIVES	17
The Fleet Reserve Association (FRA)	
Proposal	17
The Original S. 91	17
Retired Officers Association (TROA)	
Proposal	18
No Contribution Age 62 or Over	19
Effects of Key Provisions on S. 91	20
APPENDIX A. ANALYSIS OF SURVIVOR BENEFIT PLANS	25
APPENDIX B. METHOD AND DATA USED IN ESTIMATING OUTLAYS AND COST-SHARING RATIOS	41

SUMMARY

In 1972, the Congress enacted the military Survivor Benefit Plan (SBP), a voluntary program for military retirees. Those who elect to cover some or all of their retirement pay under the SBP contribute in the form of a reduction in that pay. In return, their survivors receive lifetime benefits that are adjusted for future increases in the Consumer Price Index (CPI).

Inequities that have developed since enactment of the SBP cause some retirees to contribute substantially more than their survivors will receive in benefits. Prompted by these inequities, the Congress has been debating changes in the SBP, focusing on limits on the so-called social security offset and limits on the amount withheld from retirement pay in return for survivor coverage.

This study analyzes the possible inequities and examines legislation passed by the Senate to correct them. The study also considers modifications to the Senate plan that could be considered in the House.

POSSIBLE INEQUITIES

Social Security Offsets

Under current law, most survivors' benefits are reduced by the full amount of any social security benefits the survivors receive based on their spouses' earnings during military service. The size of these social security offsets has grown sharply in recent years largely because recent military retirees, who were first covered under social security in 1957, have spent larger portions of their careers under the system. Offsets will continue to grow, particularly for survivors of officer retirees, mainly because of recent increases in maximum wages subject to social security coverage. As a result of these and other shifts, social security offsets will completely eliminate benefits for many survivors in future years.

Contribution Formula

Participants in the SBP contribute based on a formula that increases costs per dollar of survivor coverage as retirement pay increases. The "weighted" formula requires that retirees contribute 2.5 percent of their first \$300 per month of covered retirement pay and 10 percent of any amount above \$300. Each increase in military retirement pay because of growth in the CPI triggers a recalculation of SBP contributions. This recalculation pushes more pay into the 10-percent bracket of the formula and increases cost per dollar of coverage. Sharp increases in the CPI have already pushed up the costs of coverage over 1972 levels, and costs could continue to grow in future years. In contrast, the contribution formula for the survivor benefit plan for civil service retirees results in constant costs per dollar of coverage.

Other Inequities

Other possible inequities in the current law include problems of offsets for widows who are entitled to social security based on their own earnings, offsets for certain part-time reservists, exclusion from the SBP of widows whose spouses died before enactment of the program in 1972, and participation by some disability retirees who will never receive benefits.

Results of Key Inequities

The growing social security offsets, coupled with problems in the contribution formula, mean that military retirees may contribute considerably more than their survivors will receive in benefits. CBO estimates that, under current law, an average nondisabled person who retires in 1981 could contribute three times more than his survivor will receive. By the year 2000, an average retiree could contribute almost four times more than his survivor will receive. These results are highly sensitive to many detailed assumptions and should be regarded as rough guides. Nonetheless, they suggest that individuals are clearly bearing more of the costs than was intended. A Senate committee indicated when it passed the SBP in 1972 that military personnel who retired that year would bear about 60 percent of total costs.

SENATE ALTERNATIVE (S. 91)

On May 28, 1980, the Senate approved an alternative to the current SBP (S. 91) that would correct many of its inequities. S. 91 would revise the military contribution formula to conform to the civil service formula and would limit the social security offset to no more than 40 percent of survivor benefits. It would also make several other, more minor changes.

The two major changes outlined above would mean that an average nondisabled retiree who leaves the military in 1981 would bear about 70 percent of the cost of the program. Given the uncertainties in the estimates, this might be considered similar to what the Senate envisioned when it passed the SBP in 1972. While reducing costs to the individual, S. 91 would increase the government's costs. The additional costs would amount to \$280 million over the next five years and \$2.6 billion over the next 20 years. (All costs are in constant 1980 dollars.)

ALTERNATIVE PROVISIONS

Before approving S. 91, the Senate considered numerous alternative plans that are analyzed in this study and its appendixes. Various of these alternatives contained provisions that, while not included in the Senate bill, might be considered by the House. Key among them are:

Open Enrollment

Given the major changes envisioned in S. 91, the Congress could allow those who are not now participating in the SBP a chance to join retroactively. Such an "open enrollment" provision could decrease costs over the next five years by a total of \$200 million because of the added contributions by those who would elect to join. But costs over the next 20 years would increase by a total of \$480 million as survivors of new participants began receiving benefits. The difficulty of estimating the number of new participants under an open enrollment provision makes these cost estimates more uncertain than others in this study.

Indexing

Under current law, the contribution on the first \$300 of covered retirement pay equals 2.5 percent; the contribution equals

10 percent on amounts above \$300. The \$300 threshold is fixed in the law. This means that, as retirement pay for future retirees increases because of higher military pay, larger and larger portions of retirement pay are included in the 10 percent portion of the formula, which increases costs to participants. Progressive increases in costs could be avoided by "indexing" the \$300, which would mean increasing it each time military pay was increased and by the same amount. This would stabilize at today's levels the portion of costs borne by future retirees. Indexing would add a total of \$15 million to costs over the next five years and \$530 million over the next 20 years.

Halving the Social Security Offset

This provision, included in an earlier version of S. 91, would halve the social security offset for widows age 62 or older rather than limiting it to no more than 40 percent of total survivor benefits. Cutting the offset in half would be consistent with current provisions regarding social security contributions, which require that individuals pay half the total contribution. Halving the offset would tend to benefit those who retired some years ago, particularly officer retirees, more than would S. 91. But it would be less helpful than S. 91 for some current and future retirees, even though they will pay several times the costs of the SBP. Halving the offset, rather than the 40 percent limit now in S. 91, would add about \$60 million to the costs of S. 91 over the next five years and \$980 million over the next 20 years.

Eliminating the Mothers' Offset

Under current law, widows under age 62 receive a social security offset only if they are mothers with one dependent child. (Mothers under age 62 who have more than one dependent child are exempt from any offset, apparently on equity grounds, while young widows who have no children are not eligible for social security and so have no offset.) Under S. 91, the offset for mothers under age 62 who have one dependent child would be limited to no more than 40 percent of benefits, as would other offsets. Eliminating this mothers' offset altogether, which was proposed in an earlier version of S. 91 on equity grounds, would add \$40 million over the next five years and a total of \$150 million over the next 20 years.

CHAPTER I. INTRODUCTION

Over the last several years, the Congress has considered numerous possible changes to the military Survivor Benefit Plan (SBP). Various of these changes have been proposed and supported by members of the House and Senate, the Administration, and associations of military retirees. The proposed changes have been motivated by possible inequities in the current Survivor Benefit Plan that may cause those retiring today to pay substantially more than the total cost of the program.

CBO has assisted the Congress in considering numerous alternatives to the SBP. CBO has calculated changes in outlays under these alternatives as well as the effects of the alternatives on the portion of costs borne by individuals through their contributions to the program. This study briefly documents these analyses. It begins with a description of the current system and its problems. Then the study examines the alternative adopted by the Senate. Finally, it briefly examines the numerous other alternatives developed by the Senate Committee on Armed Services and its staff, as well as those developed by House staff members and other groups.

Appendix A of this study contains the final briefing charts that were presented to the committee staffs. These provide detail on the costs of the various alternatives and on the fractions of program costs that would be paid by the government and by SBP participants. Appendix B contains a technical description of the methods and data used by CBO to estimate the outlays and cost-sharing ratios.

CHAPTER II. THE PRESENT SURVIVOR BENEFIT PLAN

DESCRIPTION

In September 1972, the Congress established the military Survivor Benefit Plan (SBP). Under this plan, military retirees can receive a reduced military pension in return for the guarantee of benefits to their survivors. The retiree can elect whether to participate in the SBP and how much of his retirement pay to "cover" under the plan (subject to a minimum coverage of \$300 a month). The election, once made, is irrevocable.

Those who elect coverage contribute 2.5 percent of the first \$300 of covered retirement pay plus 10 percent of any amount in excess of \$300 a month. The contribution is recalculated each time military retirement pay is adjusted for increases in the Consumer Price Index (CPI). The contribution is the same for all types of retirees (nondisability and disability, reserve and active) and usually does not vary with the age of either the retiree or his potential survivor.

When the retiree dies, his survivor receives--for the remainder of his or her life--55 percent of the retiree's covered retirement pay as an annuity, less certain social security offsets. The annuity and the offsets are indexed to the CPI. The social security offsets for those age 62 or older equal 100 percent of the social security payments based solely on the retiree's military earnings. For survivors under age 62, the offset is required only if the survivor has exactly one dependent child.

The SBP is a complex program with numerous other provisions. These govern coverage of persons other than spouses (spouse-coverage provisions are the only ones considered in this study); effects of death of spouse, divorce, and remarriage; effects on the offset of reductions in social security; and a host of other provisions. The reader interested in more details is referred to a recent study by the Department of Defense, which also includes a history of military survivor benefit programs. 1/

1/ U.S. Department of Defense, Study of the Survivor Benefit Plan for Members of the Uniformed Services (February 1, 1979), Chapter 1.

PROBLEMS UNDER THE CURRENT LAW

Several features of the present SBP are widely regarded as serious inequities. One has to do with the nature of the contribution. Whenever retirement pay increases, contributions are recalculated. Because the contribution formula is "weighted"—that is, retirees pay 10 percent on covered retirement pay in excess of \$300 a month but only 2.5 percent on the first \$300—for most retirees, the recalculation results in increasing costs per dollar of coverage. For example, an enlisted retiree might cover \$400 a month of his retirement pay in 1980. He would then contribute \$17.50 a month toward the program, or about eight cents a month for each dollar of monthly annuity his survivor would eventually receive. (This calculation ignores the social security offsets, which are discussed below.) Ten years from now, if inflation continued at an average of only 6 percent a year, that same retiree would be contributing about \$49 a month, or over 12 cents a month for each dollar of monthly annuity his survivor would eventually receive. This increase in costs per dollar of coverage is viewed as inequitable because it drives up costs of coverage and because the increase, which is tied to future inflation, is difficult to predict when an individual elects coverage. This feature of the military SBP also differs from the civil service survivor benefit plan. That plan calculates the contribution at the time the civil servant retires, using the same basic formula as the military. But civil service contributions are then simply increased as the CPI increases, rather than being recalculated.

Another possible inequity is the size and nature of the social security offsets. These offsets are based solely on earnings while in the military. Since the military did not come under the social security system until 1957, the offsets were substantial but not confiscatory for those who retired in the 1960s and later joined the SBP. For a typical person with 20 years of service who retired in 1965, joined the SBP in 1972, and covered the full amount of his retirement pay, the offset for a survivor eligible for social security at age 62 would equal 65 percent for an enlisted retiree's survivor and about 30 percent for the survivor of an officer retiree (see Table 1). But the offsets grow sharply as retirees spend more time under social security. By 1980, the percentages would equal 100 percent—the entire annuity—for the enlisted retirees with 20 years of service and about 60 percent for 20-year officer retirees. By 1990, the percentages for 20-year retirees would be about 100 and 80 percent, respectively.

TABLE 1. EFFECTS OF THE SOCIAL SECURITY OFFSET UNDER CURRENT LAW

Year of Retirement	Retirement at		Percentage Reduction in SBP Annuity a/	
	Paygrade	Years of Service	100 Percent of Covered Pay	Minimum Coverage
1965	E-7	20	65	62
	E-9	30	28	60
	O-5	20	31	64
	O-6	30	16	66
1980	E-7	20	100	100
	E-9	30	58	100
	O-5	20	61	100
	O-6	30	33	100
1990	E-7	20	100	100
	E-9	30	66	100
	O-5	20	79	100
	O-6	30	46	100

a/ The offsets assume that the spouse is eligible for social security at age 62 (that is, they equal 82.9 percent of the principal insurance amount attributable to military service). The offsets also assume wage and price growth continuing at 6 percent and 5 percent a year, respectively, until the retiree reaches age 62.

The amount of the offset also varies widely by officer/enlisted status and by years of service at retirement. As the numbers in Table 1 suggest, the percentage reduction is larger for enlisted retirees than for officers, and for those who retire after 20 rather than 30 years of service. This occurs because the "weighted" nature of the social security formula provides a smaller percentage of benefits, and hence smaller offsets, to those with higher incomes. Officers and senior retirees, who have higher incomes, receive a smaller portion of their income as social security and hence as an offset.

Also, the percentage reduction caused by the offset depends heavily on the amount of retirement pay that is covered. Since under current law the offset is independent of the percentage of covered pay, those who cover the minimum allowable amount (\$300 a month) receive a larger percentage reduction--which usually amounts to 100 percent--than those who cover more of their retirement pay.

Nor are the social security offsets easy for the individual to predict when he must make an irrevocable decision about whether to participate in the SBP. Most retirees leave the military at ages 40 to 45. But the offsets are not calculated for most persons until at least 20 years later, when the retiree reaches age 62. In the interim, the Congress could change the social security law. Also, under the current social security law, offsets are tied partly to economic changes such as wage growth that occur over this long span of years.

The social security offsets and the contribution formula, while the major problems under current law, are not the only possible inequities. Persons whose spouses died before 1972, and therefore did not have a chance to participate in the SBP, have argued that they should receive added benefits. SBP recipients whose social security is based on their own earnings have argued that an offset based on their spouses' earnings is unfair. Part-time reserve personnel who retire and elect SBP coverage have argued that their social security offsets are too high because in some cases their pay during part-time military reserve service, when combined with earnings in their full-time civilian jobs, exceeds the maximum income creditable for social security purposes; thus their reserve earnings do not count toward social security benefits but do count toward the offset. Finally, SBP benefits for certain survivors of disabled retirees are reduced by benefits they can receive from other government programs. This could completely eliminate their SBP benefits. Such persons have argued that they should be able to opt out of the SBP once their disability status is final.

COST SHARING UNDER THE CURRENT LAW

Findings

These problems may be illustrated by estimates of the fraction of SBP costs paid by the individual. The fractions are good overall indications of the equity of the program because they

reflect not only the provisions of the current law but also the anticipated mortality of retirees and their survivors, expected economic conditions, economic "discount" rates that indicate preference for benefits now rather than later, and other factors. (See Appendix B for a description of the methods and assumptions used in calculating the fractions.) While the Congress has not recently stated the fraction of the costs it desires to be borne by the individual, the Senate committee report accompanying the 1972 legislation indicated that a person who retired in 1972 would pay about 60 percent of the total cost. That same report estimated that civil service retirees who elected their survivor coverage would pay about 60 percent of the total cost. 2/

Table 2 shows the fractions of costs paid by the individual, assuming the individual covers an amount of his retirement pay similar to the average amount covered by recent SBP participants. The table suggests that the average nondisabled retiree who retired in 1965, and then elected SBP in 1972 when it became available, will pay about 110 percent of the total costs of the SBP. Thus, the individual contributed slightly more than the total costs of the program. There appear to be several reasons why the percentage of costs paid by the individual is much higher than the 60 percent anticipated in 1972. One is that the 60 percent estimate made in the Senate report in 1972 assumed no future increases in wages or prices. 3/ Price changes, coupled with the contribution formula for military SBP, have pushed up the cost per dollar of coverage and will continue to do so. Also, the Congress changed the social security system in 1976. The new method of calculating the social security offsets could increase the offsets for some personnel, thus cutting down on their benefits and increasing the fraction of costs that they pay. Finally, increases in expected retiree lifespans, which increase contributions while reducing the years during which survivors would receive benefits, may have increased the percentage of costs borne by the individual.

While the average retiree in 1965 paid 110 percent of total costs, Table 2 shows that the average officer retiree paid only about 70 percent of the total cost and so received a subsidy;

2/ Survivor Benefit Plan, S. Rept. 1089, 92:2 (September 6, 1972), pp. 38-39.

3/ Ibid., notes to Tables 14 and 15, pp. 42-43.

TABLE 2. COSTS OF SBP ALTERNATIVES AND PORTIONS OF COSTS BORNE BY THE INDIVIDUAL

Alternative	Added Costs Above Current Law (millions of constant 1980 dollars with inflated dollars in parentheses)			Fraction of Cost Paid By Nondisability Retiree Who Covers Typical Amount of Retired Pay		
	1981-1985	1981-2000		1965	1981	2000
				retiree	retiree	retiree
Current Law	—	—	Officer	0.74	2.94	4.62
			Enlisted	1.23	3.21	3.68
			Force-wide	1.10	3.14	3.93
Senate (S. 91)	280 (380)	2,600 (5,950)	Officer	0.64	0.88	1.04
			Enlisted	0.43	0.64	0.95
			Force-wide	0.49	0.70	0.97
Fleet Reserve Association (FRA)	200 (280)	2,830 (6,680)	Officer	0.64	0.84	0.84
			Enlisted	0.43	0.56	0.56
			Force-wide	0.49	0.64	0.64
Original S. 91	690 (950)	5,890 (13,360)	Officer	0.52	0.89	1.20
			Enlisted	0.43	0.94	1.33
			Force-wide	0.44	0.93	1.29
Retired Officers Association (TROA)	680 (890)	6,650 (15,260)	Officer	0.34	0.56	0.66
			Enlisted	0.38	0.54	0.67
			Force-wide	0.37	0.54	0.67
No Contribution Age 62 or Over	490 (650)	3,320 (7,120)	Officer	0.40	1.83	3.18
			Enlisted	0.70	1.89	2.77
			Force-wide	0.62	1.87	2.88

the average enlisted retiree paid about 120 percent of the total cost. The difference between officer and enlisted retirees reflects the relatively larger impact of the social security offsets on enlisted personnel, as discussed above.

Table 2 also shows that the fractions paid by the individual grow rapidly over time. By 1981, the average retiree will be paying three times the cost of the program, and the retiree in the year 2000 will pay almost four times the total cost. The rapid growth is due largely to the increasing size of the social security offset as a percentage of SBP benefits. Table 2 does indicate one interesting shift between now and the year 2000. In 1981, officers are slightly better off relative to enlisted personnel; but the reverse will be true by the year 2000. This occurs because social security offsets for officer personnel will grow rapidly over the next two decades as a result of the increase enacted in 1976 in maximum wages subject to social security taxes. These increases will push up offsets for officers, more of whose pay will be subject to social security in the future, but will not affect enlisted persons whose pay is already fully covered.

Table 2 provides the major results of CBO's cost-sharing analysis. But two further results are shown in Tables A-7 and A-8 in Appendix A, which give the fractions by paygrades and years of service and give the fractions for maximum amount of covered retirement pay as well as average coverage. First, the current SBP is a much better program for those who retire with more than 20 years of service. An average enlisted retiree in 1965 with 20 years of service paid about 160 percent of the cost of the SBP, while one with 30 years of service paid only 50 percent of the total cost. Similar trends hold for officer personnel. The trends reflect the smaller proportion of SBP benefits consumed by the social security offsets for more senior retirees. Second, covering a larger percentage of one's retirement pay generally reduces the fraction of the costs paid by the individual. For example, an average retiree who retired in 1965 and covered an average percentage of his pay contributed three times the amount of benefits that his survivor will receive; a retiree who covered all his pay contributed about 2.5 times his expected future benefits. This difference reflects the smaller percentage of benefits consumed by social security offsets among those who cover more pay.

Limitations

The SBP plan could well be more favorable to the individual than the fractions above suggest. For one thing, the fractions

ignore the tax deferral afforded by the SBP. SBP contributions are deducted before reporting retirement income to the government. Hence, the retiree in the SBP does not pay taxes on his contribution. SBP benefits are eventually taxed, but normally during a period of lower tax rates. This tax deferral provides an important advantage that, for typical retirees, could reduce cost-sharing ratios by 5 percent to 15 percent and by more for some officer retirees in high tax brackets. ^{4/} This study ignored tax effects because they vary widely among individuals.

The cost-sharing ratios in this study also ignore protection against unforeseen price increases. The ratios reflect the effect of future price increases but, for lack of better information, assume a gradually declining annual rate of inflation over the next five years and a constant rate thereafter. If inflation suddenly increases sharply in future years (as has happened in recent years), the full CPI protection of SBP benefits offers protection available in few, if any, private-sector benefit plans.

Moreover, the cost-sharing fractions in this study assume average mortality rates for retirees and survivors. This ignores any "adverse selection" that could prompt those with a high risk of mortality to choose the SBP in disproportionate numbers. Among these high-risk groups, the SBP may be more advantageous than the ratios in this study suggest.

Finally, all the fractions presented in this analysis are for nondisabled retirees from active duty, who constitute the majority of all retirees. The fractions would generally be lower for disabled retirees because of their higher expected mortality, and for retirees from reserve service because they do not begin receiving retirement pay--and hence join the SBP--until they reach age 60. Moreover, the fractions capture the effects only of the contribution formula and social security offsets but not of the more minor liberalizations discussed above.

These factors suggest that the cost-sharing ratios in this study are a conservative estimate; the SBP may be a better deal for individuals than the ratios suggest. Nonetheless, the factors

^{4/} The illustrative calculations here assume that SBP participants are married and file joint returns using standard deductions. No account is taken of possible outside income, which could substantially affect the results.

probably do not reverse the conclusion that individuals pay more than the total cost of the SBP under current law, since the fractions of costs borne by the individual are substantially greater than one.

While the assumptions above could mean that the SBP would be more favorable than the fractions suggest, other assumptions simply cause uncertainty. The mortality and economic assumptions, for example, could be wrong. Cost-sharing ratios are particularly sensitive to assumptions about economic discount rates, which reflect preferences for money now rather than money later. 5/ Other assumptions--such as those about relative ages of retiree and spouse, future remarriage and divorce rates, and other factors--add more minor amounts of uncertainty to the ratios. The cost-sharing fractions also depend critically on estimates of expected social security offsets. These, in turn, depend on numerous detailed assumptions about the complex social security system; the correctness of the assumptions could vary widely among individuals. For all these reasons, the fractions in this study should be used as useful guides to trends rather than as absolute findings.

In addition to considering inherent uncertainty, the interpretation of fractions presented in this study for those who have already retired requires special caution. The fractions assume that the individual is assessing the SBP at the time of retirement (or in 1972 for those who retired before that year). This was done to ensure comparable fractions for past and future retirees. But those who have already retired should not use the fractions to judge the desirability of remaining in the SBP. Such an analysis should reflect the actual mortality and health experience of the retiree, and the retiree's actual age.

COSTS UNDER THE CURRENT LAW

Government outlays under the current law follow a pattern resulting from the recent enactment of the SBP and the cost-

5/ This study uses a real discount rate (that is, a rate after adjustment for inflation) equal to 2 percent a year. This is consistent with real returns on long-term government bonds, which may be a reasonable guide to an appropriate discount rate for the government. Higher discount rates would push up the cost-sharing ratios; lower rates would push them down.

sharing fractions discussed above. (See Table A-2 for estimates of outlays under the current law.) Until the mid-1980s, contributions by SBP participants will exceed payments to survivors since the SBP is a young program that has yet to generate large numbers of benefit payments. Thus, over this period, the government will "make money" on the SBP. From the mid-1980s until beyond the year 2000, however, payments to survivors will exceed contributions, and the government will "lose money." This reflects the subsidy enjoyed by many nondisabled retirees from 1965 and before and by almost all reserve and disabled retirees from this period. These retirees will reach old age and leave survivors over the next three decades. (The average length of retirement for a nondisabled retiree exceeds 30 years.)

If current law continues, the government will begin "making money" on the SBP again around the year 2010, and continue to make money from then on. This will reflect the large social security offsets for those who retired in 1970 and beyond. Such offsets will largely eliminate the survivor benefits and ensure that contributions exceed benefit payments.

As with the fractions of costs discussed in the preceding section, these cost estimates contain important uncertainties, particularly in the years beyond 2000. Key among them are the mortality rates and economic assumptions discussed in the preceding section. In addition, the estimates assume that persons continue participating in the SBP and covering their retirement pay at rates similar to those of the recent past. While better estimates are not available, a shift in participation or coverage could significantly affect costs, especially in the long run.

CHAPTER III. THE SENATE ALTERNATIVE (S. 91)

DESCRIPTION

On May 28, 1980, the Senate agreed to a major change in the Survivor Benefit Plan. This change, embodied in Senate Bill 91, was based on proposals by the Fleet Reserve Association and other groups. S. 91 would revise the contribution formula to be consistent with the civil service method. Under this revised method, contributions would be calculated on the date of retirement, or on the date of enactment of S. 91 for those already retired, and would increase after that time by the amount of the increase in the CPI rather than being recalculated after each increase. This change would be effective as early as October 1, 1980. In addition, S. 91 would limit the social security offset to no more than 40 percent of survivor benefits. As Table 1 suggests, this would reduce the social security offset for almost all enlisted retirees and for many officer retirees, particularly those who retire now and in future years.

In addition to these major changes, S. 91 would provide benefits to survivors of those who died before September 1972 (when SBP was enacted) while on active duty and eligible for retirement. Spouses of these survivors had no opportunity to elect either SBP or the survivor benefit plan that preceded it. S. 91 would eliminate the offsets for those reservists whose reserve military service occurred during periods when their combined reserve and full-time civilian earnings exceeded the maximum wages subject to social security. Finally, S. 91 would allow voluntary disenrollment of all totally disabled personnel who are currently in the SBP. Benefits for survivors of these totally disabled personnel are reduced by payments available to them under the Dependency and Indemnity Compensation (DIC) plan, and DIC benefits would generally eliminate most or all of the SBP benefits. These totally disabled personnel are contributing to the SBP, but their survivors will never receive payments (although their survivors will receive a refund of all contributions). The disenrollment provisions were proposed by S. 2463 and incorporated into S. 91.

COST SHARING UNDER S. 91

Table 2 shows that these changes would guarantee a subsidy for past retirees and for most who retire over the next two decades. Average retirees in 1981, the first year during which the proposed changes would be in effect, would pay about 70 percent of the cost of their survivor benefits. Given the uncertainties surrounding the estimates of the fractions, this 70 percent would be quite similar to the percentage envisioned by the Senate when the SBP was enacted in 1972. Individuals who retired in 1965, and elected the SBP in 1972, would pay about 50 percent of total costs. ^{1/} As the discussion in the preceding chapter pointed out, these cost-sharing estimates are conservative; factors not considered in determining the ratios may make the SBP a better deal for many retirees.

While S. 91 would offer a subsidy for those who retire today or who retired in past years, the fraction of costs borne by the individual would grow in coming years (though it would always remain less than under the current law). By the year 2000, average retirees would be paying almost the entire cost of the program. The growth would be caused by the nature of the revised contribution formula, which would still require that retirees pay 2.5 percent of the first \$300 of their covered retirement pay and 10 percent above that amount. The revision in the formula under S. 91 ensures that costs per dollar of coverage stay constant once a person has retired. But the revision leaves the \$300 fixed in nominal terms, which means that the smaller, 2.5 percent part of the contribution formula gradually becomes less important as pay raises push up retirement pay for future retirees. Thus for future retirees, the cost of each dollar of coverage grows, as does the fraction of costs paid by the individual. (The proposal of the Fleet Reserve Association, which is discussed in the next chapter, would arrest this growth.)

^{3/} In addition to reducing fractions of costs paid by individuals well below their levels under the current law, S. 91 would also alter some current law patterns. The SBP would no longer cost senior enlisted retirees substantially less, though it would cost senior officer retirees less. Nor would the new plan be a better deal for those who cover all their retirement pay rather than only part of it, as under the current law. (See Tables A-7 and A-8, as well as Table 2, for results underlying these conclusions.)

COSTS

One effect of the changes in S. 91 would be to increase outlays over those under the current law. CBO estimates that, in constant 1980 dollars, S. 91 would add \$280 million to total outlays over the next five years and \$2.6 billion over the next 20 years. (Table 2 also shows, in parentheses, added outlays assuming continued inflation. While not discussed in this study, these inflated-dollar estimates have been widely used during debate over changes to the SBP.) The details of the costs in Table A-4 show that, over the next five years, the change in the contribution formula accounts for more than half the added costs, with the added benefits for certain survivors of pre-1972 personnel accounting for another 25 percent. Over the next 20 years, the change in the contribution formula still accounts for half the costs, with the social security offset now accounting for another 40 percent. 2/

4/ Some of these added costs, namely the added \$60 million over the next 20 years for voluntary disenrollment of totally disabled personnel, are caused primarily by the 20-year period chosen by CBO for this study. The voluntary disenrollment provisions of S. 91 would allow totally disabled personnel to withdraw immediately from the SBP and cease contributing. Under the current law, these persons would continue contributing, but their survivors would eventually receive a refund of all contributions. Voluntary disenrollment would thus add costs now because contributions cease, but eventually it would result in lower costs of refunds.

CHAPTER IV. OTHER ALTERNATIVES

During its extensive consideration of possible changes to the SBP, the Senate Subcommittee on Manpower and Personnel considered numerous alternatives other than the one finally selected, including several proposed by retiree associations. Table A-1 details the provisions of the major alternatives, while subsequent tables in Appendix A show effects on cost-sharing and outlays. This chapter of the paper does not attempt to discuss every detail of the proposals, but rather indicates how they differ from S. 91. The alternatives are discussed in order of similarity to S. 91, beginning with the most similar. The end of this chapter summarizes some of the features drawn from these proposals that may be considered by the House during its debate over survivor benefits.

THE FLEET RESERVE ASSOCIATION (FRA) PROPOSAL

Much of S. 91 was modeled on the FRA proposal. The FRA revised the contribution formula and provided the 40 percent limit on social security offsets, the two key provisions of S. 91. The major difference from S. 91 was the "indexing" of the \$300 limit in the contribution formula included in the FRA proposal. This indexing would have increased that \$300 each time military pay was increased, and by the same amount. The effect would be to hold constant the cost per dollar of coverage for future retirees, and thus hold the fraction of costs borne by the individual at approximately the 1981 level. Over the next 20 years, however, this indexing would add \$530 million more to costs than would S. 91. (See estimates of costs of FRA proposal in Table A-4 for details.)

THE ORIGINAL S. 91

The original version of S. 91, which has been proposed by Senator Thurmond and others for several years, differed more sharply from the current version of S. 91 than did the FRA proposal. The original S. 91 would have made the same revision to the contribution formula as the current S. 91, but would have simply reduced most social security offsets by one-half rather

than limiting the offsets to no more than 40 percent of benefits. (Offsets of mothers with one dependent child would be eliminated altogether.) The original version of S. 91 would generally be more advantageous for those who retired some years ago. Many of those who retired some years ago, however, are already receiving some subsidy even under current law. (For details, see cost-sharing ratios for 1965 retirees in Table 2 and Tables A-7 and A-8.)

The reduced offsets under the original S. 91, both for those over age 62 and for mothers with one dependent child, also would increase costs over the next 20 years by \$2.2 billion, compared to \$1.1 billion under the current version of S. 91 (Table A-4). Higher costs would occur mostly because of the improved benefits noted above for those who retired some years ago. These persons will reach old age and leave survivors over the next 20 years.

Interestingly, in contrast to the result for those who retired in past years, the current version of S. 91 actually offers lower fractions to some current and future retirees (particularly enlisted retirees) than did the original version of S. 91 (see Tables A-7 and A-8). This occurs because the large size of many future social security offsets means that the 40 percent limit is more generous than simply cutting the offset in half.

In addition to the major difference in the proposed social security offset, the original version of S. 91 offered an open enrollment that would have allowed those not now participating in the SBP to join. It would have reduced or eliminated offsets for some (career) widows entitled to social security benefits based on their own earnings. It also provided added benefits not only for those survivors whose spouses died before September 1972 while on active duty and eligible for retirement, but also for all those who died in retirement before September 1972. All these differences together meant that the original S. 91 would have increased costs by \$5.9 billion over the next 20 years, compared to \$2.6 billion for the current version of S. 91 (see Table A-4).

RETIRED OFFICERS ASSOCIATION (TROA) PROPOSAL

The TROA proposal, differing still more from S. 91, would not only have revised the contribution formula as in S. 91 but would have provided a one-time recalculation of contributions so that, on and after enactment, contributions would equal their level

had the revised contribution formula been in effect since 1972. In addition, the TROA proposal would have provided a flat dollar offset to survivor benefits, equal for officers and enlisted, and not directly tied to social security. The offset would have been substantially smaller than the social security offsets under current law for most retirees, particularly officer retirees. TROA would have also made several other important changes not in S. 91 (see Table A-1). The total added costs of this proposal would have amounted to \$6.7 billion, the largest costs of any of the proposals (Table A-4). But, among all the alternatives examined in this study, the TROA proposal would have also provided the lowest overall fraction of costs borne by the individual, about 54 percent for an average retiree in 1981.

NO CONTRIBUTION AGE 62 OR OVER

This proposal differed most radically of all from S. 91. It would have made no change at all in the social security offset and hence in survivor benefits. This would have been consistent with the notion of the SBP as "gap" coverage that provides benefits before the survivor becomes eligible for social security; after age 62 the SBP would have provided little or no benefits for most survivors. The 1972 Senate report suggests that the Senate may have intended such a philosophy of gap coverage. Estimates in that report show substantial survivor benefits for widows before age 62, but small payments to some widows thereafter. ^{1/}

The proposal recognized, however, that individuals would be paying substantially more than the value of this gap coverage. In response, it would have revised the contribution formula as would S. 91 but would also have eliminated all contributions when the survivor reached age 62 or older and so passed the gap years. The proposal would add \$3.3 billion to total costs over the next 20 years, an increase similar in size to that for S. 91. But it would have left the typical retiree now and in the future paying more than the full cost of the program. Moreover, cost-sharing would have varied widely depending on years of service at retirement. The ratios would have been much lower for more senior

^{1/} Survivor Benefit Plan, S. Rept. 1089, 92:2 (September 6, 1972), Table 16, p. 44.

retirees, who are older at retirement and so buy coverage during the gap years when mortality rates are highest. (See Tables 2, A-7, and A-8 for details.)

EFFECTS OF KEY PROVISIONS ON S. 91

The proposals discussed above contain several provisions that could be debated by the House as it reviews S. 91. The effects of these provisions are discussed above. In some cases, however, the costs of the provisions differ when added to S. 91 rather than their original bill. Hence this section indicates how much each would add to the costs of S. 91. Table A-5 in Appendix A shows the details of the costs.

Both the original S. 91 and the TROA proposals allowed an open enrollment period during which those who had not previously joined the SBP could do so. An open enrollment attached to the current S. 91 would save about \$40 million in 1981 because of contributions by new participants but would add a total of \$480 million over the next 20 years. The long-run costs of open enrollment could be reduced by requiring that the survivors of those who elected to participate under the open enrollment, but who died within one year of election, would receive a refund of contributions but would not receive any survivor benefits. This would avoid the costs of "death-bed" elections. An open enrollment with such a one-year delay provision would save about \$40 million in 1981 and add a total of \$290 million over the next 20 years. The one-year delay significantly affects costs and savings over the next 20 years because CBO assumed that some participants under the open enrollment would be "death-bed" elections who would have very short lifespans (see Appendix B). This assumption, and the others connected with estimating costs of open enrollment, are highly uncertain and make these cost estimates less reliable than others in this study.

The House might also consider adding indexing to S. 91. Indexing of the \$300 threshold was discussed above in connection with the FRA proposal. Indexing the \$300 threshold to military wages, beginning with the wage increase in fiscal year 1981, would add negligibly to costs in 1981 but would add a total of \$530 million to costs over the next 20 years. The House might also consider indexing the \$300 threshold to the CPI. This would not hold cost-sharing fractions constant, as would indexing to military wages (see discussion of the FRA proposal above), but would be more consistent with other military retirement provisions that are tied to the CPI. Indexing to the CPI would

add negligibly to costs in 1981 but would add about \$510 million to costs over the next 20 years.

The original version of S. 91 proposed reducing social security offsets by one-half, rather than limiting them to no more than 40 percent of benefits. This would increase the costs of the current version of S. 91, since the limit of 40 percent is not always as generous as the reduction by one-half. Returning to a reduction of one-half in all offsets would add about \$5 million to costs in 1981 and would add a total of \$980 million over the next 20 years.

The original version of S. 91 also proposed complete elimination of the offset for mothers with one dependent child; the current version of S. 91 limits this offset to 40 percent. Adoption of this provision would add \$5 million to the costs of the current S. 91 in 1981 and a total of \$150 million over the next 20 years.

Yet another possible alteration to S. 91 would allow persons to increase the fraction of their retirement pay covered under the SBP. Because of the problems with the SBP discussed in this study, some participants now in the program chose to cover substantially less than 100 percent of their retirement pay; rates of coverage average around 70 percent for recent participants. CBO has no method for estimating how many participants would increase their coverage if allowed to do so. But, if those already in the SBP increased the fraction of their covered pay by 10 percent, then costs of S. 91 would go down by about \$20 million in 1981 because of added contributions but would increase by a total of about \$120 million over the next 20 years. Table A-5 in Appendix A also shows costs associated with increases in coverage by future retirees as well as costs of increases in participation by future retirees.

Finally, the House could consider altering S. 91 to allow participants now in the SBP, and future participants, to provide coverage for former spouses. Under current law, coverage can be provided only for current spouses. CBO has no method for calculating likely effects on costs of this provision. It seems unlikely, however, that significant numbers of persons would want to suffer a reduction in their retirement pay in order to provide coverage for a former spouse. Thus, this provision would probably add a negligible amount to costs.

APPENDIXES

APPENDIX A. ANALYSIS OF SURVIVOR BENEFIT PLANS

TABLE A-1. DESCRIPTION OF ALTERNATIVES TO THE CURRENT LAW

Alternative	Provisions
Senate S. 91	<p>Past retirees: Current offsets except offset cannot exceed 40 percent of benefits Changed contribution formula No offset for some reserves Added benefits for pre-1972 survivors whose spouses died on active duty Voluntary disenrollment for totally disabled</p> <p>Future retirees: Same as for past retirees</p>
Original S. 91	<p>Past retirees: 50 percent social security offset at age 62 or over No mothers' offset Changed contribution formula No offset for some reserves No offset for some "career" widows Open season Added benefits for pre-1972 survivors</p> <p>Future retirees: Same as past retirees</p>
Retired Officers Association (TROA)	<p>Past retirees: Offset ranging from about \$80 to \$110, CPI-adjusted, depending on age when social security benefits are elected (plus save-pay) Offset begins at age 60 to 65 depending on when social security benefits are elected No mothers' offset Reduce offset for career widows Changed contribution formula One-time recalculation of contribution to eliminate effects of current formula Reduced contribution when spouse reaches age 60 Open season, one year before effective Current participants can increase percentage of covered pay to 100 percent</p> <p>Future retirees: Similar to past retirees</p>

(Continued)

TABLE A-1. (Continued)

Alternative	Provisions
No contribution age 62 or over	<p>Past retirees: Current offsets Changed contribution formula No contribution when spouse age 62 or over (does not apply to Title III retirees)</p> <p>Future retirees: Same as past retirees</p>
Fleet Reserve Association (FRA)	<p>Past retirees: Current offsets, except offsets cannot exceed 40 percent of benefits Changed contribution formula</p> <p>Future retirees: Same as past retirees except \$3,600 base increased by future pay raises</p>
Senate staff	<p>Past retirees: Current offsets, except offsets cannot exceed 50 percent of benefits Changed contribution formula</p> <p>Future retirees: 50 percent social security offset age 62 or over 50 percent mothers' offset Changed contribution formula</p>

TABLE A-2. NET COSTS UNDER CURRENT LAW a/

	1981	2000	(2035 <u>b/</u>)	1981-1985	1981-2000
Millions of Constant 1980 Dollars					
Contributions	430	520	(640)	2,210	9,720
Payments	<u>260</u>	<u>720</u>	<u>(360)</u>	<u>1,670</u>	<u>10,810</u>
Net Costs (payments less contributions)	-170	200	(-280)	-540	1,090
Millions of Current Dollars					
Contributions	450	1,610	(11,030)	2,800	19,850
Payments	<u>270</u>	<u>2,250</u>	<u>(6,100)</u>	<u>2,140</u>	<u>23,420</u>
Net Costs	-180	640	(-4,930)	-660	3,570

a/ Assumes continuation of recent participation rates.

b/ Projections beyond the year 2000 are highly uncertain.

TABLE A-3. INCREASES OR DECREASES (-) IN NET COSTS UNDER SBP PROPOSALS (In millions of current dollars) a/

Proposal	1981	2000	1981-1985	1981-2000
<u>Senate S. 91</u>				
1. Changed contribution formula	9	220	220	2,610
2. Reduced offset age 62 or over	--	460	13	2,510
3. Reduced mothers' offset	4	20	30	250
4. No offset for some reserves <u>b/</u>	--	--	--	--
5. Added benefits for pre-1972 survivors (spouse died on active duty) <u>b/</u>	16	30	90	480
6. Voluntary disenrollment for some disabled <u>c/</u>	3	3	30	100
	<u>32</u>	<u>733</u>	<u>383</u>	<u>5,950</u>
<u>Original S. 91</u>				
1. Changed contribution formula	9	220	220	2,610
2. 50 percent offset age 62 or over	6	750	90	4,820
3. No mothers' offset	10	50	70	550
4. No offset for some reserves <u>b/d/</u>	--	--	--	--
5. No offset for some career widows <u>b/d/</u>	--	40	5	240
6. Open enrollment (DoD data) <u>b/d/</u>	-40	360	-240	1,940
7. Added benefits for pre-1972 survivors <u>b/</u>				
- Spouse died in retirement (DoD data)	130	80	710	2,720
- Spouse died on active duty (DoD data)	16	30	90	480
	<u>131</u>	<u>1,530</u>	<u>945</u>	<u>13,360</u>
<u>Retired Officers Association (TROA)</u>				
1. Changed contribution formula	9	220	220	2,610
2. One-time recalculation <u>e/</u>	130	140	720	3,100
3. Reduced contribution spouse over age 60	16	90	100	970
4. Reduced but earlier offset <u>f/</u>	-4	840	10	4,800
5. No mothers' offset	10	50	70	550
6. No offset for some career widows (S. 91 version) <u>b/ g/</u>	1	30	9	240
7. Open enrollment (DoD data) <u>b/ h/</u>	-30	420	-140	2,630
8. Increased coverage by current participants <u>b/ i/</u>	-13	100	-100	360
	<u>119</u>	<u>1,890</u>	<u>889</u>	<u>15,260</u>
<u>No Contribution Age 62 or Over</u>				
1. Changed contribution formula	9	220	220	2,610
2. No contribution age 62 or over <u>j/</u>	60	410	430	4,510
	<u>69</u>	<u>630</u>	<u>650</u>	<u>7,120</u>

(Continued)

TABLE A-3. (Continued)

Proposal	1981	2000	1981-1985	1981-2000
<u>Fleet Reserve Association (FRA)</u>				
1. Changed contribution formula	9	220	220	2,610
2. Indexed \$3,600 base	—	200	20	1,310
3. Reduced offset age 62 or over	—	460	13	2,510
4. Reduced mothers' offset	<u>4</u>	<u>20</u>	<u>30</u>	<u>250</u>
	13	900	283	6,680
<u>Senate Staff Alternative</u>				
1. Changed contribution formula	9	220	220	2,610
2. Reduced offset age 62 or over	—	360	7	1,890
3. Reduced mothers' offset	<u>2</u>	<u>20</u>	<u>16</u>	<u>200</u>
	11	600	243	4,700

a/ Estimates assume provisions become effective October 1, 1980. Estimates assume continuation of recent participation rates and CBO's March 1980 economic assumptions. These assumptions show price (wage) growth as follows: 1981, 10.0 (9.3); 1982, 9.7 (8.9); 1983, 8.7 (8.5); 1984, 8.3 (7.8); 1985, 7.8 (7.3); 1986 on, 5.0 (6.0).

b/ Little data exist to use in evaluating costs of these changes. Hence the estimates should be regarded as highly uncertain.

c/ Costs assume that provisions of S. 2463 becomes effective October 1, 1980, and that the contribution formula for SBP is changed to match the civil service method. The data used in these estimates are uncertain, which suggests caution in use of the estimates. The estimates assume that 15 percent or about 11,000 persons who are totally disabled disability retirees enrolled in SBP withdraw during the first year after implementation. This number is slightly less than the total of 12,570 totally disabled retirees estimated to be in the SBP program; the smaller number accounts for some who might stay on. Because there are likely to be fewer totally disabled retirees in the future, 10 percent fewer disability retirees are assumed to participate in each future year under S. 2463 compared to the current law; these persons are assumed not to join SBP at all. The number of persons whose status becomes less than totally disabled and who return to the program is assumed to be negligible. Refunds of contributions made by those who withdraw are provided at the time of the retiree's death.

TABLE A-3. (Continued)

- d/ Costs of these changes assume enactment of changes 1 to 3.
- e/ Estimates are rough approximations based on average amounts of covered pay and average length of service at retirement. Refined estimates--which would reflect wide variations in years of service at retirement, amount of retired pay, and percent of coverage--would require substantial additional analysis.
- f/ Estimates assume that survivors elect social security benefits as soon as they are eligible.
- g/ These costs are rough approximations of costs of eliminating career widow benefits in the fashion outlined under S. 91. S. 91 would eliminate the offset for any widow whose social security based on her own earnings exceeds that based on her spouse's earnings. The TROA written proposal suggests that the TROA career widow provision might not only cover widows affected by S. 91, but also limit the offset to the amount by which the widow's social security based on her spouse's earnings exceeds social security based on her own earnings. CBO has no basis for estimating the costs of such a proposal, but they could be substantially higher than those shown above.
- h/ The TROA proposal might allow participants whose spouses are over age 60 to avoid any contribution by electing minimum coverage. These costs assume that this provision is eliminated. If it is not, heavy participation at minimum coverage could substantially increase the costs. In addition, costs here assume the one-time recalculation for open enrollment participants.
- i/ Estimates assume that nondisability retirees who are in SBP increase their coverage enough so that average coverage increases by five percentage points (to 86 percent for enlisted and 80 percent for officers). These estimates are illustrative since no data exist to estimate how much coverage would be increased, if at all.
- j/ Contributions for reserve (Title III) retirees are not terminated when their spouse reaches age 62 since contributions only begin when the reserve reaches age 60.

TABLE A-4. INCREASES OR DECREASES (-) IN NET COSTS UNDER SBP PROPOSALS (In millions of 1980 dollars) a/

Proposal	1981	2000	1981-1985	1981-2000
<u>Senate S. 91</u>				
1. Changed contribution formula	8	70	160	1,210
2. Reduced offset age 62 or over	—	150	9	970
3. Reduced mothers' offset	4	7	20	120
4. No offset for some reserves <u>b/</u>	—	—	—	—
5. Added benefits for pre-1972 survivors (spouse died on active duty) <u>b/</u>	15	9	70	240
6. Voluntary disenrollment for some disabled <u>c/</u>	<u>3</u>	<u>1</u>	<u>20</u>	<u>60</u>
	<u>30</u>	<u>237</u>	<u>279</u>	<u>2,600</u>
<u>Original S. 91</u>				
1. Changed contribution formula	8	70	160	1,210
2. 50 percent offset age 62 or over	5	240	70	1,950
3. No mothers' offset	9	14	60	270
4. No offset for some reserves <u>b/d/</u>	—	—	—	—
5. No offset for some career widows <u>b/d/</u>	—	12	3	100
6. Open enrollment (DoD data) <u>b/d/</u>	-40	120	-200	650
7. Added benefits for pre-1972 survivors <u>b/d/</u>				
- Spouse died in retirement (DoD data)	120	30	530	1,470
- Spouse died on active duty (DoD data)	<u>15</u>	<u>9</u>	<u>70</u>	<u>240</u>
	117	495	693	5,890
<u>Retired Officers Association (TROA)</u>				
1. Changed contribution formula	8	70	160	1,210
2. One-time recalculation <u>e/</u>	120	50	570	1,680
3. Reduced contribution spouse over age 60	13	30	80	460
4. Reduced but earlier offset <u>f/</u>	-3	270	5	1,870
5. No mothers' offset	9	14	60	270
6. No offset for some career widows (S. 91 version) <u>b/g/</u>	1	11	7	100
7. Open enrollment (DoD data) <u>b/h/</u>	-30	140	-120	980
8. Increased coverage by current participants <u>b/i/</u>	<u>-12</u>	<u>30</u>	<u>-80</u>	<u>80</u>
	<u>106</u>	<u>615</u>	<u>682</u>	<u>6,650</u>
<u>No Contribution Age 62 or Over</u>				
1. Changed contribution formula	8	70	160	1,210
2. No contribution age 62 or over <u>j/</u>	<u>50</u>	<u>130</u>	<u>330</u>	<u>2,110</u>
	<u>58</u>	<u>200</u>	<u>490</u>	<u>3,320</u>

(Continued)

TABLE A-4. (Continued)

Proposal	1981	2000	1981-1985	1981-2000
Fleet Reserve Association (FRA)				
1. Changed contribution formula	8	70	160	1,210
2. Indexed \$3,600 base	—	70	15	530
3. Reduced offset age 62 or over	—	150	9	970
4. Reduced mothers' offset	<u>4</u>	<u>7</u>	<u>20</u>	<u>120</u>
	12	297	204	2,830
Senate staff alternative				
1. Changed contribution formula	8	70	160	1,210
2. Reduced offset age 62 or over	—	110	3	720
3. Reduced mothers' offset	<u>1</u>	<u>6</u>	<u>13</u>	<u>90</u>
	9	186	176	2,020

Footnotes to Table A-3 apply.

TABLE A-5. INCREASES (+)/DECREASES (-) IN NET COSTS OF S. 91 UNDER VARIOUS OPTIONS

Option	1981	2000	1981-1985	1981-2000
Millions of current dollars				
Open enrollment <u>a/</u>	-40	300	-250	1,530
Open enrollment (one-year delay) <u>a/</u>	-40	280	-320	1,170
Index to wages <u>b/</u>	--	200	20	1,310
Index to CPI <u>c/</u>	--	190	20	1,260
Halve offset over age 62 <u>d/</u>	6	290	80	2,310
Eliminate mothers' offset <u>d/</u>	6	30	40	300
Increase coverage (current) <u>e/ f/</u>	-30	170	-210	600
Increase coverage (future) <u>f/ g/</u>	-2	-60	-20	-500
Increase coverage and participation (future) <u>f/ h/</u>	-5	-190	-80	-1,720
Voluntary disenrollment <u>f/ i/</u>	16	-90	130	-310
Millions of 1980 dollars				
Open enrollment <u>a/</u>	-40	100	-200	480
Open enrollment (one-year delay) <u>a/</u>	-40	90	-260	290
Index to wages <u>b/</u>	--	70	15	530
Index to CPI <u>c/</u>	--	60	15	510
Halve offset over age 62 <u>d/</u>	5	90	60	980
Eliminate mothers' offset <u>d/</u>	5	7	40	150
Increase coverage (current) <u>e/ f/</u>	-20	50	-160	120
Increase coverage (future) <u>f/ g/</u>	-1	-18	-19	-220
Increase coverage and participation (future) <u>f/ h/</u>	-5	-60	-60	-750
Voluntary disenrollment <u>f/ i/</u>	15	-30	100	-50

a/ Little data exist to use in evaluating costs of these changes. Hence the estimates should be regarded as highly uncertain. The one-year delay option assumes that those that enroll under this option and die within one year receive a refund of contributions but no survivor benefits.

b/ See costs under FRA proposal in Tables A-3 and A-4.

c/ See costs under FRA proposal in Tables A-3 and A-4. Under this option, the \$300 threshold is increased with increases in the CPI.

TABLE A-5. (Continued)

- d/ These costs equal the costs under analogous provisions in the original S. 91 less those in the current S. 91. See Tables A-3 and A-4.
- e/ These costs assume that all those now participating in the SBP, less reserve retirees, increase their fraction of covered pay by an average of 10 percent. Reserves are excluded because their fraction of covered pay is already high.
- f/ The percentage increases in coverage, participation and disenrollment are illustrative. CBO has no method for predicting the amount of changes, if any.
- g/ These costs assume that those electing to participate in the SBP during or after fiscal year 1981, less reserve retirees, increase their fraction of covered pay by an average of 10 percent. Reserves are excluded because their fraction of covered pay is already high.
- h/ These costs assume that the numbers electing to participate in the SBP during and after fiscal year 1981 increase by about 30 percent over recent experience, except among reserve retirees. Reserve participation, which is already quite high, is assumed to remain unchanged. Costs also assume that personnel increase their fraction of covered pay as described in note g.
- i/ These costs assume that 10 percent of all nondisability retirees now enrolled in the SBP disenroll during fiscal year 1981. These costs do not assume any refund of contributions to those who disenroll. Disability and reserve retirees are not assumed to disenroll since the SBP is a highly subsidized program for these groups.

TABLE A-6. METHODS AND ASSUMPTIONS USED IN CALCULATING COST-SHARING RATIOS

Method: Computer model using equations reviewed by CBO actuary

Definition of ratio:

$$\text{Ratio} = \frac{\text{Present value of contributions}}{\text{Present value of benefits}}$$

Ratio of 1.0 means plan is actuarially neutral

Ratio above 1.0 means government "making money"

Ratio below 1.0 means government subsidizing individual

Ratio reflects many factors

- Provisions of current SBP law or alternatives
- Effects of social security assuming today's social security law
- Economic assumptions
- Discount rate: 2% in real terms
- Mortality, pay, remarriage, other factors

Some factors ignored

- Tax effects
 - Adverse selection by high-risk personnel
 - Value of full CPI protection in the event of unforeseen inflation
 - Open-enrollment provisions and provisions for added benefits for pre-1972 survivors and other minor provisions
-

TABLE A-7. COST-SHARING RATIOS (Assuming 100 percent of pay is covered)

Paygrade	Year of Service	Year of Retirement			
		1965 <u>a/</u>	1975 <u>a/</u>	1981	2000
Current Law					
E-7	20	1.03	3.09	3.46	3.92
E-9	30	0.47	0.84	1.19	1.31
O-5	20	0.77	1.32	1.91	2.87
O-6	30	0.47	0.71	0.83	1.10
Weighted Avg. <u>b/</u>		0.81	2.06	2.64	3.06
Senate S. 91					
E-7	20	0.49	0.70	0.73	1.03
E-9	30	0.46	0.68	0.69	0.78
O-5	20	0.72	0.97	0.98	1.13
O-6	30	0.46	0.69	0.79	0.86
Weighted Avg. <u>b/</u>		0.54	0.76	0.78	0.99
Original S. 91					
E-7	20	0.47	0.80	0.93	1.26
E-9	30	0.38	0.57	0.63	0.72
O-5	20	0.58	0.83	0.92	1.15
O-6	30	0.41	0.58	0.61	0.72
Weighted Avg. <u>b/</u>		0.47	0.74	0.85	1.08
Retired Officers Association					
E-7	20	0.33	0.51	0.61	0.73
E-9	30	0.37	0.48	0.49	0.52
O-5	20	0.41	0.57	0.64	0.73
O-6	30	0.36	0.48	0.50	0.53
Weighted Avg. <u>b/</u>		0.36	0.52	0.59	0.67
No Contribution Age 62 or Over					
E-7	20	0.63	2.04	2.16	3.04
E-9	30	0.26	0.56	0.77	0.90
O-5	20	0.44	0.89	1.26	2.05
O-6	30	0.26	0.39	0.45	0.61
Weighted Avg. <u>b/</u>		0.48	1.38	1.68	2.30

(Continued)

TABLE A-7. (Continued)

Paygrade	Year of Service	Year of Retirement			
		1965 <u>a/</u>	1975 <u>a/</u>	1981	2000
Fleet Reserve Association Alternative					
E-7	20	0.49	0.70	0.64	0.64
E-9	30	0.46	0.68	0.66	0.66
O-5	20	0.72	0.97	0.94	0.94
O-6	30	0.46	0.69	0.78	0.78
Weighted Avg. <u>b/</u>		0.54	0.76	0.72	0.72
Senate Staff Alternative					
E-7	20	0.56	0.80	0.95	1.28
E-9	30	0.46	0.78	0.63	0.73
O-5	20	0.72	1.12	0.93	1.15
O-6	30	0.46	0.69	0.61	0.72
Weighted Avg. <u>b/</u>		0.58	0.85	0.86	1.10

a/ These ratios are calculated at the year of retirement (for 1975 retirees) or the year SBP began (for 1965 retirees). The ratios do not include any actual actuarial results between the year of retirement and today. The ratios assume that the individual was under current law through 1980; the alternatives take effect in 1981.

b/ This average assumes that persons joining SBP at each year of service are at the median paygrade for that year of service, and that the fractions selecting SBP at each year of service remain the same as they were in recent years.

TABLE A-8. COST-SHARING RATIOS (Assuming average percent of covered pay a/)

Paygrade	Year of Service	Year of Retirement			
		1965 <u>b/</u>	1975 <u>b/</u>	1981	2000
Current Law					
E-7	20	1.64	2.89	3.36	3.95
E-9	30	0.50	1.01	1.80	2.10
O-5	20	0.86	1.83	4.33	5.91
O-6	30	0.49	0.80	1.01	1.68
Weighted Avg. <u>c/</u>		1.10	2.27	3.14	3.93
Senate S. 91					
E-7	20	0.42	0.59	0.63	1.01
E-9	30	0.48	0.64	0.66	0.77
O-5	20	0.69	0.90	0.91	1.11
O-6	30	0.48	0.77	0.77	0.85
Weighted Avg. <u>c/</u>		0.49	0.69	0.70	0.97
Original S. 91					
E-7	20	0.45	0.81	1.03	1.55
E-9	30	0.37	0.58	0.67	0.80
O-5	20	0.56	0.85	1.01	1.39
O-6	30	0.41	0.59	0.64	0.80
Weighted Avg. <u>c/</u>		0.44	0.76	0.93	1.29
Retired Officers Association					
E-7	20	0.43	0.38	0.55	0.72
E-9	30	0.35	0.46	0.48	0.52
O-5	20	0.33	0.50	0.59	0.72
O-6	30	0.34	0.45	0.48	0.53
Weighted Avg. <u>c/</u>		0.37	0.44	0.54	0.67
No Contribution Age 62 or Over					
E-7	20	0.94	1.74	1.89	3.02
E-9	30	0.27	0.66	1.14	1.44
O-5	20	0.48	1.19	2.73	4.18
O-6	30	0.27	0.43	0.54	0.93
Weighted Avg. <u>c/</u>		0.62	1.41	1.87	2.88

(Continued)

TABLE A-8. (Continued)

Paygrade	Year of Service	Year of Retirement			
		1965 <u>b/</u>	1975 <u>b/</u>	1981	2000
Fleet Reserve Association Alternative					
E-7	20	0.42	0.59	0.52	0.52
E-9	30	0.48	0.64	0.62	0.62
O-5	20	0.69	0.90	0.86	0.86
O-6	30	0.48	0.77	0.75	0.75
Weighted Avg. <u>c/</u>		0.49	0.69	0.64	0.64
Senate Staff Alternative					
E-7	20	0.48	0.68	1.06	1.59
E-9	30	0.48	0.74	0.67	0.80
O-5	20	0.79	1.04	1.02	1.41
O-6	30	0.48	0.77	0.64	0.80
Weighted Avg. <u>c/</u>		0.55	0.78	0.95	1.32

a/ Average percent equals 80 for enlisted and 75 for officers. The E-7 with 20 years of service in 1965 must cover 100 percent because of the \$3,600 minimum.

b/ These ratios are calculated at the year of retirement (for 1975 retirees) or the year SBP began (for 1965 retirees). The ratios do not include any actual actuarial results between the year of retirement and today. The ratios assume that the individual was under current law through 1980; the alternatives take effect in 1981.

c/ This average assumes that persons joining SBP at each year of service are at the median paygrade for that year of service, and that the fractions selecting SBP at each year of service remain the same as they were in recent years.

APPENDIX B. METHOD AND DATA USED IN ESTIMATING OUTLAYS AND
COST-SHARING RATIOS

This appendix first outlines the methods and data CBO used in estimating SBP outlays, then provides that same information for cost-sharing ratios. The appendix assumes that the reader understands the current Survivor Benefit Plan (SBP) and assumes familiarity with technical terms used in connection with estimates of outlays and present values.

ESTIMATING OUTLAYS FOR MAJOR SBP PROVISIONS

Model Overview

CBO used a single model to estimate outlays of all provisions of the SBP with the exception of outlays for open enrollment, added benefits for some career widows, and added benefits for certain pre-1972 survivors. The methods used to estimate costs for these more minor provisions are discussed in the next section.

The CBO model was adapted from one used by the Department of Defense. The model estimates costs in each year between 1981 and the year 2035. Estimates are made separately for "current beneficiaries" (that is, persons who are receiving SBP benefits as of the beginning of fiscal year 1981), "current retirees" (retirees who have elected to participate in the SBP as of the beginning of fiscal year 1981), and "future retirees" (those who retire on or after the beginning of fiscal year 1981 and elect to participate in the SBP). Within the categories of current and future retirees, estimates are made separately for nondisability, disability, and reserve (Title III) retirees because the characteristics of these groups differ widely. ^{1/} (Lack of data prohibited separating current beneficiaries based on whether their spouse was

^{1/} Throughout this appendix, "nondisability retirees" refers to those other than Title III reserve retirees, while "reserve retirees" refers to those nondisability retirees leaving under Title III.

a nondisability, disability, or reserve retiree even though characteristics of these groups would vary.)

For each of the groups, the model first developed the stock of retirees or beneficiaries, by age, as of the beginning of fiscal year 1981. The methodology then varied by the type of group. For current beneficiaries, the model applied mortality rates to determine numbers of surviving beneficiaries. Then the model estimated annual outlays for these beneficiaries based on expected SBP payments per individual, expected social security offsets, and inflation. For current retirees, the model applied mortality rates to the starting stock of retirees to determine numbers of remaining retirees by year. This number, plus the average retirement pay per individual, allowed estimation of SBP contributions. The application of mortality rates also provided an estimate of numbers of new survivors which, in turn, allowed estimation of the stock of survivors associated with current retirees. This stock provided the basis for estimates of survivor costs. Finally, for future retirees, the model accepted as data estimates of numbers retiring in future years and their rates of participation in the SBP. The model then estimated the numbers of future retirees and their associated contributions, plus numbers of survivors from these future retirees and their associated survivor costs, in a manner analogous to the one used for current retirees.

The remainder of this section provides more detail about each major step in the model.

Model Details

Determining Starting Stocks. CBO used estimates of numbers and costs of current beneficiaries based on data supplied by the Defense Manpower Data Center (DMDC). When outlay estimates were first made in 1979, the latest data available were from the end of fiscal year 1978. Tables B-1 and B-2 show the numbers and costs, respectively, of current beneficiaries as of the end of 1978. Numbers and costs of current beneficiaries were updated to the start of fiscal year 1981 so as to be consistent with estimates in the President's budget submitted in January 1980.

Numbers of current retirees were also based on DMDC estimates of those in the SBP as of the end of fiscal year 1978. Tables B-3 through B-5 show the data for nondisability, disability, and reserve retirees respectively. These numbers were updated to

fiscal year 1981 based on expected numbers of new retirees and mortality rates that are discussed below. Note that, unlike current beneficiaries, the starting stocks of current retirees consist only of numbers of retirees; the costs are developed by combining these numbers with estimates of average retirement pay per individual discussed below.

Applying Mortality Rates. The model's mortality rates equal the fraction of all those at a given age who die each year. The actuary of the Department of Defense (DoD) provided mortality rates for nondisability retirees (which were used both for reserve nondisability and regular nondisability retirees) and disability retirees. Tables B-6 and B-7 show these rates. Separate rates were used for officers and enlisted. Subsequent to initial provision of the data, the DoD actuary recommended a reduction of 5 percent in the nondisability mortality rates to reflect likely increases in longevity; the estimates in Table B-6 reflect that reduction.

The DoD actuary also provided estimates of mortality rates for survivors based on rates for survivors of civil service retirees. The rates, shown in Table B-8, are the same regardless of whether the survivor's spouse is a nondisability, disability, or reserve retiree but depend on whether the survivor's spouse was an officer or enlisted person. Consistent with average ages for SBP participants supplied by DMDC, CBO assumed that survivors are three years younger than their retired spouses.

Adding New Retirees. CBO estimated the total numbers of new retirees in each future year. For nondisability and disability retirees, the numbers are shown in Table B-9. The numbers assume that the active-duty military remains roughly constant in size and that persons continue leaving the military at rates similar to those experienced in recent years. For reserve retirees, estimates of those reaching age 60 and so becoming eligible for reserve retirement pay and participation in the SBP are not available. The model assumed that about 6,300 officers and 1,200 enlisted reach age 60 and become eligible for reserve retirement, and join SBP in each future year. These numbers equal the numbers reaching age 60 in fiscal year 1978 who participated in the SBP.

The model also needed the age distribution of these future retirees. All reserve retirees are age 60 when they become eligible for retirement. Tables B-10 and B-11 show the age distribution for nondisability and disability retirees, respectively,

in fiscal year 1978. The model calculated a distribution from these data and applied it to numbers of future retirees to estimate their ages.

Since not all these retirees join the SBP, the model needed estimates of future retirees who participate. Table B-12 shows the fractions used. The estimates equal the average of participation rates from fiscal years 1976 and 1978; data from 1977 were not reliable. The participation rates could vary under alternatives to the current SBP, and estimates in the study discuss the effects on costs of this variation.

Determining Amount and Coverage of Retirement Pay. Tables B-13 through B-15 show average retirement pay for nondisability, disability, and reserve retirees, respectively, who are classed as current retirees. These numbers are based on average retirement pay (before deductions for SBP or other programs) of all those retired at the end of fiscal year 1978. Tables B-16 and B-17 show estimates of retirement pay for nondisability and disability retirees, respectively, who are classed as future retirees; retirement pays for future reserve retirees are in a note to Table B-16. The estimates in Tables B-16 and B-17 equal retirement pay (before any deductions) for those retiring in fiscal year 1978. Data in all the tables (B-13 through B-17) are based on DoD reports. Numbers in all the tables are based on pay rates in fiscal year 1979; these are increased in the model to reflect growth in the Consumer Price Index or wages, as appropriate.

Under the SBP, retirees can elect to cover any fraction of their retirement pay so long as the covered amount exceeds \$300 a month; those whose retirement pay is less than \$300 a month must cover the entire amount. The model accepted estimates of the fraction of retirement pay covered under the SBP. Table B-18 shows the fractions. For current retirees, the fractions for nondisability and disability retirees come from estimates, derived from DMDC data, of the fractions covered during the last four years (less fiscal year 1977 when data were unreliable). This data did not permit disaggregation to derive separate rates for disability and nondisability retirees. Separate data for reserve retirees did suggest higher rates, as Table B-18 shows. For future retirees, data were disaggregated. Because nondisability retirees showed a downward trend in fractions over the last several years, the numbers in Table B-18 are from fiscal year 1978. Disability retirees showed no such trend, and so estimates reflect the average of the last four years (less fiscal year

1977). Reserve retirees also showed little trend, and therefore fractions for future retirees are assumed equal to those for current retirees.

Calculating Contributions and Gross Benefits. The data discussed above allow the model to calculate contributions to the SBP. The model first determines numbers of retirees participating in the SBP by applying mortality rates to the stock of retirees at the beginning of a year and, in the case of future retirees, adding new retirees. Then the model multiplies numbers of remaining retirees by their expected contribution, which depends on both their average retirement pay and the adjustment for the fraction of pay covered under the SBP. Under current law, the contribution equals 2.5 percent of the first \$300 of monthly covered pay plus 10 percent of any amount above \$300; the contribution is recalculated after every increase in retirement pay. Under some alternatives analyzed in this study, both the formula and the method of recalculation vary.

The data discussed above also allow calculation of gross SBP benefits (that is, benefits before any reductions for social security offsets). Application of mortality rates provides an estimate of numbers of new survivors, which increase the existing stock. Application of mortality rates to the stock provides an estimate of numbers of remaining survivors. Gross SBP benefits then equal 55 percent of covered retirement pay times numbers of remaining survivors.

Estimating Social Security Offsets. Under most alternatives considered in this study, social security offsets must be deducted from gross SBP benefits. These offsets depend on earnings during a retiree's military career that are covered under social security and hence on the length of that career. Since the military has only been covered under social security since 1957, the offsets also depend critically on when the retiree left the military, since early retirees had only a few years of covered service. Table B-19 shows estimates of social security offsets by years of service at retirement and by year of retirement.

Table B-19 assumes that offsets are calculated when the retiree reaches age 62, which conforms with current practice. Hence future economic assumptions influence results. All the numbers in Table B-19 are divided by price growth to produce constant 1979 dollars. (The model later adds back expected growth in consumer prices.) The underlying calculations reflect annual growth in wages and prices averaging 7.9 and 8.2 percent,

respectively, over the next five years and then 6 percent and 5 percent beyond the next five years. This real wage growth (that is, wage increases that exceed price growth) beyond the first five years increases social security offsets substantially relative to estimates that assume no growth. Nonetheless, the growth conforms with historical patterns and thus reflects the most likely pattern of future social security offsets.

Offsets in Table B-19 reflect current DoD instructions governing offsets and, in most cases, the social security law as amended in 1976. This law has several important provisions that influence the offsets: adjustment of earnings for wage growth up to the retiree's age at death or age 60, whichever comes first (this tends to increase the offset relative to calculations under the old law because military earnings, which occur early in a career, are weighted more heavily); substantial increases in maximum earnings subject to social security coverage (this pushes up offsets, particularly for officers); exclusion of earnings before age 22; and inclusion of \$100 a month in gratuitous social security credits for those whose earnings are below the maximum taxable rates.

Table B-19, and all subsequent tables dealing with social security offsets, presents offsets based on 82.9 percent of principal insurance amount, or PIA (PIA is a technical term in the social security law that is beyond the scope of this discussion.) The model adjusts these offsets to reflect the widow's age and status at the time she becomes a survivor, since the percentage of the PIA varies.

Under current law, widows age 62 or over receive an offset that ranges from 82.9 percent of PIA up to 100 percent of PIA for those age 65 or over. Widows under age 62 receive an offset under current law only if they have exactly one dependent child; their offset equals 75 percent of PIA.

While Table B-19 provides the basis for the final offsets used in the model, further calculations are needed. The model must associate an offset with a person who becomes a survivor in a given year. On average, that person's spouse retired more than 30 years earlier. Thus CBO calculated offsets that reflect the range of lags between year of retirement and the year a person's spouse becomes a survivor. Under current law, widows with one dependent child receive an offset under age 62, while all widows receive an offset at age 62 or over. Since the lags between retirement and the year a person becomes a survivor vary for these

two groups, CBO calculated the offsets separately for each group. The lag also varies, of course, for current beneficiaries, current retirees, and future retirees, as well as for nondisability, disability, and reserve retirees. Hence offsets for each group are separately estimated.

Tables B-20 through B-31 show the results of these numerous calculations. Each table shows offsets for a given group, by the fiscal year in which a person becomes a survivor. For a given year, offsets in these tables are lower--often much lower--than corresponding numbers in Table B-19. This reflects the lag between year of retirement, which is the basis in Table B-19, and the year a person becomes a survivor, which is the basis in the other tables.

The offsets in Tables B-20 through B-31 apply to current law. Some alternatives in this study, such as the original version of S. 91, simply cut these offsets in half. Other alternatives, such as the version of S. 91 passed by the Senate, limit the offsets to no more than 40 percent of survivor benefits. CBO recalculated the offsets to reflect this limit, and the results are shown in Tables B-32 through B-38. (For future retirees, the model imposed the 40 percent limit internally; hence Tables B-32 through B-38 do not have data on future retirees.)

Economic Assumptions. Economic assumptions play an important role in the analysis of the current SBP and alternatives. Inflation and wage growth influence contributions, benefits, and social security offsets. Table B-39 shows the economic assumptions used in this study. For fiscal years 1981 to 1985, the numbers reflect CBO assumptions as of March 1980. In years beyond 1985, the study assumed annual wage and price growth of 6 percent and 5 percent, respectively. The modest real wage growth implicit in these long-run assumptions is consistent with historical trends.

Auxiliary Data. Estimating SBP outlays requires a variety of auxiliary data. For example, the size of offset for widows under age 62 depends on whether or not the widow has exactly one dependent child. Table B-40 shows the fractions of widows with one dependent child; the fractions were derived from a 1976 Census publication (Report 297, Series P-20). SBP participants who divorce their spouse can cease contributing to the program and, of course, their spouses would not receive any benefits. Table B-41 shows fractions of participants who are divorced in a given year. The DoD actuary derived these rates from census data.

Also, survivors who remarry prior to age 60 lose their SBP benefits. Table B-42 shows fractions of survivors who remarry. The fractions are based on a 1976 monthly report of vital statistics produced by the Department of Health, Education, and Welfare (DHEW 78-2210).

ESTIMATING OUTLAYS FOR SPECIAL SBP PROVISIONS

Open Enrollment

Some alternatives to the current SBP law would provide for an "open enrollment" during which those who previously elected against participation in the SBP can change their minds and join. Most provisions allow 270 days for non-participants to change their minds. This study relied on estimates made by the Department of Defense that about 145,000, or roughly 25 percent of all non-participants, would elect coverage under an open enrollment. The study also assumed that the distribution of disability and nondisability non-participants electing coverage under an open enrollment would equal the current distribution of these types of retirees in the SBP. As for age distribution, the study used the distribution of all those not now participating in the SBP or its predecessor plan (called the Retired Serviceman's Family Protection Plan, or RSFPP). Table B-43 shows this age distribution. Finally, the study assumed that about 6,000, or 4 percent, of these non-participants would be "death-bed" persons who would elect coverage and then die within five years after election. CBO had no empirical basis for this estimate, but it seemed more realistic to include a small fraction of death-bed elections rather than to ignore the issue.

Given the data discussed above and with the exception of mortality rates for death-bed elections, CBO estimated the costs of an open enrollment provision using the model and data discussed above. Mortality rates were applied to the starting stocks, estimates were made of numbers of remaining retirees and their contributions, and estimates were made of numbers of remaining survivors and their costs. The only exception was the assumption that 20 percent of surviving persons making death-bed election would die in each of the first five years after their election.

"Career" Widows

Some alternatives to the current SBP would provide that widows entitled to social security payments based on their own

incomes would be exempt from any social security offsets. The fraction of widows affected by this provision is difficult to estimate, since it depends on patterns of earnings by husbands and wives both over the last several decades and, for current and future retirees, over the next several decades. It also depends on maximum earnings subject to social security, since this influences the pattern of husband and wife earnings covered by social security. CBO had little data to use in making this estimate. But a 1976 survey of DoD personnel, which asked about spouse earnings, suggested that only a few military spouses earned more than their husbands during that year. Extrapolating courageously from this highly limited bit of information, CBO assumed that 5 percent of all spouses would be entitled to social security based on their own earnings and would avoid any offsets under this provision. Multiplication of the 5 percent times estimated offsets yielded the CBO estimate for this provision.

Added Benefits for Pre-1972 Survivors

Some alternatives to the current SBP would provide that survivors of persons who died before 1972, and therefore could never have joined the SBP, would automatically receive SBP benefits. These pre-1972 survivors include some whose spouses died while in retirement and others whose spouses died on active duty. CBO relied on DoD estimates of the numbers and average annuities of both groups. DoD estimates suggest that in 1980 roughly 39,000 survivors of spouses who died while in retirement would each be eligible for an average of about \$2,800 a year, after all offsets; another 21,000 survivors of spouses who died on active duty would each be eligible for an average of over \$500 a year, after all offsets. To simplify the calculations, CBO assumed that all survivors of spouses who died while in retirement were age 72 in 1980 while those whose spouses died on active duty were age 62. The calculation of costs relied on mortality rates for survivors discussed above.

ESTIMATING COST-SHARING RATIOS FOR MAJOR SBP PROVISIONS

CBO estimated the fraction of the costs of survivor benefits borne by the individual. Thus, a cost-sharing ratio of 1.0 means that the retiree pays for all benefits. A ratio less than 1.0 indicates a subsidy by the government, while a ratio greater than 1.0 indicates that the government is "making money" on the program.

FIGURE 1. SIMPLIFIED VERSION OF EQUATION USED TO ESTIMATE COST-SHARING RATIOS

$$\text{Ratio} = \frac{\text{Present value of contributions}}{\text{Present value of SBP survivor benefits}}$$

$$\begin{array}{r}
 \sum_{i = \text{retirement age}}^{\text{age 100}} \left\{ \begin{array}{l} \text{Contributions} \\ \text{in year } i \end{array} \right\} \times \left\{ \begin{array}{l} \text{Probability of} \\ \text{survival of} \\ \text{retiree to year } i \end{array} \right\} \times \left\{ \begin{array}{l} \text{Probability of} \\ \text{survival of} \\ \text{spouse to year } i \end{array} \right\} \times \left\{ \frac{1}{\text{cumulative discount} \right. \\ \left. \text{rate to year } i} \right\} \\
 \hline
 \sum_{i = \text{retirement age}}^{\text{age 100}} \left\{ \begin{array}{l} \text{Gross} \\ \text{survivor} \\ \text{benefits} \\ \text{in year } i \end{array} \right\} - \left\{ \begin{array}{l} \text{Social} \\ \text{security} \\ \text{offset} \\ \text{in year } i \end{array} \right\} \times \left\{ \begin{array}{l} 1 - \\ \text{Probability} \\ \text{of survival} \\ \text{of spouse} \\ \text{in year } i \end{array} \right\} \times \left\{ \begin{array}{l} \text{Probability} \\ \text{of survival} \\ \text{of spouse} \\ \text{to year } i \end{array} \right\} \times \left\{ \frac{1}{\text{cumulative} \right. \\ \left. \text{discount rate} \right. \\ \left. \text{to year } i} \right\}
 \end{array}$$

Figure 1 shows a simplified, word version of the equation used to calculate the cost-sharing ratios. The ratios equal the present value of contributions divided by the present value of survivor benefits under the SBP. The present value of contributions reflects the amount of contributions in each year, which varies according to economic assumptions and depends on whether the ratio represents current law or an alternative to the current SBP. The present value of contributions also depends on the probability of a retiree surviving to pay the contribution and on a "discount rate" that reflects the retiree's preference for money now rather than money in the future. The present value of survivor benefits begins with the gross SBP benefits, less any offset, under the current SBP or an alternative. These benefits reflect economic assumptions. The present value of benefits also depends on the probability that the spouse is a survivor (which equals one minus the probability of the survival of the retiree) as well as on the probability that the spouse is still alive. The present value of benefits also reflects the discount rate. The equation in Figure 1 is, of course, a simplification of the equation actually used. The simplification ignores some detailed aspects such as divorce and remarriage as well as the detailed method of calculating contributions and benefits.

CBO used the equation in Figure 1 to calculate ratios under current law and each of the major alternatives to the SBP. The ratios reflect major provisions that affected contributions and benefits, but do not reflect more minor provisions such as an open enrollment or added benefits for pre-1972 survivors. To keep the workload manageable, CBO only calculated ratios for nondisability retirees; ratios for disability retirees and reserve retirees would generally be lower. CBO did calculate ratios separately for officers and enlisted and for various years of service at retirement, since these factors greatly influence contributions and benefits. CBO also calculated ratios for those retiring in various fiscal years to reflect changes in the size of the social security offsets. For each fiscal year, CBO calculated an average cost-sharing ratio for the entire retiree population. The average was a weighted sum of the individual ratios; the weights equal the fractions in recent years who retired at each year of service.

These cost-sharing ratios depend on anticipated amounts of retirement pay, coverage of retirement pay, expected social security offsets, mortality rates, economic assumptions, and divorce and remarriage rates. The estimates of cost-sharing ratios relied on the same data used to calculate outlays (see above). Cost-sharing ratios also depend on discount rates. CBO

used a "real" discount rate of 2 percent (that is, a rate two percentage points above the expected rate of inflation). This discount rate is slightly lower than the real rate of 2.5 percent used in official government evaluations of the civil service retirement system. But 2 percent is at the upper end of the range of real returns on long-term government bonds, which may be a reasonable basis for estimating the government's discount rate.

TABLE B-1. CURRENT SBP BENEFICIARIES BY AGE AS OF END OF FISCAL YEAR 1978

AGE		AGE	
22	10.	62	1110.
23	11.	63	1174.
24	17.	64	1105.
25	23.	65	1013.
26	11.	66	1041.
27	15.	67	928.
28	32.	68	932.
29	33.	69	867.
30	39.	70	825.
31	47.	71	777.
32	52.	72	673.
33	54.	73	663.
34	51.	74	613.
35	91.	75	589.
36	100.	76	509.
37	142.	77	487.
38	142.	78	441.
39	162.	79	322.
40	204.	80	355.
41	239.	81	278.
42	300.	82	243.
43	340.	83	208.
44	359.	84	165.
45	347.	85	105.
46	463.	86	100.
47	492.	87	13.
48	536.	88	57.
49	582.	89	41.
50	654.	90	29.
51	744.	91	15.
52	857.	92	20.
53	957.	93	12.
54	1095.	94	11.
55	1226.	95	2.
56	980.	96	2.
57	1311.	97	5.
58	1285.	98	3.
59	1181.	99	0.
60	1155.	100	9.
61	1145.	101	0.

TABLE B-2. MONTHLY SBP PAYMENTS TO CURRENT BENEFICIARIES AS OF SEPTEMBER 30, 1978 (In thousands of 1979 dollars)

AGE		AGE	
22	2130.	62	426873.
23	1557.	63	443186.
24	2694.	64	425085.
25	5204.	65	406031.
26	2467.	66	396037.
27	3220.	67	350566.
28	7701.	68	338325.
29	9195.	69	329133.
30	14217.	70	313281.
31	15554.	71	292075.
32	17497.	72	260034.
33	19050.	73	243395.
34	16263.	74	234545.
35	37976.	75	231049.
36	33260.	76	194026.
37	50421.	77	171779.
38	47813.	78	172173.
39	59205.	79	127262.
40	69217.	80	135358.
41	82506.	81	108855.
42	110004.	82	92261.
43	136902.	83	84986.
44	145821.	84	72369.
45	130893.	85	44832.
46	173803.	86	37791.
47	185513.	87	34882.
48	200730.	88	25035.
49	210687.	89	14406.
50	256215.	90	9180.
51	265671.	91	4307.
52	324478.	92	5443.
53	369418.	93	4508.
54	430536.	94	2533.
55	493412.	95	2464.
56	491579.	96	350.
57	522509.	97	1068.
58	527663.	98	525.
59	467299.	99	0.
60	447800.	100	3702.
61	449978.	101	0.

TABLE B-3. CURRENT NON-DISABILITY SBP PARTICIPANTS BY AGE (End of fiscal year 1978)

AGE	OFF	ENL	AGE	OFF	ENL
19	0.	0.	60	8596.	7865.
20	0.	0.	61	7460.	6211.
21	0.	0.	62	6205.	5077.
22	0.	0.	63	5353.	4261.
23	0.	0.	64	4351.	3423.
24	0.	0.	65	3520.	2763.
25	0.	0.	66	3326.	2318.
26	0.	0.	67	3034.	1977.
27	0.	0.	68	2708.	1703.
28	0.	0.	69	2453.	1447.
29	0.	0.	70	2166.	1289.
30	0.	0.	71	1850.	1041.
31	0.	0.	72	1586.	818.
32	0.	0.	73	1445.	731.
33	0.	0.	74	1227.	644.
34	0.	4.	75	1022.	517.
35	0.	16.	76	954.	511.
36	4.	225.	77	763.	434.
37	69.	1106.	78	621.	418.
38	224.	3184.	79	437.	333.
39	462.	6076.	80	413.	246.
40	727.	9424.	81	336.	164.
41	970.	12214.	82	252.	160.
42	1474.	13971.	83	265.	133.
43	2338.	14855.	84	191.	101.
44	3125.	14745.	85	166.	92.
45	3731.	14382.	86	140.	71.
46	3999.	14466.	87	103.	61.
47	4397.	15216.	88	64.	54.
48	4838.	16888.	89	42.	30.
49	4603.	15365.	90	39.	27.
50	4020.	13955.	91	20.	25.
51	3266.	11853.	92	23.	24.
52	3454.	10824.	93	12.	12.
53	4765.	11133.	94	7.	11.
54	5819.	11332.	95	5.	9.
55	6478.	10654.	96	1.	2.
56	7936.	11192.	97	0.	0.
57	9235.	10792.	98	2.	4.
58	9825.	10544.	99	0.	0.
59	8634.	8519.	100	0.	0.

TABLE B-4. CURRENT DISABILITY SBP PARTICIPANTS BY AGE (End of fiscal year 1978)

AGE	OFF	ENL	AGE	OFF	ENL
19	0.	42.	60	2676.	903.
20	0.	109.	61	2396.	742.
21	0.	222.	62	1961.	633.
22	0.	400.	63	1626.	560.
23	0.	549.	64	1508.	476.
24	5.	645.	65	1214.	400.
25	7.	720.	66	1108.	279.
26	10.	721.	67	1015.	276.
27	11.	718.	68	905.	221.
28	28.	716.	69	864.	183.
29	45.	766.	70	751.	155.
30	67.	765.	71	647.	142.
31	106.	814.	72	572.	126.
32	93.	578.	73	467.	105.
33	91.	564.	74	473.	119.
34	114.	507.	75	402.	118.
35	104.	579.	76	333.	106.
36	108.	530.	77	294.	97.
37	94.	457.	78	250.	98.
38	123.	499.	79	219.	74.
39	93.	569.	80	210.	62.
40	118.	637.	81	194.	35.
41	148.	741.	82	156.	55.
42	140.	776.	83	166.	34.
43	199.	873.	84	123.	18.
44	201.	924.	85	112.	23.
45	231.	1087.	86	94.	15.
46	297.	1219.	87	80.	6.
47	351.	1438.	88	29.	7.
48	390.	1722.	89	34.	5.
49	420.	1630.	90	28.	0.
50	403.	1503.	91	14.	0.
51	354.	1195.	92	16.	1.
52	356.	1101.	93	5.	2.
53	585.	1033.	94	10.	0.
54	906.	1140.	95	2.	0.
55	1183.	1050.	96	3.	0.
56	1638.	1149.	97	0.	0.
57	2301.	1053.	98	0.	0.
58	2529.	1094.	99	2.	0.
59	2473.	919.	100	0.	0.

TABLE B-5. NUMBERS OF CURRENT TITLE III RETIREES BY AGE (End of fiscal year 1978)

AGE	OFF	ENL	AGE	OFF	ENL
60	5896.	1296.	79	981.	71.
61	7974.	1840.	80	816.	66.
62	7084.	1803.	81	764.	65.
63	6330.	1550.	82	684.	47.
64	5374.	1273.	83	556.	41.
65	5080.	1140.	84	424.	22.
66	4828.	915.	85	341.	14.
67	4459.	821.	86	251.	19.
68	4140.	687.	87	186.	3.
69	3844.	613.	88	165.	7.
70	3406.	482.	89	91.	3.
71	3119.	355.	90	88.	4.
72	2610.	229.	91	44.	0.
73	2147.	243.	92	15.	0.
74	1872.	208.	93	20.	2.
75	1525.	130.	94	8.	0.
76	1225.	137.	95	5.	0.
77	1103.	102.	96	6.	0.
78	926.	95.	97	3.	0.

TABLE B-6. NON-DISABILITY RETIREE DEATH RATES

AGE	OFF	ENL	AGE	OFF	ENL
1	0.0	0.0	55	0.0075	0.0112
2	0.0	0.0	56	0.0082	0.0125
3	0.0	0.0	57	0.0090	0.0138
4	0.0	0.0	58	0.0098	0.0152
5	0.0	0.0	59	0.0108	0.0168
6	0.0	0.0	60	0.0119	0.0185
7	0.0	0.0	61	0.0130	0.0205
8	0.0	0.0	62	0.0144	0.0225
9	0.0	0.0	63	0.0158	0.0247
10	0.0	0.0	64	0.0173	0.0272
11	0.0	0.0	65	0.0190	0.0298
12	0.0	0.0	66	0.0209	0.0328
13	0.0	0.0	67	0.0229	0.0358
14	0.0	0.0	68	0.0251	0.0391
15	0.0	0.0	69	0.0275	0.0427
16	0.0	0.0	70	0.0300	0.0466
17	0.0	0.0	71	0.0330	0.0412
18	0.0	0.0	72	0.0360	0.0551
19	0.0	0.0	73	0.0394	0.0596
20	0.0	0.0	74	0.0431	0.0646
21	0.0	0.0	75	0.0471	0.0698
22	0.0	0.0	76	0.0515	0.0753
23	0.0	0.0	77	0.0562	0.0810
24	0.0	0.0	78	0.0614	0.0871
25	0.0	0.0	79	0.0672	0.0932
26	0.0	0.0	80	0.0735	0.0998
27	0.0	0.0	81	0.0801	0.1064
28	0.0	0.0	82	0.0870	0.1132
29	0.0	0.0	83	0.0941	0.1198
30	0.0	0.0	84	0.1014	0.1262
31	0.0	0.0	85	0.1091	0.1327
32	0.0	0.0	86	0.1172	0.1395
33	0.0	0.0	87	0.1259	0.1475
34	0.0	0.0	88	0.1350	0.1561
35	0.0015	0.0015	89	0.1448	0.1657
36	0.0017	0.0017	90	0.1551	0.1773
37	0.0018	0.0018	91	0.1661	0.1908
38	0.0020	0.0020	92	0.1777	0.2070
39	0.0021	0.0022	93	0.1902	0.2217
40	0.0023	0.0024	94	0.2032	0.2368
41	0.0025	0.0026	95	0.2170	0.2533
42	0.0026	0.0029	96	0.2320	0.2695
43	0.0028	0.0032	97	0.2482	0.2899
44	0.0031	0.0036	98	0.2679	0.3110
45	0.0033	0.0040	99	0.2901	0.3378
46	0.0036	0.0043	100	0.3180	0.3737
47	0.0039	0.0048	101	0.3469	0.3981
48	0.0043	0.0054	102	0.3852	0.4452
49	0.0045	0.0059	103	0.4289	0.5100
50	0.0049	0.0067	104	0.4636	0.5312
51	0.0053	0.0074	105	0.5440	0.8500
52	0.0058	0.0082	106	0.5667	0.9444
53	0.0062	0.0092	107	0.8500	0.9444
54	0.0068	0.0101	108	0.9444	0.9444

TABLE B-7. DISABILITY RETIREE DEATH RATES BY AGE

AGE	OFF	ENL	AGE	OFF	ENL
1	0.0	0.0	51	0.0156	0.0344
2	0.0	0.0	52	0.0168	0.0350
3	0.0	0.0	53	0.0180	0.0354
4	0.0	0.0	54	0.0192	0.0356
5	0.0	0.0	55	0.0205	0.0357
6	0.0	0.0	56	0.0218	0.0358
7	0.0	0.0	57	0.0233	0.0360
8	0.0	0.0	58	0.0248	0.0362
9	0.0	0.0	59	0.0265	0.0364
10	0.0	0.0	60	0.0283	0.0366
11	0.0	0.0	61	0.0301	0.0374
12	0.0	0.0	62	0.0320	0.0384
13	0.0	0.0	63	0.0339	0.0397
14	0.0	0.0	64	0.0360	0.0412
15	0.0	0.0	65	0.0375	0.0431
16	0.1995	0.0576	66	0.0397	0.0455
17	0.1795	0.0523	67	0.0419	0.0488
18	0.1607	0.0483	68	0.0440	0.0528
19	0.1432	0.0447	69	0.0461	0.0576
20	0.1271	0.0413	70	0.0484	0.0630
21	0.1123	0.0382	71	0.0509	0.0687
22	0.0986	0.0353	72	0.0538	0.0748
23	0.0861	0.0327	73	0.0571	0.0812
24	0.0748	0.0304	74	0.0605	0.0880
25	0.0646	0.0283	75	0.0644	0.0951
26	0.0554	0.0265	76	0.0689	0.1023
27	0.0470	0.0249	77	0.0741	0.1094
28	0.0397	0.0235	78	0.0800	0.1164
29	0.0330	0.0223	79	0.0866	0.1235
30	0.0278	0.0214	80	0.0939	0.1304
31	0.0231	0.0206	81	0.1019	0.1373
32	0.0191	0.0201	82	0.1110	0.1437
33	0.0158	0.0197	83	0.1208	0.1500
34	0.0133	0.0195	84	0.1315	0.1561
35	0.0115	0.0196	85	0.1433	0.1617
36	0.0102	0.0196	86	0.1560	0.1670
37	0.0091	0.0200	87	0.1697	0.1717
38	0.0084	0.0206	88	0.1850	0.1900
39	0.0081	0.0214	89	0.2078	0.2098
40	0.0082	0.0224	90	0.2302	0.2320
41	0.0084	0.0234	91	0.2542	0.2561
42	0.0087	0.0245	92	0.2796	0.2814
43	0.0090	0.0256	93	0.3084	0.3100
44	0.0094	0.0268	94	0.3370	0.3388
45	0.0099	0.0281	95	0.3702	0.3713
46	0.0105	0.0294	96	0.4078	0.4084
47	0.0112	0.0305	97	0.4483	0.4437
48	0.0121	0.0318	98	0.4808	0.4819
49	0.0132	0.0325	99	0.5290	0.5268
50	0.0143	0.0335	100	1.0000	1.0000

TABLE B-8. DEPENDENT DEATH RATES

AGE	OFF	ENL	AGE	OFF	ENL
1	0.0	0.0	56	0.0053	0.0074
2	0.0	0.0	57	0.0053	0.0082
3	0.0	0.0	58	0.0062	0.0092
4	0.0	0.0	59	0.0062	0.0101
5	0.0	0.0	60	0.0075	0.0112
6	0.0	0.0	61	0.0082	0.0125
7	0.0	0.0	62	0.0090	0.0133
8	0.0	0.0	63	0.0093	0.0152
9	0.0	0.0	64	0.0103	0.0163
10	0.0	0.0	65	0.0113	0.0165
11	0.0	0.0	66	0.0130	0.0205
12	0.0	0.0	67	0.0144	0.0225
13	0.0	0.0	68	0.0153	0.0247
14	0.0	0.0	69	0.0173	0.0272
15	0.0	0.0	70	0.0190	0.0293
16	0.0007	0.0007	71	0.0209	0.0323
17	0.0007	0.0007	72	0.0229	0.0353
18	0.0007	0.0007	73	0.0251	0.0391
19	0.0007	0.0007	74	0.0275	0.0427
20	0.0007	0.0007	75	0.0300	0.0466
21	0.0007	0.0007	76	0.0330	0.0506
22	0.0007	0.0007	77	0.0360	0.0551
23	0.0007	0.0007	78	0.0394	0.0596
24	0.0007	0.0007	79	0.0431	0.0646
25	0.0007	0.0007	80	0.0471	0.0693
26	0.0007	0.0007	81	0.0515	0.0753
27	0.0007	0.0007	82	0.0562	0.0810
28	0.0007	0.0007	83	0.0614	0.0871
29	0.0008	0.0008	84	0.0672	0.0932
30	0.0009	0.0009	85	0.0735	0.0993
31	0.0009	0.0009	86	0.0801	0.1064
32	0.0010	0.0010	87	0.0870	0.1132
33	0.0011	0.0011	88	0.0941	0.1193
34	0.0011	0.0011	89	0.1014	0.1262
35	0.0012	0.0012	90	0.1091	0.1327
36	0.0013	0.0013	91	0.1172	0.1395
37	0.0014	0.0014	92	0.1259	0.1475
38	0.0015	0.0015	93	0.1350	0.1561
39	0.0015	0.0015	94	0.1443	0.1657
40	0.0015	0.0015	95	0.1551	0.1773
41	0.0017	0.0017	96	0.1661	0.1903
42	0.0018	0.0018	97	0.1777	0.2070
43	0.0020	0.0020	98	0.1902	0.2217
44	0.0021	0.0022	99	0.2032	0.2363
45	0.0023	0.0024	100	0.2170	0.2533
46	0.0025	0.0026	101	0.2320	0.2695
47	0.0026	0.0029	102	0.2482	0.2899
48	0.0028	0.0032	103	0.2679	0.3110
49	0.0031	0.0036	104	0.2901	0.3373
50	0.0033	0.0040	105	0.3130	0.3737
51	0.0036	0.0043	106	0.3469	0.3991
52	0.0039	0.0048	107	0.3852	0.4452
53	0.0042	0.0054	108	0.4289	0.5100
54	0.0045	0.0059	109	0.4636	0.5312
55	0.0049	0.0067	110	1.0000	1.0000

TABLE B-9. ANNUAL FUTURE RETIREES a/

YEAR	OFF	ENL	YEAR	OFF	ENL
1980	9655.	35258.	2008	8973.	34172.
1981	9571.	34828.	2009	8973.	34172.
1982	9572.	32394.	2010	9257.	32975.
1983	9325.	29304.	2011	9257.	32975.
1984	9041.	27616.	2012	9257.	32975.
1985	8816.	26865.	2013	9257.	32975.
1986	9565.	27147.	2014	9257.	32975.
1987	9698.	27626.	2015	9257.	32975.
1988	9990.	30829.	2016	9257.	32975.
1989	10038.	30042.	2017	9257.	32975.
1990	10156.	29109.	2018	9257.	32975.
1991	10178.	32880.	2019	9257.	32975.
1992	10037.	34628.	2020	9244.	33381.
1993	9590.	34490.	2021	9244.	33381.
1994	9474.	35031.	2022	9244.	33381.
1995	9002.	35429.	2023	9244.	33381.
1996	8865.	35575.	2024	9244.	33381.
1997	8733.	33537.	2025	9244.	33381.
1998	8751.	34325.	2026	9244.	33381.
1999	9048.	34099.	2027	9244.	33381.
2000	8973.	34172.	2028	9244.	33381.
2001	8973.	34172.	2029	9244.	33381.
2002	8973.	34172.	2030	9115.	33393.
2003	8973.	34172.	2031	9115.	33393.
2004	8973.	34172.	2032	9115.	33393.
2005	8973.	34172.	2033	9115.	33393.
2006	8973.	34172.	2034	9115.	33393.
2007	8973.	34172.	2035	9115.	33393.

a/ In each year, 94 percent of officers and 86 percent of enlisted are nondisability retirees. The remainder are disability retirees. These percents are based on retirements in fiscal year 1978.

TABLE B-10. ANNUAL FUTURE NON-DISABILITY RETIREES BY AGE

AGE	OFF	ENL	AGE	OFF	ENL
19	0.	0.	40	482.	3869.
20	0.	0.	41	482.	3117.
21	0.	0.	42	748.	2486.
22	0.	0.	43	928.	2148.
23	0.	0.	44	902.	1664.
24	0.	0.	45	682.	1266.
25	0.	0.	46	606.	1176.
26	0.	0.	47	561.	970.
27	0.	0.	48	546.	895.
28	0.	0.	49	474.	602.
29	0.	0.	50	383.	372.
30	0.	0.	51	229.	216.
31	0.	0.	52	200.	152.
32	0.	0.	53	190.	122.
33	0.	0.	54	162.	94.
34	0.	3.	55	118.	71.
35	0.	125.	56	94.	47.
36	45.	600.	57	96.	20.
37	113.	1918.	58	69.	7.
38	343.	3545.	59	78.	17.
39	456.	4266.	60	0.	0.

TABLE B-11. ANNUAL NUMBERS OF FUTURE DISABILITY RETIREES BY AGE

AGE	OFF	ENL	AGE	OFF	ENL
19	0.	239.	40	33.	128.
20	0.	399.	41	28.	95.
21	0.	485.	42	22.	90.
22	0.	436.	43	26.	97.
23	2.	335.	44	33.	79.
24	9.	316.	45	27.	62.
25	20.	238.	46	20.	45.
26	10.	204.	47	14.	39.
27	14.	157.	48	20.	45.
28	18.	147.	49	17.	21.
29	16.	130.	50	19.	21.
30	15.	135.	51	7.	11.
31	17.	111.	52	9.	10.
32	16.	100.	53	9.	10.
33	20.	81.	54	6.	8.
34	10.	75.	55	5.	2.
35	19.	68.	56	3.	2.
36	17.	65.	57	3.	2.
37	19.	104.	58	2.	2.
38	22.	131.	59	6.	3.
39	21.	103.	60	0.	0.

TABLE B-12. FRACTIONS OF FUTURE RETIREES PARTICIPATING IN THE SBP

	Officer	Enlisted
Nondisability	0.61	0.47
Disability	0.57	0.42
Reserve	0.90	0.86

TABLE B-13. AVERAGE ANNUAL RETIRED ANNUITY FOR CURRENT NON-DISABILITY SBP PARTICIPANTS (Fiscal year 1979 dollars)

AGE	OFF	ENL	AGE	OFF	ENL
19	0.	0.	60	15945.	6636.
20	0.	0.	61	15571.	6446.
21	0.	0.	62	15398.	6379.
22	0.	0.	63	15292.	6345.
23	0.	0.	64	15236.	6294.
24	0.	0.	65	15109.	6110.
25	0.	0.	66	15055.	5982.
26	0.	0.	67	15147.	5869.
27	0.	0.	68	14915.	5842.
28	0.	0.	69	14883.	5781.
29	0.	0.	70	14833.	5663.
30	0.	0.	71	14778.	5659.
31	0.	0.	72	14573.	5614.
32	0.	0.	73	15029.	5660.
33	0.	0.	74	14581.	5718.
34	0.	7426.	75	14739.	5715.
35	0.	6061.	76	14514.	5859.
36	10247.	6091.	77	14553.	5690.
37	9913.	6128.	78	14833.	5764.
38	10387.	6231.	79	15138.	5814.
39	10612.	6353.	80	15752.	5907.
40	11120.	6546.	81	16687.	5982.
41	11650.	6756.	82	17062.	5864.
42	12452.	6907.	83	17117.	5970.
43	13092.	7003.	84	17629.	5949.
44	13820.	7095.	85	17476.	5927.
45	14394.	7222.	86	16435.	5958.
46	14904.	7297.	87	17148.	5823.
47	15403.	7283.	88	16278.	5758.
48	15728.	7235.	89	15723.	5759.
49	16120.	7230.	90	16295.	5390.
50	16616.	7123.	91	16537.	6184.
51	17195.	7002.	92	15201.	6445.
52	17701.	6837.	93	13978.	6228.
53	18068.	6686.	94	19034.	6548.
54	18009.	6710.	95	18259.	4916.
55	17727.	6682.	96	12018.	6012.
56	17129.	6672.	97	16804.	6754.
57	16834.	6645.	98	21324.	8204.
58	16390.	6586.	99	16884.	6219.
59	16010.	6512.	100	0.	0.

TABLE B-14. AVERAGE ANNUAL CURRENT DISABILITY RETIRED ANNUITY BY AGE (Fiscal year 1979 dollars)

AGE	OFF	ENL	AGE	OFF	ENL
19	0.	3000.	60	12168.	7581.
20	0.	3203.	61	12192.	7649.
21	0.	3250.	62	11784.	7496.
22	0.	3389.	63	12144.	7382.
23	6769.	3465.	64	11689.	7296.
24	5767.	3517.	65	11785.	6881.
25	7255.	3552.	66	11938.	6824.
26	7482.	3565.	67	11956.	6464.
27	8235.	3468.	68	11725.	6168.
28	7669.	3389.	69	11742.	5926.
29	8462.	3356.	70	11690.	5793.
30	8863.	3324.	71	11727.	5716.
31	8544.	3313.	72	11857.	5481.
32	8794.	3336.	73	11759.	5611.
33	8753.	3449.	74	11811.	5706.
34	8728.	3535.	75	11834.	5291.
35	9303.	3639.	76	12245.	5415.
36	9160.	3787.	77	11490.	5322.
37	9769.	4006.	78	11822.	5403.
38	10084.	4432.	79	11682.	5186.
39	10302.	4578.	80	12314.	5037.
40	10456.	4917.	81	13907.	5054.
41	11930.	5155.	82	14012.	4854.
42	11384.	5273.	83	14247.	5216.
43	12084.	5446.	84	15087.	4719.
44	12646.	5592.	85	15229.	5809.
45	12942.	5681.	86	15906.	5111.
46	13371.	5563.	87	15247.	6488.
47	13623.	5692.	88	15801.	5842.
48	13602.	5874.	89	14733.	5244.
49	13313.	5648.	90	16712.	6432.
50	14408.	6074.	91	15370.	3953.
51	15147.	6310.	92	17107.	7707.
52	14572.	6329.	93	16359.	5456.
53	14630.	6544.	94	17155.	7432.
54	13370.	6769.	95	17316.	0.
55	12735.	6999.	96	11200.	0.
56	12234.	7232.	97	17368.	0.
57	12169.	7465.	98	12943.	0.
58	12031.	7557.	99	19271.	0.
59	12042.	7675.	100	0.	0.

TABLE B-15. AVERAGE ANNUAL TITLE III ANNUITY BY AGE (Fiscal year 1979 dollars)

AGE	OFF	ENL	AGE	OFF	ENL
60	6860.	3686.	79	6612.	2580.
61	7062.	3803.	80	6568.	2909.
62	7451.	3966.	81	7045.	2858.
63	7732.	4037.	82	6846.	2855.
64	7780.	3992.	83	6539.	3003.
65	7494.	3710.	84	6532.	2474.
66	7259.	3604.	85	6491.	2695.
67	7104.	3477.	86	6148.	2192.
68	6717.	3269.	87	5935.	2366.
69	6526.	3216.	88	6152.	2645.
70	6342.	3142.	89	5916.	1347.
71	6547.	3046.	90	5007.	2014.
72	6458.	2944.	91	5500.	0.
73	6377.	2957.	92	5778.	0.
74	6347.	2731.	93	4352.	5290.
75	5938.	2566.	94	4226.	0.
76	6301.	2662.	95	4417.	0.
77	6289.	2587.	96	4179.	0.
78	6428.	2454.	97	2338.	0.

TABLE B-16. ANNUAL RETIRED ANNUITY BY AGE FOR FUTURE NON-DISABILITY RETIREES (Fiscal year 1979 dollars) a/

AGE	OFF	ENL	AGE	OFF	ENL
19	0.	0.	40	11456.	6532.
20	0.	0.	41	12265.	6847.
21	0.	0.	42	13003.	7024.
22	0.	0.	43	13390.	7344.
23	0.	0.	44	14226.	8034.
24	0.	0.	45	15599.	8865.
25	0.	0.	46	16940.	9664.
26	0.	0.	47	18332.	10334.
27	0.	0.	48	19310.	10971.
28	0.	0.	49	20664.	11165.
29	0.	0.	50	21365.	10503.
30	0.	0.	51	22950.	10514.
31	0.	0.	52	24253.	10606.
32	0.	0.	53	25102.	11076.
33	0.	0.	54	25326.	10982.
34	0.	6252.	55	26073.	10390.
35	0.	5957.	56	26155.	10603.
36	10098.	6018.	57	26953.	9741.
37	9860.	6058.	58	27949.	10760.
38	10373.	6145.	59	28217.	9582.
39	10660.	6252.	60	0.	0.

a/ Reserve retirement pay equals \$6,928 for officers and \$3,725 for enlisted.

TABLE B-17. AVERAGE ANNUAL FUTURE DISABILITY RETIRED ANNUITY BY AGE (Fiscal year 1979 dollars)

AGE	OFF	ENL	AGE	OFF	ENL
19	0.	3048.	40	13530.	6787.
20	0.	3149.	41	13779.	7127.
21	0.	3240.	42	13972.	7350.
22	0.	3396.	43	15409.	7489.
23	6787.	3532.	44	17171.	8386.
24	6144.	3585.	45	17196.	9099.
25	7089.	3689.	46	16253.	9124.
26	9372.	3856.	47	16119.	9912.
27	7645.	3902.	48	19673.	10317.
28	8802.	4015.	49	18218.	9145.
29	9423.	4204.	50	20795.	10865.
30	9758.	4284.	51	22180.	10389.
31	9781.	4697.	52	23541.	11245.
32	9549.	4660.	53	23087.	9893.
33	10005.	5081.	54	23413.	11554.
34	12242.	5303.	55	23466.	13267.
35	10715.	5382.	56	26296.	9241.
36	11401.	5814.	57	27341.	9241.
37	11742.	6260.	58	33577.	9241.
38	12924.	6498.	59	29198.	9241.
39	13078.	6735.	60	0.	0.



TABLE B-18. FRACTIONS OF RETIREMENT PAY COVERED UNDER THE SBP

	Officer	Enlisted
Current Retirees		
Nondisability	0.745	0.805
Disability	0.745	0.805
Reserve	0.900	0.900
Future Retirees		
Nondisability	0.666	0.691
Disability	0.848	0.900
Reserve	0.900	0.900

TABLE B-19. SOCIAL SECURITY OFFSETS (In constant 1979 dollars)

Years of Service	Year of Retirement								
	1960	1965	1970	1975	1980	1985	1990	1995	2000
Enlisted									
10	85	140	153	164	164	157	161	168	175
11	87	164	177	189	193	184	187	195	203
12	90	181	191	202	210	210	213	221	231
13	95	182	198	211	218	222	229	239	250
14	99	182	205	219	226	230	237	247	259
15	101	182	212	226	235	239	245	256	267
16	105	181	220	234	243	248	253	264	276
17	108	181	227	241	251	257	262	272	284
18	112	183	228	249	260	266	272	281	293
19	117	184	229	258	270	275	282	290	303
20	120	185	230	266	278	285	292	300	312
21	123	187	230	274	287	294	302	309	322
22	128	189	230	281	295	303	311	319	331
23	134	189	233	282	304	313	321	329	340
24	138	191	236	283	313	322	330	339	350
25	96*	192	238	285	322	333	341	350	361
26	100*	194	241	286	331	343	352	362	372
27	105*	198	245	286	341	353	363	374	384
28	111*	203	246	290	346	365	376	387	398
29	117*	204	250	293	351	377	389	400	412
30	124*	179*	252	297	353	388	402	413	426

* Offset calculated based on pre-1976 social security law.

TABLE B-19. (Continued)

Years of Service	Year of Retirement								
	1960	1965	1970	1975	1980	1985	1990	1995	2000
Officer									
10	105	191	213	237	270	273	281	294	308
11	107	190	221	247	279	289	296	310	324
12	109	188	228	255	289	306	312	325	340
13	112	186	236	260	298	324	329	342	358
14	114	187	244	267	308	340	345	358	374
15	117	187	243	273	317	355	363	375	392
16	120	188	241	280	327	366	380	391	409
17	123	189	239	287	334	379	400	410	428
18	128	190	237	295	339	390	420	429	447
19	134	189	238	302	345	402	438	448	466
20	138	191	240	300	351	412	454	467	484
21	96*	192	242	298	357	423	467	486	502
22	100*	194	244	295	363	430	479	505	520
23	105*	198	246	292	370	433	489	523	538
24	111*	203	247	295	377	438	500	540	556
25	117*	204	250	298	374	443	509	556	573
26	124*	179*	252	301	371	448	519	562	587
27	131*	183*	256	304	368	454	525	564	592
28	140*	187*	262	308	364	460	524	565	598
29	150*	192*	270	310	368	466	523	567	602
30	157*	197*	273	315	373	462	522	568	606

* Offset calculated based on pre-1976 social security law.

TABLE B-20. OFFSETS--CURRENT BENEFICIARIES--62 AND OVER (Fiscal year 1979 dollars)

YEAR		YEAR	
1980	23.	2008	110.
1981	27.	2009	111.
1982	31.	2010	113.
1983	37.	2011	115.
1984	43.	2012	117.
1985	50.	2013	120.
1986	54.	2014	122.
1987	61.	2015	126.
1988	67.	2016	129.
1989	72.	2017	133.
1990	76.	2018	137.
1991	80.	2019	140.
1992	83.	2020	145.
1993	86.	2021	150.
1994	89.	2022	156.
1995	91.	2023	162.
1996	94.	2024	170.
1997	96.	2025	179.
1998	98.	2026	188.
1999	99.	2027	197.
2000	101.	2028	206.
2001	102.	2029	215.
2002	103.	2030	223.
2003	104.	2031	232.
2004	105.	2032	239.
2005	106.	2033	247.
2006	107.	2034	254.
2007	109.	2035	261.



TABLE B-21. OFFSETS--CURRENT BENEFICIARIES--WIDOW(ER)S WITH ONE CHILD (Fiscal year 1979 dollars)

YEAR		YEAR	
1980	211.	2008	207.
1981	217.	2009	207.
1982	223.	2010	207.
1983	229.	2011	207.
1984	235.	2012	207.
1985	242.	2013	207.
1986	246.	2014	207.
1987	252.	2015	207.
1988	257.	2016	207.
1989	260.	2017	207.
1990	266.	2018	207.
1991	269.	2019	207.
1992	272.	2020	0.
1993	275.	2021	0.
1994	277.	2022	0.
1995	280.	2023	0.
1996	281.	2024	0.
1997	283.	2025	0.
1998	282.	2026	0.
1999	283.	2027	0.
2000	275.	2028	0.
2001	268.	2029	0.
2002	256.	2030	0.
2003	246.	2031	0.
2004	238.	2032	0.
2005	223.	2033	0.
2006	207.	2034	0.
2007	207.	2035	0.



TABLE B-22. OFFSETS--CURRENT NON-DISABILITY RETIREE SURVIVORS--
62 AND OVER (Fiscal year 1979 dollars)

YEAR	OFF	ENL	YEAR	OFF	ENL
1980	75.	12.	2008	324.	282.
1981	85.	16.	2009	329.	286.
1982	98.	22.	2010	334.	290.
1983	111.	32.	2011	339.	296.
1984	125.	46.	2012	344.	296.
1985	138.	60.	2013	349.	299.
1986	153.	69.	2014	354.	302.
1987	166.	83.	2015	358.	305.
1988	178.	97.	2016	363.	307.
1989	189.	109.	2017	368.	309.
1990	199.	121.	2018	372.	312.
1991	208.	133.	2019	376.	314.
1992	216.	145.	2020	380.	316.
1993	224.	155.	2021	383.	317.
1994	231.	167.	2022	387.	319.
1995	239.	178.	2023	390.	321.
1996	247.	190.	2024	393.	322.
1997	254.	200.	2025	396.	323.
1998	262.	211.	2026	398.	325.
1999	269.	220.	2027	401.	326.
2000	277.	229.	2028	403.	327.
2001	283.	238.	2029	405.	328.
2002	290.	246.	2030	406.	329.
2003	296.	254.	2031	408.	330.
2004	302.	261.	2032	409.	331.
2005	307.	267.	2033	411.	332.
2006	313.	273.	2034	412.	332.
2007	318.	278.	2035	413.	333.

TABLE B-23. OFFSETS--CURRENT NON-DISABILITY RETIREE SURVIVORS--
WIDOW(ER)S WITH ONE CHILD (Fiscal year 1979 dollars)

YEAR	OFF	ENL	YEAR	OFF	ENL
1980	254.	197.	2008	0.	264.
1981	259.	202.	2009	0.	264.
1982	264.	208.	2010	0.	0.
1983	270.	212.	2011	0.	0.
1984	276.	217.	2012	0.	0.
1985	283.	221.	2013	0.	0.
1986	290.	230.	2014	0.	0.
1987	297.	236.	2015	0.	0.
1988	304.	240.	2016	0.	0.
1989	309.	244.	2017	0.	0.
1990	314.	248.	2018	0.	0.
1991	318.	251.	2019	0.	0.
1992	321.	254.	2020	0.	0.
1993	323.	257.	2021	0.	0.
1994	325.	260.	2022	0.	0.
1995	329.	263.	2023	0.	0.
1996	332.	267.	2024	0.	0.
1997	336.	269.	2025	0.	0.
1998	339.	271.	2026	0.	0.
1999	342.	272.	2027	0.	0.
2000	344.	274.	2028	0.	0.
2001	344.	274.	2029	0.	0.
2002	343.	275.	2030	0.	0.
2003	343.	275.	2031	0.	0.
2004	343.	274.	2032	0.	0.
2005	342.	273.	2033	0.	0.
2006	341.	270.	2034	0.	0.
2007	342.	265.	2035	0.	0.

TABLE B-24. OFFSETS--FUTURE NON-DISABILITY RETIREE SURVIVORS--
62 AND OVER (Fiscal year 1979 dollars)

YEAR	OFF	ENL	YEAR	OFF	ENL
1980	408.	386.	2008	524.	397.
1981	408.	386.	2009	528.	398.
1982	408.	386.	2010	533.	397.
1983	408.	386.	2011	537.	397.
1984	408.	386.	2012	542.	398.
1985	408.	386.	2013	546.	398.
1986	408.	386.	2014	551.	398.
1987	422.	405.	2015	555.	399.
1988	423.	417.	2016	559.	399.
1989	446.	421.	2017	563.	400.
1990	456.	423.	2018	567.	400.
1991	463.	427.	2019	571.	401.
1992	468.	431.	2020	575.	401.
1993	473.	435.	2021	580.	402.
1994	478.	437.	2022	584.	403.
1995	481.	436.	2023	588.	404.
1996	483.	433.	2024	593.	406.
1997	485.	428.	2025	598.	407.
1998	488.	426.	2026	603.	409.
1999	491.	425.	2027	608.	410.
2000	495.	425.	2028	613.	412.
2001	498.	424.	2029	618.	414.
2002	500.	422.	2030	624.	416.
2003	503.	418.	2031	630.	419.
2004	507.	414.	2032	635.	421.
2005	511.	409.	2033	641.	424.
2006	515.	403.	2034	648.	427.
2007	519.	399.	2035	654.	430.

TABLE B-25. OFFSETS--FUTURE NON-DISABILITY RETIREE SURVIVORS--
WIDOW(ER)S WITH ONE CHILD (Fiscal year 1979 dollars)

YEAR	OFF	ENL	YEAR	OFF	ENL
1980	365.	320.	2008	507.	338.
1981	372.	321.	2009	512.	341.
1982	378.	322.	2010	518.	343.
1983	385.	323.	2011	523.	345.
1984	391.	324.	2012	528.	347.
1985	397.	324.	2013	533.	350.
1986	403.	324.	2014	538.	352.
1987	408.	324.	2015	543.	355.
1988	414.	325.	2016	549.	358.
1989	420.	325.	2017	554.	360.
1990	425.	325.	2018	560.	364.
1991	431.	325.	2019	565.	367.
1992	436.	326.	2020	571.	370.
1993	440.	327.	2021	576.	374.
1994	444.	327.	2022	582.	378.
1995	448.	328.	2023	588.	381.
1996	453.	329.	2024	594.	385.
1997	456.	330.	2025	600.	389.
1998	460.	330.	2026	606.	393.
1999	463.	330.	2027	612.	397.
2000	467.	330.	2028	618.	401.
2001	471.	331.	2029	624.	405.
2002	475.	331.	2030	630.	409.
2003	480.	331.	2031	636.	413.
2004	485.	332.	2032	642.	417.
2005	490.	333.	2033	648.	422.
2006	495.	334.	2034	655.	426.
2007	501.	336.	2035	661.	430.

TABLE B-26. OFFSETS--CURRENT DISABILITY RETIREE SURVIVORS--62 AND OVER (Fiscal year 1979 dollars)

YEAR	OFF	ENL	YEAR	OFF	ENL
1980	32.	11.	2008	184.	199.
1981	38.	17.	2009	190.	202.
1982	44.	24.	2010	196.	205.
1983	52.	32.	2011	203.	207.
1984	60.	43.	2012	211.	208.
1985	67.	52.	2013	219.	207.
1986	75.	62.	2014	227.	206.
1987	82.	71.	2015	236.	204.
1988	88.	80.	2016	245.	200.
1989	94.	89.	2017	253.	196.
1990	99.	98.	2018	261.	190.
1991	104.	105.	2019	267.	183.
1992	108.	112.	2020	272.	176.
1993	113.	119.	2021	275.	169.
1994	117.	125.	2022	275.	161.
1995	121.	132.	2023	274.	154.
1996	126.	138.	2024	270.	148.
1997	130.	144.	2025	265.	142.
1998	135.	151.	2026	258.	135.
1999	139.	157.	2027	251.	129.
2000	143.	162.	2028	242.	124.
2001	148.	168.	2029	233.	118.
2002	153.	173.	2030	224.	112.
2003	157.	178.	2031	215.	107.
2004	162.	183.	2032	206.	102.
2005	167.	188.	2033	197.	97.
2006	172.	192.	2034	189.	93.
2007	178.	195.	2035	181.	89.

TABLE B-27. OFFSETS--CURRENT DISABILITY RETIREE SURVIVORS--WIDOW(ER)S
WITH ONE CHILD (Fiscal year 1979 dollars)

YEAR	OFF	ENL	YEAR	OFF	ENL
1980	154.	144.	2008	130.	56.
1981	160.	143.	2009	122.	53.
1982	163.	152.	2010	118.	51.
1983	169.	155.	2011	115.	50.
1984	177.	159.	2012	113.	51.
1985	189.	163.	2013	102.	50.
1986	200.	165.	2014	93.	48.
1987	217.	167.	2015	88.	45.
1988	229.	169.	2016	72.	40.
1989	236.	168.	2017	70.	37.
1990	236.	165.	2018	65.	34.
1991	237.	162.	2019	56.	32.
1992	229.	158.	2020	0.	30.
1993	227.	151.	2021	0.	29.
1994	218.	145.	2022	0.	26.
1995	217.	136.	2023	0.	21.
1996	209.	130.	2024	0.	19.
1997	201.	123.	2025	0.	0.
1998	198.	116.	2026	0.	0.
1999	193.	106.	2027	0.	0.
2000	192.	99.	2028	0.	0.
2001	187.	89.	2029	0.	0.
2002	179.	83.	2030	0.	0.
2003	168.	80.	2031	0.	0.
2004	159.	75.	2032	0.	0.
2005	153.	68.	2033	0.	0.
2006	144.	64.	2034	0.	0.
2007	136.	60.	2035	0.	0.



TABLE B-28. OFFSETS--FUTURE DISABILITY RETIREE SURVIVORS--62 AND OVER (Fiscal year 1979 dollars)

YEAR	OFF	ENL	YEAR	OFF	ENL
1980	408.	386.	2008	532.	422.
1981	408.	386.	2009	535.	420.
1982	408.	386.	2010	538.	417.
1983	408.	386.	2011	540.	415.
1984	408.	386.	2012	543.	412.
1985	408.	386.	2013	545.	410.
1986	408.	386.	2014	547.	407.
1987	426.	396.	2015	548.	404.
1988	443.	410.	2016	549.	400.
1989	452.	424.	2017	549.	396.
1990	451.	437.	2018	550.	392.
1991	468.	442.	2019	550.	387.
1992	474.	445.	2020	549.	381.
1993	479.	450.	2021	549.	375.
1994	485.	455.	2022	549.	367.
1995	488.	456.	2023	549.	358.
1996	491.	457.	2024	550.	348.
1997	494.	454.	2025	551.	338.
1998	499.	452.	2026	551.	329.
1999	504.	451.	2027	552.	320.
2000	508.	449.	2028	554.	312.
2001	511.	446.	2029	555.	307.
2002	514.	442.	2030	557.	301.
2003	517.	439.	2031	558.	296.
2004	520.	435.	2032	560.	291.
2005	523.	431.	2033	562.	286.
2006	526.	428.	2034	565.	282.
2007	529.	424.	2035	567.	279.



TABLE B-29. OFFSETS--FUTURE DISABILITY RETIREE SURVIVORS--WIDOW(ER)S
WITH ONE CHILD (Fiscal year 1979 dollars)

YEAR	OFF	ENL	YEAR	OFF	ENL
1980	224.	104.	2008	374.	152.
1981	235.	106.	2009	376.	152.
1982	245.	108.	2010	378.	152.
1983	257.	110.	2011	381.	152.
1984	270.	113.	2012	383.	151.
1985	282.	116.	2013	386.	151.
1986	291.	120.	2014	388.	151.
1987	300.	123.	2015	391.	151.
1988	308.	126.	2016	395.	152.
1989	316.	129.	2017	398.	153.
1990	323.	132.	2018	402.	154.
1991	329.	135.	2019	406.	155.
1992	336.	137.	2020	410.	155.
1993	341.	139.	2021	414.	156.
1994	346.	141.	2022	418.	157.
1995	351.	143.	2023	422.	158.
1996	355.	144.	2024	427.	160.
1997	358.	145.	2025	431.	161.
1998	361.	147.	2026	435.	162.
1999	362.	148.	2027	440.	164.
2000	363.	149.	2028	444.	165.
2001	363.	150.	2029	449.	167.
2002	364.	151.	2030	453.	169.
2003	365.	151.	2031	458.	170.
2004	366.	152.	2032	463.	172.
2005	367.	152.	2033	467.	174.
2006	369.	152.	2034	472.	175.
2007	372.	152.	2035	476.	177.

TABLE B-30. OFFSETS--CURRENT TILE III RETIREE SURVIVORS--62.AND OVER (Fiscal year 1979 dollars)

YEAR	OFF	ENL	YEAR	OFF	ENL
1980	109.	27.	2004	169.	48.
1981	111.	28.	2005	170.	49.
1982	114.	29.	2006	171.	50.
1983	117.	30.	2007	172.	51.
1984	120.	30.	2008	173.	52.
1985	124.	31.	2009	174.	53.
1986	127.	32.	2010	175.	54.
1987	130.	33.	2011	176.	55.
1988	133.	34.	2012	176.	56.
1989	136.	35.	2013	177.	57.
1990	139.	36.	2014	178.	58.
1991	142.	37.	2015	179.	59.
1992	145.	38.	2016	179.	60.
1993	148.	39.	2017	178.	61.
1994	150.	40.	2018	179.	62.
1995	153.	41.	2019	179.	63.
1996	155.	42.	2020	180.	65.
1997	157.	43.	2021	181.	66.
1998	159.	44.	2022	181.	68.
1999	161.	45.	2023	182.	68.
2000	163.	46.	2024	183.	69.
2001	165.	46.	2025	183.	69.
2002	166.	47.	2026	185.	69.
2003	167.	48.	2027	0.	0.

TABLE B-31. OFFSETS--FUTURE TITLE III RETIREE SURVIVORS--62 AND OVER (Fiscal year 1979 dollars)

YEAR	OFF	EML	YEAR	OFF	EML
1980	189.	72.	2008	241.	117.
1981	190.	75.	2009	244.	119.
1982	192.	76.	2010	247.	121.
1983	189.	77.	2011	251.	124.
1984	188.	79.	2012	254.	126.
1985	188.	79.	2013	258.	128.
1986	189.	80.	2014	261.	131.
1987	190.	81.	2015	265.	133.
1988	192.	82.	2016	269.	135.
1989	194.	83.	2017	273.	138.
1990	197.	84.	2018	277.	140.
1991	199.	85.	2019	281.	142.
1992	201.	87.	2020	285.	144.
1993	204.	88.	2021	289.	146.
1994	206.	90.	2022	293.	148.
1995	209.	91.	2023	297.	150.
1996	211.	93.	2024	301.	152.
1997	214.	95.	2025	304.	154.
1998	216.	96.	2026	308.	156.
1999	218.	98.	2027	311.	158.
2000	221.	100.	2028	315.	160.
2001	223.	102.	2029	318.	161.
2002	225.	104.	2030	322.	163.
2003	226.	106.	2031	325.	165.
2004	230.	109.	2032	329.	167.
2005	233.	110.	2033	332.	168.
2006	235.	112.	2034	335.	170.
2007	238.	115.	2035	339.	172.

TABLE B-32. OFFSETS--CURRENT BENEFICIARIES 62 AND OVER--40 PERCENT
LIMIT (Fiscal year 1979 dollars)

YEAR		YEAR	
1980	23.	2008	57.
1981	27.	2009	57.
1982	30.	2010	57.
1983	36.	2011	58.
1984	39.	2012	58.
1985	43.	2013	59.
1986	45.	2014	59.
1987	48.	2015	61.
1988	50.	2016	62.
1989	53.	2017	64.
1990	55.	2018	65.
1991	57.	2019	66.
1992	57.	2020	67.
1993	58.	2021	70.
1994	59.	2022	72.
1995	59.	2023	74.
1996	59.	2024	77.
1997	59.	2025	81.
1998	59.	2026	84.
1999	59.	2027	88.
2000	59.	2028	89.
2001	58.	2029	94.
2002	57.	2030	97.
2003	57.	2031	99.
2004	56.	2032	101.
2005	56.	2033	103.
2006	56.	2034	0.
2007	56.	2035	107.

TABLE B-33. OFFSETS--CURRENT BENEFICIARIES--WIDOW(ER)S WITH ONE CHILD--40 PERCENT LIMIT (Fiscal year 1979 dollars)

YEAR		YEAR	
1980	121.	2008	78.
1981	124.	2009	78.
1982	125.	2010	78.
1983	127.	2011	78.
1984	128.	2012	78.
1985	130.	2013	78.
1986	130..	2014	78.
1987	132.	2015	78.
1988	133.	2016	78.
1989	133.	2017	78.
1990	134.	2018	78.
1991	135.	2019	78.
1992	135.	2020	0.
1993	135.	2021	0.
1994	133.	2022	0.
1995	132.	2023	0.
1996	128.	2024	0.
1997	128.	2025	0.
1998	123.	2026	0.
1999	119.	2027	0.
2000	111.	2028	0.
2001	106.	2029	0.
2002	99.	2030	0.
2003	92.	2031	0.
2004	87.	2032	0.
2005	80.	2033	0.
2006	75.	2034	0.
2007	77.	2035	0.

TABLE B-34. OFFSETS--CURRENT NON-DISABILITY RETIREE SURVIVORS--
62 AND OVER--40 PERCENT LIMIT (Fiscal year 1979-
dollars)

YEAR	OFF	ENL	YEAR	OFF	ENL
1980	75.	12.	2008	291.	145.
1981	85.	16.	2009	294.	146.
1982	97.	21.	2010	297.	146.
1983	110.	31.	2011	300.	147.
1984	123.	42.	2012	302.	147.
1985	136.	51.	2013	304.	147.
1986	150.	57.	2014	306.	147.
1987	163.	65.	2015	307.	148.
1988	174.	73.	2016	308.	148.
1989	185.	80.	2017	309.	148.
1990	194.	87.	2018	310.	148.
1991	203.	94.	2019	310.	147.
1992	211.	100.	2020	310.	147.
1993	218.	105.	2021	310.	147.
1994	225.	110.	2022	309.	147.
1995	232.	115.	2023	308.	147.
1996	238.	119.	2024	307.	146.
1997	244.	123.	2025	306.	146.
1998	250.	127.	2026	304.	145.
1999	255.	131.	2027	302.	145.
2000	260.	133.	2028	299.	144.
2001	264.	136.	2029	297.	143.
2002	269.	137.	2030	294.	142.
2003	273.	139.	2031	291.	141.
2004	277.	140.	2032	288.	140.
2005	281.	141.	2033	284.	139.
2006	284.	143.	2034	281.	138.
2007	288.	144.	2035	277.	137.

TABLE B-35. OFFSETS--CURRENT NON-DISABILITY RETIREE SURVIVORS--
WIDOW(ER)S WITH ONE CHILD--40 PERCENT LIMIT (Fiscal
year 1979 dollars)

YEAR	OFF	ENL	YEAR	OFF	ENL
1980	237.	113.	2008	0.	99.
1981	241.	115.	2009	0.	99.
1982	244.	117.	2010	0.	0.
1983	248.	118.	2011	0.	0.
1984	252.	118.	2012	0.	0.
1985	256.	119.	2013	0.	0.
1986	261.	122.	2014	0.	0.
1987	265.	124.	2015	0.	0.
1988	267.	124.	2016	0.	0.
1989	269.	125.	2017	0.	0.
1990	270.	125.	2018	0.	0.
1991	269.	126.	2019	0.	0.
1992	267.	126.	2020	0.	0.
1993	263.	126.	2021	0.	0.
1994	256.	125.	2022	0.	0.
1995	247.	124.	2023	0.	0.
1996	236.	122.	2024	0.	0.
1997	227.	120.	2025	0.	0.
1998	220.	118.	2026	0.	0.
1999	214.	114.	2027	0.	0.
2000	209.	111.	2028	0.	0.
2001	207.	108.	2029	0.	0.
2002	206.	106.	2030	0.	0.
2003	203.	103.	2031	0.	0.
2004	201.	100.	2032	0.	0.
2005	199.	98.	2033	0.	0.
2006	197.	98.	2034	0.	0.
2007	201.	98.	2035	0.	0.

TABLE B-36. OFFSETS--CURRENT DISABILITY RETIREE SURVIVORS--62 AND OVER--40 PERCENT LIMIT (Fiscal year 1979 dollars)

YEAR	OFF	ENL	YEAR	OFF	ENL
1980	32.	11.	2008	175.	106.
1981	38.	15.	2009	180.	106.
1982	44.	22.	2010	185.	106.
1983	52.	29.	2011	191.	106.
1984	60.	36.	2012	196.	105.
1985	67.	44.	2013	202.	103.
1986	75.	52.	2014	208.	101.
1987	82.	57.	2015	213.	99.
1988	88.	63.	2016	219.	97.
1989	94.	69.	2017	224.	95.
1990	99.	74.	2018	228.	92.
1991	104.	78.	2019	230.	89.
1992	108.	81.	2020	231.	85.
1993	112.	85.	2021	230.	82.
1994	117.	88.	2022	227.	79.
1995	121.	90.	2023	223.	77.
1996	125.	92.	2024	217.	75.
1997	129.	95.	2025	211.	72.
1998	133.	97.	2026	204.	70.
1999	137.	98.	2027	196.	68.
2000	140.	100.	2028	189.	67.
2001	144.	101.	2029	181.	65.
2002	148.	103.	2030	174.	63.
2003	153.	104.	2031	167.	61.
2004	157.	104.	2032	161.	60.
2005	161.	105.	2033	154.	59.
2006	166.	106.	2034	149.	57.
2007	170.	106.	2035	144.	56.

TABLE B-37. OFFSETS--CURRENT DISABILITY RETIREE SURVIVORS--WIDOW
WIDOW(ER)S WITH ONE CHILD--40 PERCENT LIMIT (Fiscal
year 1979 dollars)

YEAR	OFF	ENL	YEAR	OFF	ENL
1980	145.	80.	2008	106.	41.
1981	149.	81.	2009	101.	40.
1982	152.	81.	2010	100.	39.
1983	156.	81.	2011	99.	39.
1984	162.	81.	2012	98.	40.
1985	172.	81.	2013	90.	40.
1986	181.	79.	2014	85.	40.
1987	193.	79.	2015	78.	39.
1988	202.	79.	2016	67.	36.
1989	207.	78.	2017	71.	34.
1990	202.	76.	2018	61.	32.
1991	200.	74.	2019	62.	30.
1992	191.	72.	2020	0.	29.
1993	187.	69.	2021	0.	29.
1994	176.	67.	2022	0.	26.
1995	172.	64.	2023	0.	21.
1996	164.	62.	2024	0.	19.
1997	156.	60.	2025	0.	0.
1998	152.	59.	2026	0.	0.
1999	149.	55.	2027	0.	0.
2000	146.	53.	2028	0.	0.
2001	143.	50.	2029	0.	0.
2002	138.	48.	2030	0.	0.
2003	129.	48.	2031	0.	0.
2004	124.	48.	2032	0.	0.
2005	120.	46.	2033	0.	0.
2006	114.	45.	2034	0.	0.
2007	109.	43.	2035	0.	0.

TABLE B-38. OFFSETS--CURRENT TITLE III RETIREE SURVIVORS--62 AND OVER--40 PERCENT LIMIT (Fiscal year 1979 dollars)

YEAR	OFF	ENL	YEAR	OFF	ENL
1980	109.	27.	2004	91.	25.
1981	111.	29.	2005	90.	25.
1982	109.	26.	2006	90.	25.
1983	113.	27.	2007	89.	25.
1984	110.	26.	2008	89.	25.
1985	105.	26.	2009	89.	26.
1986	105.	25.	2010	88.	26.
1987	102.	24.	2011	88.	27.
1988	100.	24.	2012	87.	27.
1989	100.	24.	2013	87.	27.
1990	100.	24.	2014	87.	27.
1991	100.	25.	2015	87.	28.
1992	100.	25.	2016	87.	28.
1993	100.	25.	2017	85.	28.
1994	99.	25.	2018	85.	28.
1995	99.	25.	2019	84.	28.
1996	97.	25.	2020	84.	29.
1997	97.	25.	2021	84.	29.
1998	96.	25.	2022	83.	30.
1999	96.	26.	2023	83.	30.
2000	95.	26.	2024	83.	31.
2001	94.	26.	2025	83.	31.
2002	92.	26.	2026	83.	31.
2003	91.	25.	2027	0	0.

TABLE B-39. ECONOMIC ASSUMPTIONS

Fiscal Year <u>a/</u>	Percentage Growth	
	Consumer Price Index	Military Basic Pay
1980	13.3	7.0
1981	10.0	9.3
1982	9.7	8.9
1983	8.7	8.5
1984	8.3	7.8
1985	7.8	7.3
beyond 1985	5.0	6.0

a/ CPI numbers are year-over-year. Thus 1980 figures represent the average 1980 level divided by the 1979 level.

TABLE B-40. FRACTION OF SBP WIDOW(ER)S UNDER 62 WITH ONE CHILD

AGE		AGE	
16	0.4050	39	0.1730
17	0.4050	40	0.2070
18	0.4050	41	0.2070
19	0.4050	42	0.2070
20	0.3750	43	0.2070
21	0.3750	44	0.2070
22	0.3750	45	0.1910
23	0.3750	46	0.1910
24	0.3750	47	0.1910
25	0.2430	48	0.1910
26	0.2430	49	0.1910
27	0.2430	50	0.1000
28	0.2430	51	0.1000
29	0.2430	52	0.1000
30	0.1780	53	0.1000
31	0.1780	54	0.1000
32	0.1780	55	0.1000
33	0.1780	56	0.1000
34	0.1780	57	0.1000
35	0.1730	58	0.1000
36	0.1730	59	0.1000
37	0.1730	60	0.1000
38	0.1730	61	0.1000

TABLE B-41. DIVORCE RATES FOR SBP MEMBERS

AGE		AGE	
1	0.0	55	0.0030
2	0.0	56	0.0028
3	0.0	57	0.0026
4	0.0	58	0.0024
5	0.0	59	0.0022
6	0.0	60	0.0020
7	0.0	61	0.0019
8	0.0	62	0.0017
9	0.0	63	0.0017
10	0.0	64	0.0017
11	0.0	65	0.0017
12	0.0	66	0.0017
13	0.0	67	0.0016
14	0.0	68	0.0015
15	0.0	69	0.0014
16	0.0050	70	0.0013
17	0.0127	71	0.0012
18	0.0128	72	0.0011
19	0.0130	73	0.0010
20	0.0130	74	0.0009
21	0.0130	75	0.0008
22	0.0130	76	0.0007
23	0.0130	77	0.0006
24	0.0132	78	0.0005
25	0.0133	79	0.0004
26	0.0133	80	0.0003
27	0.0133	81	0.0002
28	0.0133	82	0.0001
29	0.0133	83	0.0
30	0.0120	84	0.0
31	0.0120	85	0.0
32	0.0110	86	0.0
33	0.0110	87	0.0
34	0.0100	88	0.0
35	0.0090	89	0.0
36	0.0090	90	0.0
37	0.0090	91	0.0
38	0.0080	92	0.0
39	0.0070	93	0.0
40	0.0060	94	0.0
41	0.0050	95	0.0
42	0.0048	96	0.0
43	0.0048	97	0.0
44	0.0048	98	0.0
45	0.0048	99	0.0
46	0.0048	100	0.0
47	0.0046	101	0.0
48	0.0044	102	0.0
49	0.0042	103	0.0
50	0.0040	104	0.0
51	0.0038	105	0.0
52	0.0036	106	0.0
53	0.0034	107	0.0
54	0.0032	108	0.0

TABLE B-42. DEPENDENT REMARRIAGE RATES

AGE		AGE	
1	0.0	56	0.0101
2	0.0	57	0.0091
3	0.0	58	0.0081
4	0.0	59	0.0073
5	0.0	60	0.0
6	0.0	61	0.0
7	0.0	62	0.0
8	0.0	63	0.0
9	0.0	64	0.0
10	0.0	65	0.0
11	0.0	66	0.0
12	0.0	67	0.0
13	0.0	68	0.0
14	0.0	69	0.0
15	0.0	70	0.0
16	0.0983	71	0.0
17	0.0983	72	0.0
18	0.0983	73	0.0
19	0.0983	74	0.0
20	0.0983	75	0.0
21	0.0983	76	0.0
22	0.0983	77	0.0
23	0.0983	78	0.0
24	0.0983	79	0.0
25	0.0983	80	0.0
26	0.0983	81	0.0
27	0.0930	82	0.0
28	0.0870	83	0.0
29	0.0815	84	0.0
30	0.0767	85	0.0
31	0.0714	86	0.0
32	0.0672	87	0.0
33	0.0627	88	0.0
34	0.0582	89	0.0
35	0.0549	90	0.0
36	0.0510	91	0.0
37	0.0474	92	0.0
38	0.0442	93	0.0
39	0.0409	94	0.0
40	0.0382	95	0.0
41	0.0354	96	0.0
42	0.0327	97	0.0
43	0.0301	98	0.0
44	0.0280	99	0.0
45	0.0258	100	0.0
46	0.0238	101	0.0
47	0.0219	102	0.0
48	0.0204	103	0.0
49	0.0186	104	0.0
50	0.0172	105	0.0
51	0.0157	106	0.0
52	0.0145	107	0.0
53	0.0133	108	0.0
54	0.0121	109	0.0
55	0.0110	110	0.0

TABLE B-43. NON-DISABILITY RETIREE NON-PARTICIPANTS IN SBP OR
RSFPP (End of fiscal year 1977)

AGE	OFF	ENL	AGE	OFF	ENL
19	0.	195.	60	4810.	6847.
20	0.	453.	61	4388.	5810.
21	0.	768.	62	3725.	4839.
22	0.	976.	63	3050.	4007.
23	6.	1094.	64	2504.	3182.
24	10.	1071.	65	2514.	2624.
25	21.	1208.	66	2227.	2145.
26	34.	1118.	67	2127.	1920.
27	58.	1448.	68	1986.	1503.
28	82.	1862.	69	1892.	1423.
29	149.	2194.	70	0.	0.
30	243.	2398.	71	0.	0.
31	302.	1969.	72	0.	0.
32	256.	1367.	73	0.	0.
33	275.	1174.	74	0.	0.
34	256.	1154.	75	0.	0.
35	254.	1145.	76	0.	0.
36	226.	1112.	77	0.	0.
37	224.	1948.	78	0.	0.
38	312.	4556.	79	0.	0.
39	555.	8776.	80	0.	0.
40	712.	12447.	81	0.	0.
41	956.	14932.	82	0.	0.
42	1217.	15812.	83	0.	0.
43	1738.	17795.	84	0.	0.
44	2249.	19478.	85	0.	0.
45	2635.	22427.	86	0.	0.
46	2955.	24309.	87	0.	0.
47	3257.	27874.	88	0.	0.
48	3130.	25557.	89	0.	0.
49	2991.	23460.	90	0.	0.
50	2202.	18658.	91	0.	0.
51	2233.	15960.	92	0.	0.
52	2614.	15301.	93	0.	0.
53	3251.	15227.	94	0.	0.
54	3753.	13606.	95	0.	0.
55	4317.	12874.	96	0.	0.
56	5623.	12886.	97	0.	0.
57	5605.	11231.	98	0.	0.
58	5099.	9882.	99	0.	0.
59	5044.	8514.	100	0.	0.

