APPENDIXES

Appendix I. Assumptions, Methodology, and Details of Long-Range Cost Estimates

The basic assumptions used in the long-range estimates for the old-age, survivors, and disability insurance system are described here.[1] Also given are more detailed data in connection with the results of the long-range cost estimates.

POPULATION

A projection of the U.S. population (including overseas areas covered by the old-age, survivors, and disability insurance program) for every future quinquennial year by 5-year age groups and by sex, was made. The starting point was the July 1, 1955, population as estimated by the Bureau of the Census from the 1950 census and subsequent births, deaths, and migration. This population estimate was increased to allow for probable underenumeration in the 1950 census. In both cost estimates it is assumed that mortality rates will decline until the year 2000. In the high-cost estimate, mortality rates for the year 2000 are in the neighborhood of 50 percent of the 1953 level up to age 70, with less decrease at older ages. The low-cost estimate assumes less improvement. In the low-cost estimate, fertility rates are assumed to remain at about the level of recent years until 1975 and then decrease slowly until in 2045–50 they reach about the level required to maintain a stationary population. The high-cost fertility rates begin decreasing at once and reach about the level required to maintain a stationary population in 2005–10. Both estimates assume a small amount of immigration. The low-cost estimate is based on high fertility and high mortality, while the high-cost estimate assumes low fertility and low mortality. This makes the high-cost population relatively much older than the low-cost population, which is reasonable because benefits to aged persons account for nearly 90 percent of the cost of the system. Complete details about the population projections are given in Actuarial Study No. 46, Social Security Administration.

EMPLOYMENT

Assumptions as to the percentage of the population who have covered employment during a year were made for each age group by sex for each quinquennial year. For those under retirement age, the 1955 figures after being adjusted upward to allow for the extension of coverage under the 1956 amendments and the full potential coverage of the 1954 amendments were continued level into the future for

[1] For more details as to the general procedures followed in making the long-range cost estimates, see Actuarial Study No. 48, Social Security Administration, which deals with the 1956 act.

males, but for females an increase was assumed, especially at the middle ages, which continues the past trend. Beyond retirement age, an increase was assumed in the low-cost estimates, which implies an increasing proportion affected by the retirement test; conversely, in the high-cost estimate a decrease was assumed, of a somewhat larger size than the increase assumed in the low-cost estimate. Assumptions were also made as to the percentage of covered workers in each age group who have four quarters of coverage during the year. The employment assumptions were based on 1955 data and thus represent close to full employment. A depression could substantially increase the cost, as illustrated in table 16 of the main text. But it is believed that any periods of low employment would be of short duration and would not have a significant long-range effect.

EARNINGS

Level average earnings at about the 1956 level were assumed in each of the four groups: male four-quarter workers, male workers with less than four quarters of employment, female four-quarter workers, and female workers with less than four quarters of employment. Because of the varying distribution of workers among these four categories, there is a slight variation from year to year in the assumed average credited earnings for all workers combined, which is about $2,650 per year. In the past, average earnings have greatly increased, partly because of inflation and partly because of increased productivity. If this trend continues and the benefit formula is not changed, the cost relative to payroll would be less than the estimates show because the formula provides a benefit that is a decreasing percentage of the average wage as the average wage increases. It is likely, however, that if average earnings increase, the benefit formula would be modified accordingly. If benefit payments were increased in exactly the same ratio as the increase in average earnings, the year-by-year cost estimates of benefit payments expressed as a percentage of payroll would be unchanged. There would, however, be some increase in the level-premium cost because of the diminished relative value of interest earnings on the trust funds.

INSURED POPULATION

The term "insured" is used as meaning either fully or currently insured. Separate estimates of fully insured, currently insured, and both fully and currently insured have not been made, because almost all aged insured persons and almost all younger male insured are fully insured, and also because either fully or currently insured status generally gives eligibility to all young survivor benefits. The percentage of insured persons by age and sex were estimated from the percentages of persons covered. It is evident that almost all males will eventually be insured for old-age and survivors benefits; the ultimate percentage for aged males is estimated at 92 percent in the low-cost estimate and 97 percent in the high-cost estimate. For females there is much greater uncertainty, but it is estimated that the corresponding proportion for aged females would eventually be 60 percent in the low-cost estimate and 70 percent in the high-cost estimate. The estimates of the population insured for disability benefits are lower than those for the population insured for old-age and survivor benefits; the latter have been reduced to take into account the more restrictive insured status provisions for disability benefits.

AGED BENEFICIARIES

Old-age beneficiaries were estimated by subtracting from the total aged insured workers those aged 65 to 71 whose benefits are withheld because of failure to meet the retirement test. The number with benefits so withheld was assumed to be a constant percentage, based on recent actual data, of the aged covered population. To estimate potential wife beneficiaries, the percentages of men having wives aged 62 and over, by age of male, were obtained from census data. These figures were assumed to increase in the future so as to be consistent with the decreasing mortality assumption. It was assumed that no wives defer retirement to age 65 in order to avoid reduced benefits.

To estimate potential widow beneficiaries, the deaths of insured married men in each quinquennial year were computed using the same percentage of married men among the total deaths of insured male workers in the year as is found in recent operating data. The widows thus created were projected with mortality and remarriage rates. The death rates assumed are consistent with the survival rates used in the population projections; the remarriage rates are based on 1956 experience of mother beneficiaries.

It is assumed that the actual wife and widow beneficiaries consist of the uninsured among these potential beneficiaries. A fraction of the remainder receive a residual benefit—the amount by which the potential wife's or widow's benefit exceeds the old-age benefit. Ultimately, it is assumed that the percentage of potential wife or widow beneficiaries who are uninsured and thus receive a full benefit is 43.3 percent in the low-cost estimate and 32.3 percent in the high-cost estimate. These figures were arrived at by assuming that the percentage single and divorced in the aged female population would remain at the present level of about 10 percent, that 90 percent of the single and divorced would be insured, and that the chance of a wife or widow being insured would be the same regardless of whether she was a potential wife or widow beneficiary. The percentage uninsured was, in effect, graded from estimates of recent actual data to the ultimate figure; initially the figure is greater for wives than for widows since the former are less likely to have had recent employment. The number of widow beneficiaries was adjusted somewhat so as to yield a reasonable relationship between the total number of aged female beneficiaries and the total aged female population.

The minor category of parent beneficiaries is estimated as a constant proportion of aged persons not eligible for any other benefit. The insignificant effect of the retirement test for wives and widows is ignored, as are also benefits for dependent husbands and widowers. Appendix table 1 shows the estimated aged beneficiaries. By 2050, the low-cost beneficiaries slightly exceed those under the high-cost estimate; this is because the low-cost population—not only at the working ages but also at the older ages—is much larger.

BENEFICIARIES UNDER RETIREMENT AGE

Young wives and children of retired workers were estimated using pertinent ratios to male old-age beneficiaries based on recent actual data.

Child survivor beneficiares were obtained from estimates of total paternal orphans in the country in future years. The projected child population by age groups was multiplied by the probability of the father having died, using an average age for fathers at birth of child, and death rates consistent with the population projections. The paternal orphans were then adjusted to eliminate orphans of uninsured men and to include the small number of orphans of insured women. Mother survivor beneficiaries were estimated by assuming a constant ratio of mothers to children, a little below the recent actual ratio in the low-cost estimate, and a little above it in the high-cost estimate. The number of lump-sum death payments was estimated by multiplying the insured population by death rates consistent with the survival rate used in the population projections.

APPENDIX TABLE 1.—*Estimated monthly aged beneficiaries,*[1] *males aged 65 and over and females aged 62 and over, in current-payment status, 1965–2050*

[In thousands]

Calendar year	Old-age beneficiaries		Wives of old-age beneficiaries [2]	Aged widows [3]	Dependent parents	Total aged
	Male	Female				
	Actual data for December [4]					
1950	1,469	302	508	314	15	2,608
1951	1,819	459	647	384	19	3,328
1952	2,052	592	724	434	21	3,823
1953	2,438	784	864	511	22	4,619
1954	2,803	972	981	595	24	5,375
1955	3,252	1,222	1,141	701	25	6,341
1956	3,572	1,540	1,378	913	27	7,430
1957	4,198	1,999	1,784	1,095	29	9,105
	Low-cost estimate					
1965	5,347	3,040	2,173	2,046	56	12,662
1970	5,830	3,892	2,304	2,618	52	14,696
1980	7,329	5,996	2,716	3,421	46	19,508
2000	9,465	9,304	2,970	4,287	34	26,060
2050	20,989	24,751	5,497	8,554	50	59,841
	High-cost estimate					
1965	5,849	3,658	2,352	1,905	54	13,818
1970	6,572	4,763	2,561	2,392	50	16,338
1980	8,906	7,644	3,224	2,896	42	22,712
2000	13,543	12,604	3,871	3,684	24	33,726
2050	23,780	25,122	4,597	4,937	24	58,460

[1] Persons qualifying both for old-age benefits and for wife's, widow's, husband's, widower's, and parents benefits are shown only as old-age beneficiaries.
[2] Including dependent husbands and wives of any age with child beneficiaries in their care (both relatively small categories).
[3] Including dependent widowers.
[4] Excluding effect of railroad coverage under financial interchange provisions.

DISABILITY INCIDENCE AND TERMINATION RATES

Estimates of the future cost of the disability insurance program have been based on the same general assumptions that were used in the estimates prepared at the time of the 1956 amendments, because there are not yet sufficient data available from the actual operation of the program to suggest with any degree of certainty what changes should be made in these assumptions.

In the high-cost estimates, disability incidence rates for men are based on the so-called 165 percent modification of class 3 rates (which includes increasingly higher percentages for ages above 45). This 165 percent modification corresponds roughly to life insurance company experience during the early 1930's. Incidence rates assumed for women are 100 percent higher than for men. Termination rates are class 3 rates (relatively high—to be consistent with the high incidence rates assumed).

For the low-cost estimates, disability incidence rates for men have been taken at 25 percent of those used in the high-cost estimates, or in other words, on the average about 45 to 50 percent of the class 3 rates considering the larger adjustments above age 45. Incidence rates assumed for women are 50 percent higher than for men. Termination rates are based on German social security experience for 1924–27, which is the best available experience as to relatively low disability termination rates to be anticipated in conjunction with low incidence rates.

The incidence rates actually used for both estimates are 10 percent below the above rates because, unlike the general definition in insurance company policies, disability is not presumed to be total and of expected long-continued duration after 6 months' duration, but rather permanence must be proved at that time.

It will be noted that the low-cost estimate includes low incidence rates (which, taken by themselves, produce low costs) and also low termination rates (which, taken by themselves, produce higher costs, but which are considered necessary since with low incidence rates there would tend to be few recoveries). On the other hand, the high-cost estimate contains high incidence rates that are somewhat offset by high termination rates.

It is believed that these cost estimates for the monthly disability benefits are as good an indication of these costs as it is now possible to achieve. Nevertheless, it is recognized that in a new field such as this, more valid estimates are possible only after several years of operating experience has developed. Disability incidence and termination rates can vary widely—much more so than the mortality rates which underlie retirement and survivor benefit cost calculations.

Persons who will receive benefits as dependents of disabled workers have been estimated by assuming a constant ratio to the number of disability insurance beneficiaries. This ratio is based on statistics recently developed concerning dependents of workers for whom a disability determination has been made.

Appendix table 2 shows the estimates of beneficiaries under retirement age.

APPENDIX TABLE 2.—*Estimated monthly beneficiaries under retirement age*[1] *in current-payment status, 1965–2050*

[In thousands]

Calendar year	Children	Widowed mothers	Disability			Total monthly beneficiaries	Lump-sum death payments
			Workers	Wives	Children		
	Actual data for December [2]						
1950	699	169	----------	----------	----------	868	200
1951	846	204	----------	----------	----------	1, 050	414
1952	939	229	----------	----------	----------	1, 168	438
1953	1, 053	254	----------	----------	----------	1, 307	512
1954	1, 161	272	----------	----------	----------	1, 433	516
1955	1, 276	292	----------	----------	----------	1, 568	567
1956	1, 341	301	----------	----------	----------	1, 642	547
1957	1, 502	328	150	----------	----------	1, 980	689
	Low-cost estimate						
1965	1, 956	402	508	71	142	3, 079	997
1970	2, 077	425	649	91	182	3, 424	1, 110
1980	2, 296	462	824	115	231	3, 928	1, 348
2000	2, 694	545	968	136	271	4, 614	1, 870
2050	3, 267	592	2, 119	297	593	6, 868	4, 121
	High-cost estimate						
1965	1, 740	433	974	136	273	3, 556	980
1970	1, 692	406	1, 282	179	359	3, 918	1, 066
1980	1, 613	362	1, 623	227	454	4, 279	1, 258
2000	1, 585	328	1, 951	273	546	4, 683	1, 822
2050	1, 846	319	2, 832	396	793	6, 186	3, 267

[1] Excludes wives of old-age beneficiaries under age 62. Includes female disability beneficiaries aged 62–64 and wives aged 62 and over of male disability beneficiaries.
[2] Excluding effect of railroad coverage under financial interchange provisions.

AVERAGE BENEFITS AND TOTAL BENEFIT PAYMENTS

Average benefits in the various benefit categories were interpolated between current sizes estimated from recent claims data and ultimate sizes computed on the basis of the 1956 earnings level, with $4,800 earnings base, being in effect throughout the entire working life of all workers with respect to whom benefits are being paid. Total benefit payments were shown in tables 18 and 19 and as a percentage of payroll in table 17 of the main text.

Even under the low-cost estimate the cost as a percentage of payroll is eventually more than double the 1957 figure. The upward trend is temporarily reversed around the year 2000, at which time an important part of the aged population consists of survivors of persons born in the 1930's, when birth rates were low. The cost of child's and mother's benefits first increases because of the high birth rates of recent years and then decreases below the current level as fertility decreases. The cost of old-age benefits for women shows the greatest relative increase because of the increasing employment of women, and the fact that there will be an increasingly longer time for women workers to have obtained the minimum 10 years of covered work required for fully insured status. Widow's benefits are second as to rate of increase because the husbands of many of the present-day widows died when the chance of being insured was much less.

The low-cost estimates for child's and mother's benefits are greater than the high-cost estimates. This is because the high fertility and high mortality assumptions which produced the low cost for benefits to aged persons have the opposite effect (relatively more children in the population and relatively more of their parents dying) for child's and mother's benefits. The low-cost estimate for lump-sum death payments is lower than the high-cost estimate because, although death rates by age are higher in the low-cost estimate, the population is relatively much younger and the crude death rate is lower. The low-cost estimate for widows is only slightly below the high-cost, and in fact is above it in the early years, despite the fact that aged widows are a smaller percentage of the low-cost population, because a greater percentage of the low-cost widows receive old-age benefits. The widest range between low-cost and high-cost figures is in the disability estimates, because of the relative uncertainty about the disability rates to be experienced.

ADMINISTRATIVE EXPENSES

Assumed administrative expenses for old-age and survivors insurance were based on two factors—the number of persons having any covered employment in the given year and the number of monthly beneficiaries. In the case of disability insurance expenses, a third factor—the number of persons becoming disabled during the year—was taken into account, since the cost of adjudication of disabilities represents a substantial part of the expenses.

RAILROAD RETIREMENT FINANCIAL INTERCHANGE

As explained in appendix II, there is a financial interchange between the old-age, survivors, and disability insurance and the railroad retirement systems the purpose of which is to place the old-age and survivors insurance and the disability insurance trust funds in the same position they would have been in if railroad employment were, and always had been, covered employment. The long-range estimates were first made as if railroad employment were covered directly, and all tables except tables 18 and 19 are on that basis. Then, estimates were made of the old-age, survivors, and disability insurance taxes payable by railroad workers (a level railroad payroll of $5.3 billion was assumed), and of the additional old-age, survivors, and disability insurance benefits payable if railroad employment were covered directly. Then the progress of the funds could be shown (tables 18 and 19), with contributions and benefit payments and administrative expenses exclusive of the amounts arising from the indirect coverage, and the amount transferred to or from the railroad system shown as a separate item. Because of the relatively older age distribution of railroad workers, the transfer is currently in favor of the railroad retirement system. But it is estimated that eventually the low-cost factors of railroad employment—higher average wage and lower percentage of females coupled with more women receiving old-age, survivors, and disability insurance benefits on their own earnings record—will shift the transfer the other way, with the long-range effect being insignificant.

INTEREST RATE

For both the low-cost and high-cost estimates, the eventual interest rate assumed was 3.0 percent. This rate is somewhat below the average market rate on long-term Government obligations that has prevailed in the past 2 years, which is an indication of what the average coupon rate of such obligations may eventually be. The assumed rate for the first few years was estimated by grading it up from the somewhat more than 2½ percent actually experienced in recent years.

Appendix II. Legislative History Affecting the Trust Funds

Board of Trustees.—From January 1, 1940, when the Federal old-age and survivors insurance trust fund was established, through July 15, 1946, the three members of the board of trustees, who serve in an ex officio capacity, were the Secretary of the Treasury, the Secretary of Labor, and the Chairman of the Social Security Board. On July 16, 1946, under the Reorganization Plan No. 2 of 1946, the Federal Security Administrator became ex officio member of the board of trustees in place of the Chairman of the Social Security Board, which agency was abolished. On April 11, 1953, the Reorganization Plan No. 1 of 1953, creating the Department of Health, Education, and Welfare, went into effect, and the office of Federal Security Administrator was abolished. The functions of the Administrator as ex officio member of the board of trustees were taken over by the Secretary of Health, Education, and Welfare. The remaining membership of the Board has not changed since it was first established. Since the establishment of the fund, the Secretary of the Treasury has been managing trustee. The Social Security Act Amendments of 1950 designated the Commissioner for Social Security—since April 11, 1953, the Commissioner of Social Security—as Secretary of the Board of Trustees. Under the Social Security Amendments of 1956, the board of trustees of the Federal old-age and survivors insurance trust fund was also made the board of trustees of the Federal disability insurance trust fund.

Contribution rates.—The Social Security Act of 1935 fixed the contribution rates for employees and their employers at 1 percent each on taxable wages for the calendar years 1937–39, and provided for higher rates thereafter. However, subsequent acts of Congress extended the 1-percent rates through calendar year 1949. On January 1, 1950, the rates rose to 1½ percent each for employees and employers, as provided by the Social Security Act Amendments of 1947. In accordance with the Social Security Act Amendments of 1950, the 1½ percent rates remained in effect through calendar year 1953, and, on January 1, 1954, rose to 2 percent each for employees and employers. These rates remained in effect through December 31, 1956. In accordance with the Social Security Amendments of 1956 the 2 percent rates rose to 2¼ percent each on January 1, 1957, and remained in effect through calendar year 1958. Beginning January 1, 1951—the effective date of extension of coverage to self-employed persons—the rates of tax on self-employment income have been equal to 1½ times the corresponding employee rates.

Special refunds of employee contributions.—With respect to wages paid before 1951, refunds to employees who worked for more than one employer during the course of a year and paid contributions on such wages in excess of the statutory maximum were made from general revenues. With respect to wages paid after 1950, these refunds are paid from the Treasury account for refunding internal revenue collections. The Social Security Act Amendments of 1950 directed the managing trustee to pay from time to time from the old-age and survivors insurance trust fund into the Treasury, as repayments to the account for refunding internal-revenue collections, the amount estimated by him to be contributions which are subject to refund with respect to wages paid after 1950. The Social Security Amendments of 1956 provided for similar repayments from the disability insurance trust fund.

Credits for military service.—The Social Security Act Amendments of 1946 provided survivor-insurance protection to certain World War II veterans for a period of 3 years following their discharge from the Armed Forces. Federal appropriations were authorized to reimburse the Federal old-age and survivors insurance trust fund for such sums as were withdrawn to meet the additional cost (including administrative expenses) of such payments. The 1950 amendments, which provided noncontributory $160 monthly wage credits to persons who served in the Armed Forces during World War II, and the 1952, 1953, 1955, and 1956 amendments which provided similar noncontributory credits on account of active military or naval service from July 25, 1947, through December 31, 1956, charged to the old-age and survivors insurance trust fund not only the additional costs arising from these credits but also, beginning September 1950, those additional costs arising under the 1946 amendments. The 1956 amendments provided contributory coverage for military personnel beginning January 1, 1957.

Social Security Act Amendments of 1950.[1]—The 1950 amendments to the Social Security Act and related sections of the Internal Revenue Code, which represented the first major legislative changes in the old-age and survivors insurance program since enactment of the 1939 amendments, became law August 28, 1950.

The more important changes significant from an actuarial standpoint are presented below.

1. Compulsory coverage was extended to regularly employed domestic and farm employees; most Federal employees not covered under the civil service retirement program; the nonfarm self-employed other than doctors, lawyers, engineers, and members of certain other professional groups; employees and the self-employed in Puerto Rico and the Virgin Islands; and a few other small occupational classes. In addition, two categories of employees were given the opportunity to be covered on a group voluntary basis—employees of nonprofit institutions and employees of State and local governments who are not under retirement systems.

2. Benefits were made payable in certain circumstances in which no benefits would formerly have been paid.

(*a*) The requirements for fully insured status were liberalized by introducing a new starting date for determining such status. This "new start" enabled many persons at least 65 years of age who did not meet the former requirements to become immediately eligible to

[1] Certain provisions in these amendments were further changed in subsequent legislation.

receive retirement benefits. It also removed the disadvantage the newly covered groups would otherwise have faced in acquiring eligibility.

(*b*) Provisions defining dependency were modified to permit the payment of survivor benefits to all unmarried children under 18 years of age whose mothers were currently insured at time of death.

(*c*) Several new benefits for dependents and survivors of insured persons were added. Benefits equal to 50 percent of the primary insurance amount would be payable to a wife, under 65 years of age, of an old-age (primary) beneficiary as long as she had in her care a child entitled to benefits on her husband's earnings. In certain instances benefits would be payable to the dependent husband, aged 65 or over, of a retired female beneficiary, and also to the aged surviving dependent widower of a deceased woman worker. Husband's and widower's benefits are equal to 50 and 75 percent respectively, of the primary insurance amount.

(*d*) The provisions governing the withholding of benefits because of work in covered employment were liberalized. Eligible persons at least 75 years of age could receive benefits regardless of the amount of their earnings in covered employment. Those under 75 years of age might earn as much as $50 a month in covered employment and still receive benefits.

(*e*) Lump-sum death payments were made available even though monthly benefits were payable to survivors for the month in which the wage earner died.

(*f*) Monthly benefits were made payable retroactively for a period up to 6 months prior to the month in which an application was filed, provided the beneficiary was eligible therefor.

3. Larger benefits were made payable to future beneficiaries as well as to persons on the rolls.

(*a*) The maximum amount of annual earnings taxable and creditable was raised to $3,600.

(*b*) For persons having at least six quarters of coverage after 1950, the average monthly wage might be calculated over all years after 1936 or after 1950, whichever yielded the larger primary insurance amount, except that in the case of such individuals born after 1928, the 1950 starting date was required. Where the wage earner lacked six quarters of coverage after 1950, benefits to future beneficiaries would be based on an average monthly wage computed over all years after 1936.

(c) For persons whose average monthly wage was calculated on the basis of earnings after 1950, the monthly primary insurance amount was figured by taking 50 percent of the first $100 of average monthly wage, plus 15 percent of the next $200. The minimum primary insurance amount ranged from $25 for persons with average monthly wages between $35 and $50, down to $20 for persons with average monthly wages below $31.

(*d*) For persons already on the beneficiary rolls, benefits were increased by means of a conversion table contained in the amendments. In the cases referred to in subparagraph (*b*) above, where the average monthly wage was computed over all years after 1936, benefits would be computed by the old formula, except that no 1-percent increment would be included for years after 1950. The amount so computed would then be increased by means of the conversion table.

(*e*) Parent's benefits were increased to 75 percent of the primary insurance amount. Child-survivor benefits were increased so as to pay to each child the sum of (1) 50 percent of the primary insurance amount, and (2) 25 percent of the primary insurance amount, divided by the number of child beneficiaries in the family. The amount of the lump-sum death payment was changed from six times the primary insurance benefit to three times the primary insurance amount.

(*f*) The maximum monthly amount of family benefits payable with respect to one wage record became the smaller of $150 or 80 percent of the average monthly wage, provided that the latter limit would not reduce benefits below $40.

4. The provision which was added to the Social Security Act in 1943 authorizing appropriations to the trust fund from general revenues when needed to meet costs was eliminated.

Social Security Act Amendments of 1952.[2]—The 1952 amendments to the Social Security Act became law July 18, 1952. The important changes, significant from an actuarial standpoint, are presented below.

1. Larger benefits were made payable to beneficiary families on the rolls as well as to virtually all future beneficiary families.

(*a*) For persons with an average monthly wage calculated on the basis of earnings after 1950, the monthly primary insurance amount was raised to 55 percent of the first $100 of average monthly wage, plus 15 percent of the next $200. The minimum primary insurance amount was made $25 for persons whose average monthly wage was under $35, and $26 for persons with average monthly wages from $35 to $47.

(*b*) For persons already on the beneficiary rolls whose benefits were determined by the conversion table, benefits were increased by the use of a new conversion table in which all primary insurance amounts in the table of the 1950 law were increased by $5 or 12½ percent, whichever was larger. This new conversion table would be applicable in determining benefits for all future beneficiaries whose average monthly wage was computed over all years since 1936.

(c) The maximum monthly amount of family benefits payable with respect to one wage record was the smaller of $168.75 or 80 percent of the average monthly wage, provided that the latter limit would not reduce benefits below $45.

2. The provision governing the withholding of benefits because of work in covered employment was liberalized. The amount which eligible persons under age 75 might earn in covered employment and still receive benefits was increased to $75 a month.

Social Security Amendments of 1954.[2]—The 1954 amendments to the Social Security Act and related sections of the Internal Revenue Code became law, September 1, 1954. The important changes significant from an actuarial standpoint are presented below:

1. Compulsory coverage was extended to self-employed farm operators; certain self-employed professional persons; additional farm, domestic, and Federal civilian employees; and some smaller groups. Coverage under the program was made possible on a group voluntary basis for State and local government employees who are members of retirement systems (except policemen and firemen) and for employees

[2] Certain provisions in these amendments were further changed in subsequent legislation.

of foreign subsidiaries of American companies. Ministers and certain members of religious orders were permitted to participate in the program on the basis of the individual's irrevocable election.

2. The conditions under which persons may become eligible for benefits were liberalized.

(*a*) Monthly benefits became payable to certain surviving dependents of individuals who died after 1939 and before September 1950, lacking fully insured status under the law then in effect, but who had at least six quarters of coverage.

(*b*) Persons who could not meet the requirements of the 1950 amendments for fully insured status would nevertheless be fully insured if all quarters elapsing after 1954 and before July 1956 as well as all quarters thereafter but before the quarter of death or attainment of age 65, whichever is earlier, were quarters of coverage. This transitional provision, intended principally for newly covered persons, would cease to be effective for persons who die or attain age 65 after the third quarter of 1958, when the normal requirements became as easy or easier to meet.

(*c*) Periods of disability (see item 4, below) would not affect insured status.

(*d*) Monthly benefits were made payable retroactively for a period up to 12 months before the month in which an application was filed, provided the beneficiary was eligible therefor.

3. Larger benefits were made payable to future beneficiaries as well as persons on the rolls.

(*a*) The maximum amount of annual earnings taxable and creditable toward benefits was raised to $4,200.

(*b*) In computing the average monthly wage of persons who became eligible for retirement benefits or die after August 1954 before becoming eligible for retirement benefits, up to 5 years of lowest earnings may be dropped for persons with at least 20 quarters of coverage and up to 4 years for other persons. This "dropout" computation may also be used for persons who were eligible for retirement benefits before September 1954 and who have at least six quarters of coverage after June 1953.

(*c*) Periods of disability (see item 4, below) would not reduce the average monthly wage for the purpose of benefit computation.

(*d*) For persons whose average monthly wage is calculated on the basis of earnings after 1950 and the "dropout," the primary insurance amount became 55 percent of the first $110 of average monthly wage plus 20 percent of the next $240. The minimum primary insurance amount became $30.

(*e*) For persons already on the benefit rolls, and for future beneficiaries whose benefits are computed under the 1939 or 1952 benefit formulas, benefits were increased by use of a revised conversion table which provided a guaranteed increase in primary insurance amount of at least $5 over the amount computed under the 1952 amendments.

(*f*) The minimum benefit for a family containing only one survivor beneficiary became $30.

(*g*) The maximum monthly amount of family benefits payable with respect to one wage record was raised to the smaller of $200 or 80 percent of the average monthly wage provided that the latter limit may not reduce benefits below the larger of $50 or 1½ times the primary insurance amount. The maximum lump-sum death payment was increased to $255.

4. Benefit rights of persons regularly covered by the program can be "frozen" during periods of prolonged total disability. In order to qualify for the "freeze," an individual must (1) be unable to engage in any substantial gainful activity by reason of illness, injury, or other physical or mental impairment which can be expected to be of long-continued and indefinite duration or to result in death; or (2) the individual must be blind. He must also have at least 6 quarters of coverage during the 13-quarter period, and at least 20 quarters of coverage during the 40-quarter period, that ends with the quarter in which the period of disability begins. If an individual qualifies for a disability "freeze," his period of disability will be disregarded in determining his insured status and in computing benefits due him or his family.

5. The provisions governing the withholding of benefits because of work were changed.

(*a*) The retirement test was placed on an annual basis for both wages and self-employment income. If an individual's annual earnings were $1,200 or less, no benefits are withheld. Each $80 (or fraction thereof) in earnings above $1,200 might result in deduction of 1 month's benefits for the individual. Benefits were not to be withheld for any month for which the individual had $80 or less in wages and did not engage in substantial self-employment.

(*b*) Earnings in noncovered as well as in covered employment were to be taken into account in determining whether benefits should be withheld.

(*c*) The age at which benefits were payable without regard to earnings was reduced to 72.

Social security amendments in 1956.[3]—The 1956 amendments to the Social Security Act and related sections of the Internal Revenue Code (Public Laws 880 and 881) became law on August 1, 1956.

The more important changes, significant from an actuarial standpoint, are presented below:

1. Coverage was extended on a contributory basis to members of the uniformed services, effective January 1, 1957. Coverage was also extended to additional civilian jobs—principally, additional farm owners and operators, all previously excluded self-employed professional persons except doctors of medicine, certain Federal civilian employees, and certain additional State and local government employees in specified States.

2. Monthly benefits were provided, beginning July 1957, for insured workers aged 50 to 64 with very severe long-term disabilities. Benefit payments begin after a waiting period of 6 consecutive months of disability. The amount of the monthly disability benefit is the same as the primary insurance amount, computed as though the worker became entitled to old-age benefits in the first month of his waiting period. These benefits are payable from a fund that is separate from the old-age and survivors insurance trust fund (see items 5 (a) and (b), below.

3. The conditions under which persons may become eligible for benefits were liberalized.

[3] Certain provisions in these amendments were further changed in subsequent legislation.

(*a*) Monthly benefits were provided, beginning January 1957, for a dependent, unmarried, disabled child aged 18 or over of a retired-age worker or a deceased insured worker if the child was totally disabled before attaining age 18 and if the disability has continued uninterruptedly since age 18. Benefits are also payable to a mother having such a child in her care. Benefits to both child and mother are payable from the old-age and survivors insurance trust fund.

(*b*) The minimum retirement age at which women may qualify for benefits was reduced from 65 to 62. Full-rate benefits are payable at age 62 to widows and to dependent mothers of deceased insured workers. Women who elect to receive a retired worker's or wife's benefit when they are between age 62 and 65 will receive reduced benefits (both before and after age 65) which are, on an actuarial basis, virtually equivalent to the full-rate benefits they would have received if they were aged 65 at the time they applied for benefits. One effect of reducing the minimum retirement age for women was a change in the basis for calculating a woman worker's average monthly wage (see item 4(b) below). Another effect was a liberalization in the insured status requirements. For women workers with dates of birth from July 2, 1889, to January 1, 1909, the eligibility provisions were liberalized by terminating at age 62 instead of age 65 the elapsed period which fixes the number of quarters of coverage required to be eligible for old-age insurance benefits.

(*c*) Persons who cannot meet the requirements of the 1950 or 1954 amendments for fully insured status will nevertheless be fully insured if they have quarters of coverage in all but four of the quarters elapsing after 1954 and before (1) July 1957, or (2) if later, the quarter of death or attainment of retirement age. This transitional provision, intended principally for persons newly covered in 1956, will cease to be effective for persons who die or attain retirement age after the third quarter of 1960, when the normal requirements become as easy or easier to meet.

4. Larger benefits were made payable in the future to certain beneficiaries.

(*a*) In computing the average monthly wage of an insured person, 5 years of lowest earnings may be dropped, regardless of the number of quarters of coverage he has. For persons retiring in 1957 and 1958 this meant that the average could be computed on the highest 2 years of earnings since 1950.

(*b*) With the lowering of the minimum retirement age for women from 65 to 62, the average monthly wage of a female insured worker is computed on the basis of the earnings up to the year of attainment of age 62 or, if it would result in a higher benefit, up to the year of retirement if later. In effect, the lowering of the minimum retirement age from 65 to 62 makes a dropout of 3 additional years of lowest earnings possible for many women workers.

5. A disability insurance trust fund was created which is entirely separate from the old-age and survivors insurance trust fund and from which monthly benefits are payable to disabled workers. Beginning with 1957, contributions at the rate of one-fourth of 1 percent each for employees and employers, and three-eighths of 1 percent for the self-employed, are payable into this new fund to finance these benefits and related administrative expenses.

6. Before each scheduled increase in the contribution rate, an Advisory Council on Social Security Financing is to be appointed by the Secretary of Health, Education, and Welfare to review the status of the old-age and survivors insurance trust fund and the disability insurance trust fund in relation to the long-term commitments of the program. The report of the first council appears as appendix IV.

7. The old-age and survivors insurance trust fund and, where appropriate, the disability insurance trust fund will be reimbursed from general revenues for expenditures after August 1950 resulting from the provisions that granted noncontributory $160 monthly wage credits to persons who served in the Armed Forces from September 16, 1940, through December 31, 1956, and from the provisions enacted in 1946 that granted survivorship protection to certain World War II veterans for a period of 3 years after leaving service.

8. The basis for determining the interest rate on public-debt obligations to be purchased by the trust funds was changed. Formerly these obligations were required to bear interest at a rate equal to the average rate of interest, computed as of the end of the calendar month next preceding the date of their issue, borne by all interest-bearing obligations of the United States forming a part of the public debt (where such average rate was not a multiple of one-eighth of 1 percent, the rate of interest on such obligations was required to be the multiple of one-eighth of 1 percent next lower than such average rate). Investments after July 31, 1956, bear a rate of interest equal to the average rate of interest borne by all marketable Government obligations with maturity dates exceeding 5 years from the date of issue, the average rate being rounded to the nearest one-eighth of 1 percent.

Social security amendments in 1958.—The more important changes, significant from an actuarial standpoint, are presented on pages 3–5.

Coordination of old-age, survivors, and disability insurance and railroad retirement programs.—Public Law 234, approved October 30, 1951, amended the Railroad Retirement Act to provide a new basis of coordinating the railroad retirement program with old-age and survivors insurance. This legislation provides that the railroad wage credits of workers who die or retire with less than 10 years of railroad employment shall be transferred to the old-age and survivors insurance system. These amendments did not affect workers who acquire 10 years or more of railroad service. That is, the survivors of over-10-years railroad workers will, as under the 1946 amendments to the Railroad Retirement Act, receive benefits under one program or the other based on combined wage records, while retirement benefits will be payable under both systems to individuals with 10 or more years of railroad service who also qualify under old-age and survivors insurance.

With respect to the allocation of costs between the two systems, Public Law 234 required the Railroad Retirement Board and the Secretary of Health, Education, and Welfare to—

> determine, no later than January 1, 1954, the amount which would place the Federal old-age and survivors insurance trust fund in the same position in which it would have been at the close of the fiscal year ending June 30, 1952, if service as an employee after December 31, 1936, had been included in the term "employment" as defined in the Social Security Act and in the Federal Insurance Contributions Act.

The two agencies completed a series of joint actuarial studies and analyses required by this provision. The results showed that the addition of $488 million to the old-age and survivors insurance trust fund would place it in the same position as of June 30, 1952, as it would have been if railroad employment had always been covered under the Social Security Act.

There is no authority in the law that would have permitted the transfer of the $488 million from the railroad retirement account to the trust fund, but the legislation provides that beginning with fiscal year 1953, and for each fiscal year thereafter, annual interest payments on this amount (less any offsets described below) were to be transferred from the railroad retirement account to the trust fund.

The legislation further provides that at the close of the fiscal year 1953, and each fiscal year thereafter, annual reimbursements are to be effected between the railroad retirement account and the trust fund in such amounts as would, taking into consideration the amount determined for the period through June 30, 1952, place the trust fund at the end of the year in the same position in which it would have been if railroad employment were covered under the Social Security Act. If the reimbursement is from the trust fund to the railroad retirement account, the Secretary of Health, Education, and Welfare may offset the amount of such reimbursement against the amount determined for the period through June 30, 1952.

The Social Security Amendments of 1956 amended Public Law 234 to provide for similar annual determinations and financial interchanges between the railroad retirement account and the newly created disability insurance trust fund, beginning with the fiscal year ending June 30, 1958.

Change in definition of "employee."—Public Law 642, approved June 14, 1948, which amended the definition of the term "employee" as used in the Social Security Act, resulted in the exclusion from coverage of certain services previously held covered. While the amended definition was made retroactive to 1937, certain wage credits established under the former definition will remain credited to the individual's account. The law authorizes an appropriation to the trust fund from general revenues equal to the estimated total amount of benefits paid and to be paid that would not have been paid had the amended definition been in effect beginning in 1937.

Authorization for construction of office building.—With the passage of Public Law 85-67, approved June 29, 1957, Congress authorized expenditure from the trust fund of $31,080,000 for construction of an office building and related facilities for the Bureau of Old-Age and Survivors Insurance.

Appendix III. Statutory Provisions Creating the Trust Funds and Defining the Duties of the Board of Trustees

(Secs. 201 and 218 (e), (h), and (j) of the Social Security Act as amended)

FEDERAL OLD-AGE AND SURVIVORS INSURANCE TRUST FUND AND FEDERAL DISABILITY INSURANCE TRUST FUND

Sec. 201. (a) There is hereby created on the books of the Treasury of the United States a trust fund to be known as the "Federal Old-Age and Survivors Insurance Trust Fund." The Federal Old-Age