ANALYSIS OF THE BENEFITS UNDER THE OLD-AGE AND SURVIVORS
INSURANCE PROGRAM AS AMENDED IN 1952

By

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FOREWORD

The extensive amendments to the old-age and survivors insurance system enacted in 1950 represented a continued advance and building on the framework established by the 1939 Amendments, while at the same time adjusting the benefit level for the changes in wage levels and cost of living in the war and postwar periods. In 1952 further amendments were enacted, primarily increasing the benefits amounts so as to reflect the changes in wage levels since the outbreak of hostilities in Korea.

The thorough analysis of the benefit relationships under these amendments which Mr. Rasor has made is primarily quantitative and mathematical, showing the various benefit relationships developing. The tables of illustrative benefits for the new formula should prove very useful. Some of the mathematical analyses, particularly those concerned with the conversion of benefits under the previous law to increase the benefit amounts, would appear to show peculiarities and inconsistencies in some instances. However, these are only of minor importance since the number of such cases and the amounts involved will be relatively small, but they should be carefully noted and recognized as being present. In a broad social insurance program it is both undesirable and virtually impossible to obtain exact individual equity. However, it can be fairly stated that a very high degree of consistency has on the whole been obtained in these amendments, considering the complexity involved in converting the benefits and bringing under coverage new employment categories.

This Actuarial Study is the fourth of a series. <u>Actuarial Study No. 8</u> made a somewhat similar analysis for the 1935 Act, while <u>Actuarial Study No. 14</u> dealt similarly with the 1939 Amendments and <u>Actuarial Study No. 30</u> was for the 1950 Amendments. The present actuarial study does not set forth the estimated costs of the 1952 Amendments; these are available in "Actuarial Cost Estimates for the Old-Age and Survivors Insurance System as Modified by the Social Security Act Amendments of 1952," July 21, 1952, Committee on Ways and Means, House of Representatives.

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A. Introduction

A substantial increase in the level of benefits was perhaps the major change which the Social Security Act Amendments of 1952[1] produced in the Old-Age and Survivors Insurance (OASI) system. For most beneficiaries on the roll in September 1952, this increase is largely effected by means of a "conversion table" appearing in the Amendments, which increased benefits for a retired worker by either $5 or 12½% whichever is larger, with corresponding increases generally for other beneficiaries. For most beneficiaries becoming eligible later, the increase is attributable to a change in the benefit formula. The monthly primary insurance amount is now 55% of the first $100 of average monthly wage (determined from covered earnings after 1950) plus 15% of the next $200 as contrasted with the formula in the 1950 law which used 50% of the first $100 rather than 55%. Under both methods of computing benefits, the minimum primary insurance amount is $25, while maximum family benefits are $168.75 or 80% of average wage if less (but not to be reduced below $45—as contrasted with $40 in the 1950 law).

Several other important changes were made. The amount of covered earnings permitted without suspension of benefits (the so-called "work clause") is raised from $50 per month to $75 per month. Wage credits of $160 for each month of military service are given for such service after the close of World War II and during the present emergency (through calendar year 1953). Provisions are introduced to "freeze" the insured status and benefit amounts of persons who become permanently and totally disabled prior to retirement age. These provisions, however, expire on June 30, 1953 and do not permit applications for disability "freeze" to be filed before then so that actual operation is contingent upon Congressional action next year.

This study is concerned primarily with the mathematical relationships existing between individual and family benefits, and between benefits and the average wages used in determining them. In discussing these, it has sometimes been considered advisable to deal with topics which are not strictly within the scope of this study, in order to avoid excessive use of references to the Act and the Amendments.

Although the interpretations included herein are thought to be accurate, this study is not to be taken as final authority, which of necessity, lies in the law itself and in the official regulations and rulings already existing or to be made hereafter.

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[1] Public Law 590 (82nd Congress, second session).

B. Insured Status

While this study is concerned primarily with the relationships between wages and benefits, it will be appropriate to include a brief summary of the requirements regarding duration and recency of covered employment, or insured status, for those individuals with wage records.

An individual dying before September 1, 1950 is considered to have been "fully insured" if he had not less than one quarter of coverage[2] for each two of the quarters elapsing after 1936, or after the quarter in which he attained the age of twenty-one, whichever is later, and up to but excluding the quarter in which he attained retirement age, or died, whichever first occurred, with a minimum of six quarters of coverage required.

For deaths after August 1950, an individual is fully insured if he has not less than

(a) 1 quarter of coverage, regardless of when acquired, for each 2 of the quarters elapsing after 1950, or after the quarter in which he attained age 21, whichever is later, and up to but excluding the quarter in which he attained age 65 or died, whichever first occurred, with a minimum of 6 quarters of coverage required; or,

(b) 40 quarters of coverage.

2/ In general, a quarter of coverage means a calendar quarter in which an individual has been paid $50 or more in covered wages, or for which, after 1950, he has been credited with $100 or more of self-employment income. Exceptions to this general rule are:

(1) For years prior to 1951, in the case of an individual who was paid wages of $3000 or more in any year, each quarter of that year following his first quarter of coverage is deemed to be a quarter of coverage, except the quarter of death or entitlement to a primary insurance benefit, and subsequent quarters.

(2) For years after 1950, (a) if the wages paid to an individual in a calendar year equal or exceed $3600, each quarter of such year is a quarter of coverage (subject to Clause (c)); (b) if an individual has self-employment income and if his wages plus self-employment income for a taxable year equal $3600, each quarter, any part of which falls in such taxable year is a quarter of coverage (subject to clause (c)); and (c) no quarter is counted as a quarter of coverage prior to the beginning of such quarter, and no quarter after the quarter of death is a quarter of coverage.

When the number of elapsed quarters is odd, such number is reduced by one before calculating the number of quarters of coverage required. It should be emphasized that the required quarters of coverage can be obtained at any time and need not be obtained during the period used for determining the required number. For instance, a person attaining age 21 in 1952 has his requirement measured from then but can obtain the needed quarters of coverage at any time--before 1952 (back to 1937), between ages 21 and 65, and after age 65.

A currently insured individual is one who has not less than six quarters of coverage during the 13-quarter period ending with (1) the quarter in which he died or (2) the quarter in which he became entitled to old-age insurance benefits, which, before the Amendments, were known as primary insurance benefits.

Chart I indicates the insured status required of an individual in order for benefits to be paid, on the basis of his coverage, to the various categories of beneficiaries.

In general terms, the chief eligibility requirements other than those dealing with insured status, for the categories of beneficiaries referred to in Chart I are as follows:

Old-Age insurance benefits are payable to a worker who has reached age 65.

Wife's insurance benefits are payable to the wife of a worker entitled to old-age benefits if she has reached age 65, or if she has in her care a child entitled to a child's insurance benefit based on her husband's wage record.

Husband's insurance benefits are payable to the husband of a worker entitled to old-age benefits if he reached age 65 and was receiving at least half of his support from the worker at the time she became entitled to old-age insurance benefits.

Child's insurance benefits are payable to the child of a deceased worker or of a worker entitled to old-age insurance benefits, if the child is unmarried and under age 18, and if the child was dependent on the worker at the time the worker died or became entitled to old-age insurance benefits, as the case may be (such dependency is presumed to exist for virtually all male workers and for all currently insured women).

Widow's or widower's insurance benefits are payable when such surviving spouse has reached age 65 and has not remarried. Further, for widower's benefits to be payable, the individual must have been either receiving husband's insurance benefits or receiving at least half of his support from his wife at the time of her death.

Chart I

INSURED STATUS OF WAGE EARNER REQUIRED FOR BENEFITS IN VARIOUS BENEFICIARY CATEGORIES

	Fully Insured	Fully or Currently Insured	Fully and Currently Insured	Entitled to Old-Age Insurance Benefits	Entitled to Old-Age Insurance Benefits and Currently Insured
Old-Age Insurance Benefits	*****				
Wife's Insurance Benefits				*****	
Husband's Insurance Benefits					*****
Child's Insurance Benefits					
(1) Supplementary				*****	
(2) Survivor		*****a/			
Widow's Insurance Benefits	*****a/				
Widower's Insurance Benefits			*****b/		
Mother's Insurance Benefits		*****a/			
Parent's Insurance Benefits	*****a/				
Lump-Sum Death Payments		*****b/			

a/ This benefit available for insured deaths occurring after 1939.
b/ This benefit available for all insured deaths occurring after August 1950. For insured deaths occurring after 1939 and prior to September 1950, lump-sum death payments are available only if there is no survivor who is eligible for monthly benefits for the month in which death occurs.

Mother's insurance benefits are payable to a worker's widow if she has not remarried and has in her care a child of such worker entitled to a child's insurance benefit.

Parent's insurance benefits are payable to the parent of a deceased worker who did not leave an eligible widow, widower, or child, and if the parent has reached age 65, was receiving at least half of his support from the worker at the time of his death, and has not remarried since such worker's death.

All types of beneficiary payments are expressed in terms of the primary insurance amount. Thus, a retired worker's monthly benefit is equal to his primary insurance amount, the monthly benefit of the eligible wife of a retired worker is equal to one-half of her husband's primary insurance amount, and so forth. A restriction on the amount of monthly benefits payable under a specific beneficiary category arises in cases of simultaneous entitlement to benefits. For example, an individual entitled to an old-age insurance benefit and to a larger widow's insurance benefit would, in effect, receive the larger widow's benefit (actually, the full old-age benefit would be paid plus a widow's benefit equal to the excess).

Chart II illustrates how various combinations of beneficiaries build up various multiples of an individual's primary insurance amount. There are certain limits on the total amount of monthly benefits which may be paid out on the basis of a single wage record, and for individuals affected by these limits Chart II. will not be applicable. This is discussed more fully hereafter in the section dealing with maximum benefits.

In addition to the monthly benefit payments referred to above, a lump-sum death payment is available when a fully or currently insured individual dies. This is payable to the surviving widow or widower if such surviving spouse was living with such individual at the time of his death. If there is no such widow or widower, payment is made to the person paying the burial expenses, but not to exceed such expenses.

Chart II

BENEFICIARY CATEGORIES ACCORDING TO TOTAL AMOUNT OF BENEFITS PAYABLE

Total Benefits as % of Primary Insurance Amount	Beneficiary Category[a]
75%	1 survivor child; widow; dependent widower or parent
100	old-age beneficiary
125	2 survivor children
150	old-age beneficiary and wife; old-age beneficiary and 1 child; old-age beneficiary and dependent husband
	1 survivor child and mother; 1 survivor child and widow; 1 survivor child and dependent widower; 2 dependent parents
175	3 survivor children
200	old-age beneficiary, wife, and 1 child; old-age beneficiary and 2 children; old-age beneficiary and 1 child and dependent husband
	2 survivor children and mother; 2 survivor children and widow; 2 survivor children and dependent widower
225	4 survivor children; 3 dependent parents; widow, mother, and 1 child (where mother is a former wife divorced)
300	lump-sum death payment

a/ All monthly beneficiaries except mother and child (under 18) must be age 65 or over.

Note: Because of maximum provisions, 235% of the primary insurance amount is the largest family benefit payable. Thus, for beneficiary categories greater than 235%, the family benefit is $45 or 80% of average wage whichever is greater, but not more than $168.75.

C. Method of Determining Primary Insurance Amount

An individual's primary insurance amount is determined by one of two methods. One method involves the use of the new benefit formula or "new start" formula, while the other is based on the old benefit formula or a modification thereof, with the resulting benefit being increased by entering the conversion table set forth in the Amendments. The new start formula is used for determining the primary insurance amount of those individuals who attain or would attain age 22 after 1950 (i.e. born after 1928) and who have at least 6 quarters of coverage after 1950.

For retired workers entitled to a monthly benefit for any month prior to September 1950, or for beneficiaries of a worker dying before that time, the primary insurance amount is determined by entering the conversion table with the primary insurance benefit calculated by the old formula. For other individuals who do not have 6 quarters of coverage after 1950, the primary insurance benefit used for entering the conversion table is based on a modification of the old formula without the 1 percent "increment" for years after 1950. This "increment" is referred to at greater length below in connection with the calculation of the primary insurance amount by the old formula in conjunction with the conversion table.

Finally, there is another group of individuals--those who attained age 22 prior to 1951 and who have at least 6 quarters of coverage after 1950. For these individuals, the primary insurance amount is calculated by whichever of the methods referred to above produces the larger primary insurance amount.

The new benefit formula, like the old one, is expressed in terms of the average monthly wage. Determination of this average monthly wage is therefore necessary before the primary insurance amount can be calculated.

D. Calculation of Average Monthly Wage for Use with New Formula

The average monthly wage used with the new formula is found by dividing (a) the total of all wages and self-employment income after an individual's starting date and prior to his wage and self-employment closing dates, respectively, by (b) the number of months after his starting date and prior to his divisor closing date, excluding the months in any quarter which was prior to the quarter in which he attained age 22 and which was not a quarter of coverage. If the computed number of elapsed months in (b) is less than 18, such number is increased to 18.

By "starting date" is meant either December 31, 1950 or, if later, the day preceding the quarter in which the individual attained the age of 22, whichever produces the higher average monthly wage.

In view of the definition of "starting date" it is apparent that only wages and self-employment income for years after 1950 may be used with the new start formula. Furthermore, wages and self-employment income credited in any one calendar year will not exceed a total of $3600 (except under unusual circumstances involving taxable years which are not calendar years).

The "wage closing date" is the first day of the second quarter preceding the quarter in which an individual dies or becomes entitled to old-age insurance benefits, whichever occurs first.

An individual's "self-employment income closing date" is the first day following the quarter in which his last taxable year ends, provided such year ends before the month in which he died or became entitled to old-age insurance benefits (whichever occurred first) and provided he derived some self-employment income during that year. For purposes of computing an individual's average monthly wage, no self-employment income is to be considered for taxable years ending in or after the month in which he died or became entitled to old-age insurance benefits, whichever first occurred. This provision, section 215(b)(4), is necessary only in instances where an individual's taxable year does not end at the end of a calendar quarter, since in other cases the previous closing date provision accomplishes the same results. For example, suppose an individual's taxable year ends on January 31, 1955, and the individual dies on March 15, 1955; self-employment income in the taxable year ending January 31 would be credited but not that in the subsequent 1½-month taxable year. In this case, the foregoing exclusion clause is necessary in order to adhere to the general principle that for benefit computation purposes (although not necessarily for eligibility purposes) self-employment income in the taxable year of death or entitlement is not to be counted because of the difficulty of promptly obtaining the necessary reports.

The "divisor closing date" is the later of an individual's wage closing date and his self-employment income closing date. It may be possible for the period used in the denominator of the expression for the average monthly wage to extend beyond the period used in the numerator for determining which income is to be included. For example, an individual with self-employment income and with taxable years coinciding with calendar years, who dies or retires in the last quarter of a year, will have a self-employment income closing date of January 1, but his divisor closing date will be April 1 since it is based on the later wage closing date, regardless of whether he had wages as such. In drafting the amendments, it was believed that such very minor anomalies would be preferable to the complexity inherent in a completely consistent treatment.

For any individual who does not apply for his old-age insurance benefit as soon as he is eligible, because he continues working after attaining age 65 and acquiring fully insured status, application of the foregoing rules would serve to reduce his average monthly wage if his wages and self-employment income after becoming eligible were less than they had been before becoming eligible. Therefore, there is the further provision that when an individual becomes entitled to an old-age benefit or dies (without prior entitlement) after the first quarter in which he both was fully insured and had attained retirement age, his closing dates shall be determined in the same manner as if he had been entitled to old-age insurance benefits in such first quarter, provided that use of such earlier closing dates results in a higher average monthly wage.

Inasmuch as an individual's wage closing date will be from 6 to 9 months before the date of his death, or retirement, it is apparent that in some cases a sizeable amount of earnings may be excluded in the calculation of the average monthly wage. This is particularly serious when the number of months used in the denominator of the average wage formula is increased to the minimum of 18 mentioned above. The reason for so providing is to speed up the calculation of benefits without the necessary delay involved in ascertaining the amount of wages paid to the individual in the months immediately preceding death or retirement since such data are not generally available under normal operating procedures. However, upon application at least 6 months after a wage-earner's death or entitlement to monthly benefits, a recomputation will be made, taking into account those wages known as "lag wages", which were previously disregarded (up to the quarter of death or entitlement), and any increase in monthly benefits will be retroactive to the first payment under the current beneficiary category of the person making application. There is no similar provision applicable in the case of self-employment income, which is on an annual basis corresponding to the individual's taxable year.

It will be noted that wages and self-employment income earned prior to the quarter in which age 22 is attained may be included in the numerator of the expression for average wage, whereas in the denominator, months in such quarters which are not quarters of coverage are excluded. Thus, it may be possible for an individual's average monthly wage to exceed $300 (i.e., 1/12th of the taxable maximum of $3600) although in the benefit calculation no more than $300 may be used. More commonly, such income earned before age 22 may serve to increase the average monthly wage, when under $300, based on earnings after that age.

Chart III indicates the various closing dates corresponding to the calendar quarter in which death or retirement occurs. After an individual's average monthly wage has been determined as described above, if it does not happen to be a multiple of $1, it is reduced to the next lower multiple of $1 before being used in the calculation of the primary insurance amount.

The preceding discussion related to the general case. The 1952 Amendments introduced certain special provisions applicable to individuals who die or become entitled to old-age benefits in 1952. These were necessary to correct certain inequities and to simplify administration. One such technical amendment made it possible for these cases to have the benefits recomputed after the end of the year so as to include self-employment income in 1952, which is, of course, the year of death or entitlement in such instances. This is in contrast to the usual rule applicable in the future under which such income cannot be used for benefit computation purposes (although, however, for insured status purposes). A second technical change for 1952 cases allows use of the lag wages in the initial computation of benefits. Unlike the previous change, this will not generally result in any larger amounts being payable, but rather only eliminates the necessity for two separate computations when in most cases the information needed for the later computations is available at the time the first is made.

Chart III

CLOSING DATES USED IN CALCULATION OF AVERAGE MONTHLY WAGE

Closing Date	Quarter of Death or Entitlement to Old-Age Insurance Benefits			
	January–March	April–June	July–September	October–December
For Initial Computation				
Wages	July 1 of previous year	October 1 of previous year	January 1	April 1
Self-Employment Income	January 1	January 1	January 1	January 1
Divisor	January 1*	January 1*	January 1	April 1
For Lag Wage Recomputation				
Wages	January 1	April 1	July 1	October 1
Self-Employment Income	January 1	January 1	January 1	January 1
Divisor	January 1	April 1	July 1	October 1

* Unless individual did not have any self-employment income in previous calendar year, in which case divisor closing date is same as wage closing date.

Note: This chart applicable to self-employment income only when taxable year coincides with calendar year.

E. Calculation of Average Monthly Wage for Use with
Old Formula and Conversion Table

For those individuals who die or become entitled to old-age insurance benefits after August 1950, and whose benefits are to be determined on the basis of the conversion table, the average monthly wage will be computed in the same manner as outlined above, except that the starting date will be December 31, 1936. Thus, calculations based on the conversion table will include all credited wages before 1951 and all wages and self-employment income credited after 1950, the total being averaged over the entire period, starting with 1937, omitting quarters after 1936 which are prior to the quarter of attainment of age 22 if such quarters are not quarters of coverage.

As in the case of average wages for use with the new start formula, wages and self-employment income credited in any year after 1950 will not exceed a total of $3600 in almost all instances; for 1940-50, the maximum wage creditable for any one year is $3000. In any event, the average monthly wage so determined may not exceed $250 for benefit computation purposes.

F. Calculation of Primary Insurance Amount by New Start Formula

The primary insurance amount of an individual from whose wages benefits are to be calculated by the new formula is as follows:

Average Monthly Wage	Primary Insurance Amount
$34 or less	$25
35 to 47	26
48 and over	55% of first $100 of average monthly wage plus 15% of any balance not exceeding $200

This formula is straightforward for average monthly wages of up to $100, but can be put into a more simplified form for calculations where average wages exceed that amount. By an algebraic transformation, the primary insurance amount for average monthly wages of over $100 may be expressed as:

$40 plus 15% of average monthly wage (not exceeding $300)

The results produced by this transformed statement of the formula are of course identical with those obtained by taking 55% of the first $100 of average monthly wage and adding 15% of the excess over $100, but the calculation is somewhat simpler than if the steps taken exactly parallel the wording of the Act.

G. Calculation of Primary Insurance Amount by Old Formula in Conjunction with Conversion Table

When the primary insurance amount is not calculated directly by application of the new formula, it is determined by first calculating the "primary insurance benefit" and then using this benefit to determine the primary insurance amount by means of a conversion table. In this case, the primary insurance benefit is found by following the old formula, according to which the primary insurance benefit is composed of the two parts (a) 40% of the first $50 of average monthly wage plus 10% of any balance not exceeding $200, and (b) 1% of the amount computed in (a) multiplied by the number of years prior to 1951 in which $200 or more of wages were credited. It may be noted that the largest average monthly wage which may be used with the old formula is $250 even when the calculated average wage exceeds that amount. Part (b) of this formula is generally referred to as the "increment". If the primary insurance benefit as calculated is less than $10, it is raised to $10.

As in the case of the new start formula, an algebraic transformation can be made here which will simplify the calculation in part (a) of the formula. For wages of over $50, the amounts produced by application of part (a) may be duplicated by finding the sum of $15 plus 10% of the average monthly wage, not exceeding $250.

The second part of this formula, (b), provides an increase in benefit for each year prior to 1951, in which $200 or more of covered wages were earned, which follows the corresponding provision of the Social Security Act prior to the 1950 Amendments. Omission of this "increment" from the new start formula mentioned above produces benefits which are independent of the actual number of years in covered employment, although the proportion of an individual's working lifetime after the starting date spent in covered employment is taken into account in computing the average wage. This means that with the new formula, benefits for those becoming eligible in future years will be more nearly level (aside from possible fluctuations due to changes in wage level) than if the increment had been retained.

After the primary insurance benefit is determined, the corresponding primary insurance amount is found by means of the conversion table appearing in the Amendments. This conversion table is reproduced in Table 1; intermediate values are obtained by interpolation.

Table 1

CONVERSION TABLE IN 1952 AMENDMENTS

Primary Insurance Benefit	Primary Insurance Amount	Average Monthly Wage for Computing Maximum Benefits
$10	$25.00	$45.00
11	27.00	49.00
12	29.00	53.00
13	31.00	56.00
14	33.00	60.00
$15	$35.00	$64.00
16	36.70	67.00
17	38.20	69.00
18	39.50	72.00
19	40.70	74.00
$20	$42.00	$76.00
21	43.50	79.00
22	45.30	82.00
23	47.50	86.00
24	50.10	91.00
$25	$52.40	$95.00
26	54.40	99.00
27	56.30	109.00
28	58.00	120.00
29	59.40	129.00
$30	$60.80	$139.00
31	62.00	147.00
32	63.30	155.00
33	64.40	163.00
34	65.50	170.00
$35	$66.60	$177.00
36	67.80	185.00
37	68.90	193.00
38	70.00	200.00
39	71.00	207.00
$40	$72.00	$213.00
41	73.10	221.00
42	74.10	227.00
43	75.10	234.00
44	76.10	241.00
$45	$77.10	$250.00
46	77.10	250.00

H. Illustrative Benefits under the Two Methods

When the calculated primary insurance amount is not a multiple of ten cents, it is raised to the next higher multiple of ten cents. Similarly, monthly benefits for categories of beneficiaries other than retired wage earners are also raised to the next higher multiple of ten cents when the calculated amount is not such a multiple. If total monthly benefits exceed the maximum amount permissible (referred to hereafter), this rounding to the next higher multiple of ten cents is done after benefits have been reduced so as to conform to the maximum limits. Some results produced by rounding of benefits are discussed later in this study.

Table 2 indicates for specimen average wages, the primary insurance amounts produced by the new start formula and by the old formula with conversion table. In this table, it has been assumed that the individual was steadily in covered employment since 1936, with the primary benefit used in the conversion table based on 14 increment years.

It is apparent that both methods of calculating primary insurance amounts are of the "bent" type, that is, relatively larger benefits are paid for the lower average monthly wages.

The comparisons in Table 2 indicate the extent to which the conversion table will be applicable in future years. Obviously, for any newly covered individuals the new formula will almost always be applicable, as discussed later. In effect, these comparisons can relate approximately to individuals who were not steadily covered in the past, and whose earnings were of such amounts as to produce a very low average wage for 1937-50.

The illustrative figures shown in Table 2a are based on assumed average monthly wages for the two periods, 1937-50 and after 1950, for an individual dying or retiring at the beginning of 1953. As indicated above, individuals with only a small amount of covered employment in the past may have a very low average wage for 1937-50. It should be noted that not all of the various combinations of assumed wages shown in the tables are equally likely. Thus, the more likely situation, because of extension of coverage and even more so because of rising wage trends is where there is a relatively low wage for 1937-50 with a higher wage after 1950. For example, in a typical case, the 1937-50 average monthly wage might be $100, with the average wage after 1950 being $200. Tables 2b, 2c, and 2d deal with deaths and retirements in later years.

Table 2a

COMPARISON OF PRIMARY INSURANCE AMOUNTS UNDER CONVERSION TABLE
AND UNDER NEW START FORMULA FOR INDIVIDUALS STEADILY COVERED
SINCE 1936 DYING OR RETIRING AT BEGINNING OF 1953

Assumed Average Monthly Wage		Computed Average Monthly Wage for 1937 on	Primary Insurance Amount		Ratio of Conversion Table to New Formula
1937-50	After 1950		Conversion Table	New Formula	
$25	$25	$25	$27.80	$25.00	111%
25	50	28	30.60	27.50	111
25	100	34	35.90	55.00	65
25	200	46	43.50	70.00	62
25	300	59	49.70	85.00	58
$50	$25	$46	$43.50	$25.00	174%
50	50	50	47.10	27.50	171
50	100	56	48.80	55.00	89
50	200	68	52.10	70.00	74
50	300	81	55.10	85.00	65
$100	$25	$90	$57.00	$25.00	228%
100	50	93	57.50	27.50	209
100	100	100	58.70	55.00	107
100	200	112	60.70	70.00	87
100	300	125	62.50	85.00	74
$150	$25	$134	$63.80	$25.00	255%
150	50	137	64.10	27.50	233
150	100	143	64.90	55.00	118
150	150	150	65.80	62.50	105
150	200	156	66.50	70.00	95
150	300	168	68.10	85.00	80
$250	$25	$221	$74.40	$25.00	298%
250	50	225	74.90	27.50	272
250	100	231	75.60	55.00	137
250	200	243	76.90	70.00	110
250	250	250	77.10	77.50	99
250	300	256	77.10	85.00	91

Table 2b

COMPARISON OF PRIMARY INSURANCE AMOUNTS UNDER CONVERSION TABLE AND UNDER NEW START FORMULA FOR INDIVIDUALS STEADILY COVERED SINCE 1936 DYING OR RETIRING AT BEGINNING OF 1960

Assumed Average Monthly Wage		Computed Average Monthly Wage for 1937 on	Primary Insurance Amount		Ratio of Conversion Table to New Formula
1937-50	After 1950		Conversion Table	New Formula	
$25	$25	$25	$27.80	$25.00	111%
25	50	34	35.90	27.50	130
25	100	54	48.20	55.00	88
25	200	93	57.50	70.00	82
25	300	132	63.50	85.00	75
$50	$25	$40	$39.80	$25.00	159%
50	50	50	47.10	27.50	171
50	100	69	52.40	55.00	95
50	200	108	60.00	70.00	86
50	300	147	65.40	85.00	77
$100	$25	$70	$52.60	$25.00	210%
100	50	80	54.90	27.50	200
100	100	100	58.70	55.00	107
100	200	139	64.40	70.00	92
100	300	178	69.40	85.00	82
$150	$25	$101	$58.90	$25.00	236%
150	50	110	60.30	27.50	219
150	100	130	63.20	55.00	115
150	150	150	65.80	62.50	105
150	200	169	68.30	70.00	98
150	300	208	72.90	85.00	86
$250	$25	$162	$67.30	$25.00	269%
250	50	171	68.50	27.50	249
250	100	191	70.90	55.00	129
250	200	230	75.50	70.00	108
250	250	250	77.10	77.50	99
250	300	269	77.10	85.00	91

Table 2c

COMPARISON OF PRIMARY INSURANCE AMOUNTS UNDER CONVERSION TABLE
AND UNDER NEW START FORMULA FOR INDIVIDUALS STEADILY COVERED
SINCE 1936 DYING OR RETIRING AT BEGINNING OF 1970

Assumed Average Monthly Wage		Computed Average Monthly Wage for 1937 on	Primary Insurance Amount		Ratio of Conversion Table to New Formula
1937-50	After 1950		Conversion Table	New Formula	
$25	$25	$25	$27.80	$25.00	111%
25	50	39	39.30	27.50	143
25	100	68	52.10	55.00	95
25	200	125	62.50	70.00	89
25	300	183	70.00	85.00	82
$50	$25	$35	$36.70	$25.00	147%
50	50	50	47.10	27.50	171
50	100	78	54.40	55.00	99
50	200	136	64.00	70.00	91
50	300	193	71.10	85.00	84
$100	$25	$56	$48.80	$25.00	195%
100	50	71	52.80	27.50	192
100	100	100	58.70	55.00	107
100	200	157	66.60	70.00	95
100	300	215	73.80	85.00	87
$150	$25	$78	$54.40	25.00	218%
150	50	92	57.30	27.50	208
150	100	121	61.90	55.00	113
150	150	150	65.80	62.50	105
150	200	178	69.40	70.00	99
150	300	236	76.10	85.00	90
$250	$25	$120	$61.80	$25.00	247%
250	50	134	63.80	27.50	232
250	100	163	67.50	55.00	123
250	200	221	74.40	70.00	106
250	250	250	77.10	77.50	99
250	300	278	77.10	85.00	91

Table 2d

COMPARISON OF PRIMARY INSURANCE AMOUNTS UNDER CONVERSION TABLE
AND UNDER NEW START FORMULA FOR INDIVIDUALS STEADILY COVERED
SINCE 1936 DYING OR RETIRING AT BEGINNING OF 1980

| Assumed Average Monthly Wage | | Computed Average Monthly Wage for 1937 on | Primary Insurance Amount | | Ratio of Conversion Table to New Formula |
1937-50	After 1950		Conversion Table	New Formula	
$25	$25	$25	$27.80	$25.00	111%
25	50	41	40.40	27.50	147
25	100	75	53.70	55.00	98
25	200	143	64.90	70.00	93
25	300	210	73.20	85.00	86
$50	$25	$33	$35.10	$25.00	140%
50	50	50	47.10	27.50	171
50	100	83	55.50	55.00	101
50	200	151	65.90	70.00	94
50	300	218	74.10	85.00	87
$100	$25	$49	$46.10	$25.00	184%
100	50	66	51.60	27.50	188
100	100	100	58.70	55.00	107
100	200	167	68.00	70.00	97
100	300	234	75.90	85.00	89
$150	$25	$65	$51.30	$25.00	205%
150	50	82	55.30	27.50	201
150	100	116	61.20	55.00	111
150	150	150	65.80	62.50	105
150	200	183	70.00	70.00	100
150	300	251	77.10	85.00	91
$250	$25	$98	$58.40	$25.00	234%
250	50	115	61.10	27.50	222
250	100	148	65.50	55.00	119
250	200	216	73.90	70.00	106
250	250	250	77.10	77.50	99
250	300	283	77.10	85.00	91

In all of these tables there are instances where the conversion table is more favorable, but these are generally cases where the future average wage is lower than (or the same as) the past wage, which will be an unusual situation. For more normal cases, where there is a substantial rise in the average monthly wage, the new start formula is more favorable than the conversion table.

There will be some cases where, for newly covered individuals, the conversion table will produce larger primary insurance amounts than the new formula. This results from the fact that, for some of the smaller average monthly wages, the primary insurance amount corresponding to a given wage, obtained by entering the conversion table, exceeds the primary insurance amount obtained by application of the new formula to a somewhat greater wage. For example, an individual dying in January 1953 with total wages of $50 credited in each month after 1950 and prior to July 1952 (and therefore an average monthly wage after 1950 of $50) would have a primary insurance amount of $27.50 according to the new formula. If this individual had attained age 22 in July 1950 (with no covered employment prior to 1951), his average monthly wage over the period starting with the quarter in which he attained age 22 would be $37. With no increment years, this would yield a primary insurance benefit of $14.80 and a primary insurance amount, using the conversion table, of $34.60.

Table 3 compares the primary insurance amounts at retirement age under the two computation methods for new entrants at various ages on January 1, 1951. Those who are close to age 65 on that date will in all cases use the new benefit formula. For those with very low wages who are relatively young at the present time, the conversion table method will be used since it produces a somewhat higher benefit. For instance, for a person age 25 at the beginning of 1951 the conversion table method produces a $12.50 larger benefit for a "new start" average wage of $50, but for average wages of $87 or more the new formula will be more favorable. It will be noted that for this latter case the reduction in the average wage is very slight because only 3 years of zero wages are included for the period prior to 1951.

Table 4 indicates, for individuals with 2, 10, and 14 increment years, the lowest average wage after 1950, which using the new formula, will produce a larger primary insurance amount than will the specimen average wage used with the conversion table. For example, an individual with 14 increment years and an average wage since 1936 of $100 would have a larger primary insurance amount using the conversion table than he would using the new start formula unless his average wage since 1950 was $125 or more.

Table 3

COMPARISON OF PRIMARY INSURANCE AMOUNTS UNDER TWO COMPUTATION METHODS FOR
PERSONS HAVING NO WAGE CREDITS PRIOR TO 1951

Assumed "New Start" Average Wage	Corresponding "Old Start" Average Wage [a]	Primary Insurance Amount on		Ratio
		"New Start" Average Wage	"Old Start" Average Wage	
For Person Attaining Age 65 and Retiring on January 1, 1961				
$50	$20	$27.50	$25.00	110%
100	41	55.00	37.30	147
150	62	62.50	43.90	142
200	83	70.00	48.30	145
250	104	77.50	53.20	146
300	125	85.00	57.20	149
For Person Attaining Age 65 and Retiring on January 1, 1971				
$50	$29	$27.50	$28.20	98%
100	58	55.00	43.20	127
150	88	62.50	49.60	126
200	117	70.00	55.80	125
250	147	77.50	60.40	128
300	176	85.00	64.00	133
For Person Attaining Age 65 and Retiring on January 1, 1981				
$50	$34	$27.50	$32.20	85%
100	69	55.00	45.20	122
150	104	62.50	53.20	117
200	139	70.00	59.30	118
250	174	77.50	63.80	121
300	209	85.00	67.70	126
For Person Attaining Age 65 and Retiring on January 1, 1991				
$50	$46	$27.50	$40.00	69%
100	93	55.00	50.80	108
150	139	62.50	59.30	105
200	186	70.00	65.10	108
250	232	77.50	70.20	110
300	279 [b]	85.00	72.00	118

a/ Based on "new start" average wage prior to rounding being exact amount
shown in the first column.
b/ $250 used.

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Table 4

LOWEST AVERAGE MONTHLY WAGE FOR USE WITH "NEW START" FORMULA WHICH
PROVIDES LARGER PRIMARY INSURANCE AMOUNT THAN WAGE SHOWN FOR USE
WITH CONVERSION TABLE

Wage Used with Conversion Table	Lowest Wage Used with "New Start" Formula which Yields Larger PIA than under Conversion Table with Increments for		
	2 Years	10 Years	14 Years
$25	$47	$50	$51
50	78	83	86
75	87	95	98
100	98	115	125
125	121	141	151
150	145	163	173
175	165	184	194
200	184	204	213
225	203	223	233
250	220	241	248

Tables 5 and 6 indicate the total monthly benefits based on the new start formula which will be payable to family groups of various sizes when expressed as percentages of the primary insurance amount. For the larger family groups, the total benefits are limited in some cases by the maximum provisions--discussed in the next section. Table 5 relates to monthly wages, while Table 6 is in terms of weekly wages. The composition of these groups has been set forth previously in Chart II.

Charts IV and V are nomographs, or computing charts, for determining the primary insurance amount and the family benefits respectively.

Table 5

MONTHLY BENEFITS PAYABLE UNDER "NEW START" FORMULA FOR VARIOUS
BENEFICIARY CATEGORIES

Average Monthly Wage	Beneficiary Category[a]							
	75%	100%	125%	150%	175%	200%	225%	250%[b]

Total Benefits

Average Monthly Wage	75%	100%	125%	150%	175%	200%	225%	250%
$25	$18.80	$25.00	$31.30	$37.50	$43.80	$45.00	$45.00	$45.00
50	20.70	27.50	34.40	41.30	45.00	45.00	45.00	45.00
75	31.00	41.30	51.70	60.00	60.00	60.00	60.00	60.00
100	41.30	55.00	68.80	80.00	80.00	80.00	80.00	80.00
125	44.10	58.80	73.50	88.20	100.00	100.00	100.00	100.00
150	46.90	62.50	78.20	93.80	109.40	120.00	120.00	120.00
175	49.80	66.30	82.90	99.50	116.10	132.60	140.00	140.00
200	52.50	70.00	87.50	105.00	122.50	140.00	157.50	160.00
225	55.40	73.80	92.30	110.70	129.20	147.60	166.10	168.80
250	58.20	77.50	96.90	116.30	135.70	155.00	168.80	168.80
275	61.00	81.30	101.70	122.00	142.30	162.60	168.80	168.80
300	63.80	85.00	106.30	127.50	148.80	168.80	168.80	168.80

Total Benefits as Percentage of Average Monthly Wage

Average Monthly Wage	75%	100%	125%	150%	175%	200%	225%	250%
$25	75%	100%	125%	150%	175%	180%	180%	180%
50	41	55	69	83	90	90	90	90
75	41	55	69	80	80	80	80	80
100	41	55	69	80	80	80	80	80
125	35	47	59	71	80	80	80	80
150	31	42	52	63	73	80	80	80
175	28	38	47	57	66	76	80	80
200	26	35	44	52	61	70	79	80
225	25	33	41	49	57	66	74	75
250	23	31	39	47	54	62	68	68
275	22	30	37	44	52	59	61	61
300	21	28	35	42	50	56	56	56

a/ See Chart II. for beneficiaries included in each group.
b/ Including all categories in excess of 250%.

Note: Total benefits may vary slightly with composition of beneficiary groups due to rounding of benefits.

Table 6

MONTHLY BENEFITS PAYABLE UNDER "NEW START" FORMULA FOR VARIOUS
BENEFICIARY CATEGORIES

Average Weekly Wage[b]	Beneficiary Category[a]							
	75%	100%	125%	150%	175%	200%	225%	250%[c]
$10	$18.80	$25.00	$31.30	$37.50	$43.80	$45.00	$45.00	$45.00
15	26.90	35.80	44.80	52.00	52.00	52.00	52.00	52.00
20	35.50	47.30	59.20	68.80	68.80	68.80	68.80	68.80
25	42.20	56.20	70.30	84.30	86.40	86.40	86.40	86.40
30	44.70	59.50	74.40	89.30	104.00	104.00	104.00	104.00
35	47.10	62.70	78.40	94.10	109.80	120.80	120.80	120.80
40	49.50	66.00	82.50	99.00	115.50	132.00	138.40	138.40
45	52.00	69.30	86.70	104.00	121.30	138.60	156.00	156.00
50	54.30	72.40	90.50	108.60	126.70	144.80	162.90	168.80
55	56.80	75.70	94.70	113.60	132.50	151.40	168.80	168.80
60	59.30	79.00	98.80	118.50	138.30	158.00	168.80	168.80
65	61.70	82.20	102.80	123.30	143.90	164.40	168.80	168.80
70[d]	63.80	85.00	106.30	127.50	148.80	168.80	168.80	168.80

a/ See Chart II. for beneficiaries included in each group.
b/ Weekly wage corresponding to average monthly wage as calculated in accordance with Act.
c/ Including all categories in excess of 250%.
d/ Actually, an average weekly wage of $69.23 equals $300 per month.

Note: Total benefits may vary slightly with composition of beneficiary groups due to rounding of benefits.

Chart IV

OLD-AGE AND SURVIVORS INSURANCE BENEFIT CHART
1952 AMENDMENTS

AVERAGE MONTHLY
WAGE SINCE 1936

$250

225

200

175

150

125

100

75

50

45

40

35

30

25

20

15

10

5

C

AVERAGE
MONTHLY WAGE
SINCE 1950

MONTHLY
PRIMARY
INSURANCE
AMOUNT

$300 — $85

275

80

250

225

75

200 — 70

175

150

65

125

60

100 — 55

90 — 50

80 — 45

70 — 40

60 — 35

50 — 30

35-47 — 25
34 OR
LESS   MINIMUM

Example 1: To find the monthly primary insurance amount for a worker having an average monthly wage since 1936 of $100 and 12 years of coverage prior to 1951: Draw a line connecting $100 on the Average Monthly Wage since 1936 scale with 12 years on the Years of Coverage scale. At the intersection of the line with the Monthly Primary Insurance Amount scale the resulting amount ($58.00) is indicated. The corresponding point on the Average Monthly Wage since 1950 scale ($120) is the average monthly wage for computing the maximum family benefit – in this case $96.00 (80% of $120).

Example 2: To find the monthly primary insurance amount for a worker having an average monthly wage since 1950 of $200: Note the amount ($70.00) on the Monthly Primary Insurance Amount scale opposite the average monthly wage ($200). This amount ($70.00) is applicable unless the amount arising from the average monthly wage since 1936 is larger.

YEARS OF
COVERAGE
PRIOR TO
1951

14

12

10

8

6

4

2

0

PERCENT OF PRIMARY INSURANCE AMOUNT PAYABLE MONTHLY TO BENEFICIARIES:

100% FOR AN ELIGIBLE RETIRED WORKER
75%   „   „   „   WIDOW OR PARENT
50%   „   „   „   WIFE
50% EACH FOR ALL ELIGIBLE CHILDREN PLUS
25% DIVIDED EQUALLY AMONG THE ELIGIBLE SURVIVOR CHILDREN

MAXIMUM TOTAL MONTHLY BENEFIT PAYABLE:

$168.75 OR 80% OF AVERAGE WAGE, WHICHEVER IS
SMALLER, BUT NOT LESS THAN $45.00

MAXIMUM MONTHLY PRIMARY INSURANCE AMOUNT:

$77.10 WHEN USING WAGES SINCE 1936
$85.00   „   „   „   „   1950

FEDERAL SECURITY AGENCY
SOCIAL SECURITY ADMINISTRATION

DIVISION OF THE ACTUARY
AUGUST 1952   N-21

Chart V.

OLD-AGE AND SURVIVORS INSURANCE BENEFIT CHART, 1952 AMENDMENTS

Column scales (left to right):

- **AVERAGE MONTHLY WAGE SINCE 1936**: $250, 225, 200, 175, 150, 125, 100, 75, 50, 45, 40, 35, 30, 25, 20
- **AVERAGE MONTHLY WAGE SINCE 1950**: $300, 275, 250, 225, 200, 175, 150, 125, 100, 90, 80, 70, 60, 50, 35–47, 34 OR LESS
- **MONTHLY PRIMARY INSURANCE AMOUNT**: $85, 80, 75, 70, 65, 60, 55, 50, 45, 40, 35, 30, 25 MINIMUM

PRIMARY WITH:

SPOUSE OR CHILD	TWO CHILDREN OR SPOUSE AND CHILD
$127.50	$168.75
125	160
120	150
115	140
110	130
105	120
100	100
95	80
90	75
85	70
80	65
75	60
70	55
65	50
60	45
55	
50	
45	
40	
37.50	

WIDOW WITH:

NO OTHER BENEFICIARY	ONE CHILD	TWO CHILDREN	THREE OR MORE CHILDREN
$63.75	$127.50	$168.75	$168.75
60	125	160	168.75
55	120	150	160
50	115	140	140
45	110	130	120
40	105	120	100
35	100	100	80
30	95	80	75
25	90	75	70
20	85	70	65
18.75	80	65	50
	75	60	45
	70	55	
	65	50	
	60	45	
	55	37.50	
	50		
	45		
	40		

CHILDREN ALONE:

ONE CHILD	TWO CHILDREN	THREE CHILDREN	FOUR CHILDREN
$63.75	$106.25	$148.75	$168.75
60	100	140	168.75
55	95	130	160
50	90	120	140
45	85	110	120
40	80	100	100
35	75	75	75
30	70	65	65
25	65	50	50
20	60	45	45
18.75	55		
	50		
	45		
	40		
	35		
	31.25		

PARENTS:

ONE PARENT	TWO PARENTS
$63.75	$127.50
60	125
55	120
50	115
45	110
40	105
35	100
30	95
25	90
20	85
18.75	80
	75
	70
	65
	60
	55
	50
	45
	40
	37.50

LUMP SUM DEATH: $255, 250, 240, 230, 220, 210, 200, 190, 180, 170, 160, 150, 140, 130, 120, 110, 100, 90, 80, 75

MONTHLY PRIMARY INSURANCE AMOUNT (right-hand scale): $85, 80, 75, 70, 65, 60, 55, 50, 45, 40, 35, 30, 25

YEARS OF COVERAGE PRIOR TO 1951: 14, 12, 10, 8, 6, 4, 2, 0

Note: Values between $45.00 and the star (☆) represent reductions due to the 80% of average wage maximum.

This chart is used to find the monthly primary insurance amount based on the conversion table and on the new start formula (the larger of which is payable). It is also used to find the total family benefit payable including survivors benefits, if eligible (e.g. by spouse is meant wife over 65, wife under 65 with a child under 18, or dependent husband over 65).

Example 1: To find the monthly primary insurance amount for a worker having an average monthly wage since 1936 of $100 and 12 years of coverage prior to 1951: Draw a line connecting $100 on the Average Monthly Wage since 1936 scale with 12 years on the Years of Coverage scale. At the intersection of the line with the Monthly Primary Insurance Amount scale (left-hand scale) the resulting amount ($58.00) is indicated.

Example 2: To find the monthly primary insurance amount for a worker having an average monthly wage since 1950 of $200: Note the amount ($70.00) on the Monthly Primary Insurance Amount scale (left-hand scale) opposite the average monthly wage ($200). This amount ($70.00) is applicable unless the amount arising from the average monthly wage since 1936 is larger.

Example 3: To find the total family benefit: Draw a horizontal line connecting the monthly primary insurance amount (e.g. $58.00) on the left-hand scale with the same monthly primary insurance amount ($58.00) on the right-hand scale. At the intersection of the horizontal line with the pertinent scale (e.g. widow with one child) the resulting amount ($87.00) is indicated. The category Widow with Three or More Children receives the maximum family benefit. This maximum also applies to the other categories (not included in this chart) namely: Primary with Spouse and Two or More Children, Primary with Three or More Children, and Five or More Children Alone.

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I. Maximum Benefits under the New Start Formula
and the Conversion Table

As mentioned previously, there are certain limits on the amount of monthly benefits which may be paid on the basis of an individual's wage record. The maximum total monthly benefit which may be so paid is as follows:

Average Monthly Wage	Maximum Benefit
$56 and under	$45
$57 - $210	80% of average wage
$211 and over	$168.75

The upper limit of $168.75 represents an increase of 12½% over the 1950 Act's maximum of $150. Likewise, the $40 maximum for the lower benefits was increased by 12½%, to $45.

One point of interest in connection with these limits is that whereas, under the 1939 Act, the limits applied to the total benefits of all beneficiaries, regardless of whether all such benefits were actually payable or had been suspended in part pursuant to the "work clause" or for some other specified reason, under the 1950 and 1952 Amendments the limits are applied only to those benefits actually being paid for a particular month.

The limits referred to above apply in the case of all benefits whether calculated by the new formula or by the conversion table. In this conversion table, which is reproduced in Table 1, there is a column which indicates the average monthly wage, corresponding to each primary insurance benefit, which is to be used for the purpose of fixing the maximum benefits. Within the range where the maximum total benefits depend on the average monthly wage, the average monthly wage has been determined as follows: a wage is found such that application of the new start formula thereto will produce the particular primary insurance amount, and this wage is then rounded to the nearest dollar. This same procedure is followed for PIA's (interpolated linearly) between "even dollar" PIB's so that where the 80% maximum is effective, the same maximum applies for several different PIA's (e.g. the maximum for PIA's of $53.70 to $54.00 inclusive is $78.40, which is 80% of the rounded average monthly wage used for determining maximum benefits of $98). In the 1950 Amendments a different procedure was followed; the average monthly wage for determining maximum benefits for PIB's which were not "even dollars" was obtained by linear interpolation between the average monthly wage figures in the table so that for each PIA there was a different maximum benefit where the 80% of average wage provision applied.

Table 7

COMPARISON OF MAXIMUM FAMILY BENEFITS WITH PRIMARY INSURANCE AMOUNTS AND AVERAGE MONTHLY WAGES ACCORDING TO "NEW START" FORMULA

Average Monthly Wage	Primary Insurance Amount	Maximum Family Benefits	Maximum Benefits as Percent of	
			Primary Insurance Amount	Average Monthly Wage
$25	$25.00	$45.00	180%	180%
50	27.50	45.00	164	90
75	41.30	60.00	145	80
100	55.00	80.00	145	80
125	58.80	100.00	170	80
150	62.50	120.00	192	80
175	66.30	140.00	211	80
200	70.00	160.00	229	80
225	73.80	168.75	229	75
250	77.50	168.75	218	68
275	81.30	168.75	208	61
300	85.00	168.75	199	56

Maximum family benefits under the new start formula, expressed as a percent of average monthly wage, start off at a maximum of 180% for an average wage of $25 and decrease thereafter to 80% for average wages of $57 to $210 and then to a low of 56% for an average wage of $300. Values of these percentages (as well as for maximum benefits expressed as percents of primary insurance amounts) are shown for specimen values of average wage in Table 7.

The ratios of maximum family benefits based on the new start formula to primary insurance amounts start off at 180% for an average wage of $34 or less and drop to a level of 145% which continues for average wages of $57 through $100. As the average wage exceeds $100, the percentages make a sharp and steady rise to 236%, corresponding to an average wage of $210, after which point there is a steady drop to 199% at the maximum creditable average monthly wage of $300. In terms of number of beneficiaries, the 236% figure indicates that for a typical survivor family composed of a widowed mother and children, the largest possible number of eligible children all able to draw full benefit is 2, while if there is a third child, the additional amount payable is only a partial benefit. For average monthly wages of $160 through $296, maximum family benefits exceed twice the primary insurance amount.

Table 8 compares the new primary insurance amounts under the conversion table with the corresponding benefits under the 1950 and 1939 Amendments. It also indicates the relationship between the new maximums on family benefits and the maximums in force under the 1950 Amendments and the 1939 Amendments.

The change in the benefits for a retired worker under the 1952 Amendments from the 1950 Amendments was an increase of $5 or $12\frac{1}{2}\%$ whichever was larger. This resulted in an increase of 25% for primary insurance benefits (under the law prior to the 1950 Amendments) of $10, decreasing to $12\frac{1}{2}\%$ for primary insurance benefits of $21.90 or more.

For primary insurance benefits of $10, the increase over the 1939 Amendments is 150%. Thereafter, the increase is somewhat lower reaching a minimum of 106% for a primary insurance benefit of $22, then rising slightly to 110% for a primary insurance benefit of $25, and then slowly and steadily dropping off to an increase of 69% for a primary insurance benefit of $45.60, which is the largest possible primary insurance benefit (based on an average monthly wage of $250 and 14 increment years). The over-all increase in existing benefits produced by the conversion table when the 1952 Amendments became effective was a rise of approximately 14% in the average benefit for retired workers (the corresponding figure for the 1950 Amendments as compared with the previous law was $77\frac{1}{2}\%$).

Table 8a

COMPARISON OF PRIMARY BENEFITS UNDER CONVERSION TABLE

Primary Insurance Benefit	Primary Insurance Amount Under		Percent Increase in Primary Benefits Under 1952 Amendments over	
	1950 Amendments	1952 Amendments	1939 Amendments	1950 Amendments
$10	$20.00	$25.00	150%	25.0%
15	30.00	35.00	133	16.7
20	37.00	42.00	110	13.5
25	46.50	52.40	110	12.7
30	54.00	60.80	103	12.6
35	59.20	66.60	90	12.5
40	64.00	72.00	80	12.5
45	68.50	77.10	71	12.6

Table 8b

COMPARISON OF MAXIMUM FAMILY BENEFITS UNDER CONVERSION TABLE

Primary Insurance Benefit	Maximum Benefit Under			Percent Increase in Maximum Family Benefit Under 1952 Amendments Over	
	1939 Amendments a/	1950 Amendments	1952 Amendments	1939 Amendments	1950 Amendments
$10	$20.00	$40.00	$45.00	125%	12.5%
15	29.41	48.00	51.20	74	6.7
20	39.22	59.20	60.80	55	2.7
25	50.00	74.40	76.00	52	2.2
30	60.00	101.28	111.20	85	9.8
35	70.00	129.04	141.60	102	9.7
40	80.00	150.00	168.75	111	12.5
45	85.00	150.00	168.75	99	12.5

a/ Assuming, where necessary, that the primary insurance benefit is based on only 2 increment years.

For some ranges of primary insurance benefits, the maximum family benefit under the 1939 Act varied with the amount of increment, whereas in other cases where the maximum was double the primary insurance benefit, or $85, there was no such variation. For instance, a $15 primary insurance benefit could have resulted, on the one hand, from an average monthly wage of $32.69 and a 14% increment, or a somewhat higher average monthly wage and a lower increment, the maximum being different in each case, because it was 80% of wage. The column in Table 8b showing the maximum benefit prior to the 1950 Amendments was determined on the basis of only 2 assumed increments so as to yield, in effect, the highest average monthly wage, and thus, the highest maximum benefit. (In a few rare cases an individual might have qualified for a very low primary insurance benefit with less than 2 increment years; for instance, with no increment years, by having 3 quarters with wages of $50 in both 1939 and in 1940). However, in this table this variable maximum benefit for a given primary insurance benefit applies only where the primary insurance benefit is $20 or less.

The maximum family benefit under the conversion table for the 1952 Amendments is in all cases higher than that under the 1950 Amendments. There is an increase of 12½% for those with primary insurance benefits of $12.48 or less and $39.45 or more (due to increasing the $40 and $150 maximums by 12½%). Between these amounts the increase is somewhat less, being only 2.2% for primary insurance benefits between $21.83 and $26.28. In this range, disregarding slight variations due to rounding procedures, the 1950 maximum is 1.6 times the primary insurance amount under the 1950 Amendments, and the 1952 maximum is 1.636 times such amount. Furthermore, the increase is less than $5 or 12½% of the 1950 primary insurance amount (whichever is greater) for primary insurance benefits between $12.49 and $26.88 (i.e. for primary insurance amounts of $25.10 to $49.80 under the 1950 Amendments). Accordingly, for a retired worker with sufficient eligible dependents to be affected by the maximum provisions, based only on these provisions the retired worker would have received an increase of $5 or 12½% whichever is larger, and the separate checks for the dependents would have been reduced. To prevent this, for those on the rolls at the time the benefit increase was made (September 1952), section 2(d)(1) of the 1952 Amendments provided that no individual benefits would be lowered. For example, consider a retired worker with a wife and child whose primary insurance benefit was $21.85 and whose primary insurance amount under the 1950 Amendments was $40.00 (for which the maximum family benefit was $64.00); thus the wife and child each received $12.00 under the 1950 Amendments. Under the 1952 Amendments the primary insurance amount is increased to $45.00 (for which the maximum family benefit is $65.60); thus the wife's and child's benefits remain at $12.00 because of this provision instead of being reduced to $10.30. However, for those coming on the rolls after September 1952 the amounts payable in the example given would be $45.00 for the retired worker and $10.30 apiece for the wife and child.

For a $10 primary insurance benefit the maximum benefit arising under the 1952 conversion table is 125% higher than the maximum under the 1939 Act. As the primary insurance benefit becomes larger, the percentage increase drops off reaching a trough at 49% for a primary insurance benefit of $22. Following this, there is a gradual rise until for a primary insurance benefit of $39.50, the increase in the maximum benefit is 114%. Thereafter, the percentage increase becomes smaller until for a primary insurance benefit of $42.50 or more, it is 99%.

In using the conversion table it will be noted that there are a number of instances where the actual average monthly wage (used for determining the primary insurance benefit) is larger than the average monthly wage used for computing maximum benefits (as determined from the conversion table). It might be expected that the conversion table, which always increases the primary benefit would likewise always increase the average wage used for determining maximum benefits. This situation will be of some interest until such time as the "new start" formula, under which the two average monthly wages are, of course, the same, comes into general use.

No beneficiary will be at a disadvantage in using the conversion table as compared with the 1939 law, since, despite the use of a lower average monthly wage for determining the maximum benefit (under the 80% rule), the resulting maximum is higher because of the elimination of the previous maximums of $85 and twice the primary insurance benefit. Moreover, if both the average wages are over $210 it is immaterial whether one is higher than the other since the $168.75 maximum is applicable.

Table 9 shows the average monthly wage used for determining maximum benefits corresponding to various actual average monthly wages (used for determining primary insurance benefits) for 2, 10, and 14 increment years. It is apparent that for the smaller values of actual wages, the actual wage is well below the average wage for maximum benefits.

One factor which will serve to reduce the number of cases where this anomaly of the two wages is present is that a large part of the benefits determined by the conversion table in the future will be based on the larger numbers of increment years. In such cases the actual average wage used for determining the primary insurance benefit less frequently exceeds the average wage used for determining maximum benefits. Also important is the $168.75 limit on family benefits, which applies if the average wage for maximum benefits is over $210. This will further reduce the area in which the relative size of the two wages is of any concern.

Table 9

COMPARISON OF AVERAGE MONTHLY WAGE USED FOR CALCULATING PRIMARY
INSURANCE BENEFITS WITH AVERAGE MONTHLY WAGE
USED FOR DETERMINING MAXIMUM BENEFITS

Average Wage For Primary Insurance Benefit	Average Wage for Maximum Benefits[a], when Primary Benefit based on Increments for		
	2 Years	10 Years	14 Years
$25	$45.80	$49.00	$50.60
50	77.20	82.00	85.20
75	85.80	94.00	97.60
100	97.00	114.50	124.50
125	120.50	141.00	149.80
150	143.80	163.00	171.40
175	164.10	183.00	193.40
200	182.60	203.50	212.40
225	201.80	222.50	232.30
250	219.40	241.00	250.00

[a] According to conversion table in 1952 Amendments.

Referring back to the conditions under which a particular method of calculating benefits is to be used, it will be remembered that for those individuals with at least 6 quarters of coverage after 1950 who attained age 22 before 1951, benefits are to be calculated by the new start formula or by the conversion table, depending on which method results in the larger primary insurance amount. Also, it may be seen from either Table 2 or Table 4 that only very rarely will a given average monthly wage produce exactly the same primary insurance amount under the conversion table as under the new start formula. In considering the subject of maximum family benefits the question may therefore arise as to whether in any case it is possible for the conversion table to produce the higher primary insurance amount, with the new start formula producing the higher maximum family benefit, or vice versa. This inconsistency cannot occur, since, if the average monthly wage used for determining maximum benefits in the conversion table is less than $211 (at which point the maximum family benefit becomes a constant $168.75) the conversion table is so constructed that the primary insurance amounts shown therein are the same (aside from slight differences introduced by rounding) as those produced by applying the new start formula to the average monthly wage used for purposes of computing maximum benefits.

J. Rounding of Benefits

In order to facilitate administration, the 1950 and 1952 Amendments provide for a considerable amount of rounding in the benefit computations. These rounding conditions which have been referred to above are quite thoroughly spelled out in the law, and it is of interest to see how they work out in particular cases. The following discussion relates generally to the "new start" formula, although it is largely applicable to individuals whose primary insurance amounts are determined under the conversion table.

As a specific example, we may consider an individual who has a "new start" average monthly wage falling between $111.00 and $111.99 as initially calculated. It is first provided that this amount shall be rounded down to the next lower multiple of a dollar, that is, to $111. According to the benefit formula, the primary insurance amount is computed to be $56.65, which in turn, is rounded to the next higher multiple of ten cents, or $56.70. The maximum family benefit is 80% of the average wage or $88.80.

It may be noted that for the "new start" benefit provisions, because of the rounding of the average wage, there will not be a primary insurance amount corresponding to each multiple of ten cents; in other words, there will be some "impossible" values. For instance, there can never be a primary insurance amount of $56.60, as indicated in the following table:

Average Monthly Wage	Primary Insurance Amount
$110	$56.50
111	56.70
112	56.80

Turning back to the individual with the $111 average monthly wage, a $56.70 primary insurance amount, and an $88.80 family benefit maximum, let us consider how survivor benefits are calculated if he leaves a widow and children. First, as indicated in the first three columns of Table 10, the benefits for each beneficiary are obtained by applying to the primary insurance amount the appropriate benefit proportion, that is, 75% for the widow and 50% for each child plus an extra percentage for each child equal to 25% divided equally among the child beneficiaries.

If the resulting total family benefits are less than the maximum, as is the case only for the first group shown in Table 11, then each of the individual benefits is rounded up to the next dime. However, where the total is greater than the maximum, each benefit is

Table 10

ILLUSTRATIONS OF CALCULATION OF SURVIVOR BENEFITS FOR AVERAGE MONTHLY WAGE OF $111
BY "NEW START" FORMULA

Beneficiary Group	Prior to Maximum or Rounding			After Maximum but Prior to Rounding a/			After Maximum and Rounding		
	Widow	Each Child	Total Family	Widow	Each Child	Total Family	Widow	Each Child	Total Family
Widow and 1 child	$42.53	$42.53	$85.06	*	*	*	$42.60	$42.60	$85.20
Widow and 2 children	42.53	35.44	113.41	$33.30	$27.75	$88.80	33.30	27.80	88.90
Widow and 3 children	42.53	33.08	141.77	26.64	20.72	98.80	26.70	20.80	89.10
Widow and 4 children	42.53	31.89	170.09	22.20	16.65	88.80	22.20	16.70	89.00
Widow and 5 children	42.53	31.19	198.48	19.03	13.95	88.78	19.10	14.00	89.10
Widow and 6 children	42.53	30.71	226.79	16.65	12.02	88.77	16.70	12.10	89.30
Widow and 7 children	42.53	30.38	255.19	14.80	10.57	88.79	14.80	10.60	89.00
Widow and 8 children	42.53	30.12	283.49	13.32	9.43	88.76	13.40	9.50	89.40
Widow and 9 children	42.53	29.93	311.90	12.11	8.52	88.79	12.20	8.60	89.60
Widow and 10 children	42.53	29.77	340.23	11.10	7.77	88.80	11.10	7.80	89.10

* Maximum not applicable.
a/ Differences between total family benefit indicated and maximum of $88.80 are due to taking each individual benefit to nearest whole cent.

reduced proportionately in the ratio of the maximum benefit to the preliminary total family benefits. (If there is a benefit payable to a retired worker, his amount is not reduced, but rather all others are reduced sufficiently to bring the total down to the maximum total benefit.) The second group of three columns shows these proportionately reduced figures. It may be noted that in some instances the total differs slightly from the maximum of $88.80 because of the necessity of rounding each benefit to the nearest cent. (In practice, amounts of exactly $\frac{1}{2}$ cent or more are rounded up, and all other amounts are rounded down).

Finally, as shown in the last three columns, each of the resulting reduced benefits obtained previously which is not a multiple of ten cents is rounded up to the next higher ten cents. It will be observed that the total family benefits will frequently exceed, by small amounts, the actual calculated maximum. Thus, in this particular case, such excess ranges from 10 cents to as much as 80 cents for a very large family.

This results in a minor peculiarity which may have been noted previously in Table 5, namely, that in certain instances, smaller families will get slightly larger benefits than some larger families. For instance, in one case considered in Table 10 the benefit for a 6-child family is 30 cents larger than for a 7-child family.

Also there might be a slight question concerning that section of the Amendments[3]/ which provides that if the maximum is applicable, and the work clause is operating against one or more of the family group, the payments (either reduced or unchanged, as required) shall be continued to those who work rather than be suspended with a corresponding increase to the other beneficiaries. This, of course, is desirable for administrative simplicity. It would therefore seem both against the purpose of the law and against reasonable administrative procedure in such cases, for the benefits to be varied to reflect the small differences indicated in the last column of Table 10 for families of different size. In other words, specifically for the case indicated, in a 7-child family the total family benefits of $89.00 would be payable so long as the widow and at least 2 children were not affected by the work clause.

One further point of interest which may be noted in this connection is that for different groups of beneficiaries which each add

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3/ Sec. 203(h) provides that deductions because of the work clause shall be made from the benefits to which an individual is entitled only to the extent that they reduce the total amount which would otherwise be paid, on the basis of the same wages and self-employment income, to him and the other individuals living in the same household.

up to the same total percentage of primary insurance amount, the total monthly benefits may differ by small amounts due to the effects of rounding individual benefits. For example, in Chart I, it is shown that a retired worker and eligible wife will draw a total benefit of 150% of the primary insurance amount, while a surviving widow and child will be entitled to the same percentage. For an average monthly wage of $150 used with the new start formula, the retired worker and wife will receive a total monthly benefit of $86.30, while the widow and child, entitled to the same total percentage of primary insurance amount, will receive $86.40, the difference in the total amount resulting from rounding of the individual benefits.

Further, it may be of interest to consider the actual exact maximum family benefit when the $45 maximum is applicable (for average wages of $56 and less) and when the $168.75 maximum is applicable (for average wages of $211 or more). In each of these two groups, there is the same maximum family benefit--regardless of the average wage or the primary insurance amount. The following table indicates the particular maximums for a widow and various numbers of children:

Beneficiary Group	Family Benefit Where $45 Maximum is Applicable	Family Benefit Where $168.75 Maximum is Applicable
Widow and 2 Children	$45.10	$168.90
Widow and 3 Children	45.00	168.90
Widow and 4 Children	45.30	169.00
Widow and 5 Children	45.20	169.20
Widow and 6 Children	45.10	169.10
Widow and 7 Children	45.30	168.90
Widow and 8 Children	45.20	169.40
Widow and 9 Children	45.80	168.90
Widow and 10 Children	45.70	169.10

It will be observed that as in the previous specific case, the total family benefit will exceed the particular exact maximum by small amounts which, of course, are never greater than 10 cents per beneficiary.

The 1952 Amendments contain special provisions, section 6(e), for rounding benefits for those on the roll when the increase in benefits first went into effect (September 1952). For this large group, in order to facilitate the conversion of the benefits, these provisions were introduced to provide for administrative simplicity such that automatic machine methods could be used rather than individual recomputation in each case. The result of this procedure produced benefits substantially the same, always within 10 cents, as those which would have been obtained by individual recomputation. The very slight anomalies resulting are, of course, far more than counterbalanced by the administrative savings and the advantages of time saving so that the converted benefits

could be paid promptly. As in many other matters, the principle of strict individual equity with accuracy to the nearest penny can not be applied to a broad social insurance program with such a large scope of coverage.

In particular, the problem was that individual checks are sent out to most categories of beneficiaries. The only information available for each beneficiary without going back to the individual files is the amount of the monthly payment and the number and type of other beneficiaries based on the same wage record. Because of the rounding provisions under the 1950 Amendments, dependent and survivor beneficiaries could receive the same payment, but the primary insurance amount on which it was based would be different. For instance, a wife could have been getting $27.60, while the PIA her husband was receiving could have been either $55.10 or $55.20. Under the 1952 Amendments, these PIA's are increased to $62.00 and $62.10, respectively, which by individual computation would result in wife's benefits of $31.00 and $31.10, respectively (and this is just what is paid for persons coming on the roll after August 1952). In this case, in converting the benefits it would have been very costly and time-consuming to have checked back to the individual files to determine for wife's benefits of $27.60 under the 1950 Amendments whether they were based on PIA's of $55.10 or $55.20. Accordingly, it was provided that in all such cases it should be presumed that the wife's benefit was based on the higher of the two possible PIA's so that in this example the wife's benefit under the 1952 Amendments in all cases would be taken as $31.10.

In the example given above, and in perhaps most cases, this special rounding provision resulted in a slight advantage to the beneficiaries. However, there are some cases where the reverse situation occurs, namely, when the maximum benefit provisions apply. Under the 1950 Amendments, a wife's benefit of $24.10 resulted from PIA's of either $48.10 and $48.20. Under the 1952 Amendments, these PIA's were increased, respectively, to $54.20 and $54.30 with the maximum family benefit in both instances being $79.20 (because of the provision described previously that the average monthly wage for maximum benefit purposes is rounded to even dollars and, therefore, the same maximum applies for several different PIA's). Accordingly, for those coming on the roll after August 1952, the wife's benefit for a $54.20 PIA is $25.00, while for a $54.30 PIA it is $24.90, so that the same total family benefits result in both cases. However, for those on the roll in August 1952 the special provision of section 6(e) results in wife's benefits of $24.10 under the 1950 Amendments being assumed to relate to PIA's of $48.20 under the 1950 Amendments even though it might have arisen from a primary insurance amount of $48.10. Accordingly, in all such instances, under the 1952 Amendments the wife's benefit is $24.90, even though recomputation based on the individual folders would have resulted in some of these being 10 cents higher (i.e. for PIA's under the 1950 Amendments of $48.10). Again, as indicated previously, strict individual precision is not administratively feasible and is not really necessary in a broad social insurance program.

K. Level Premium Costs of Individual Benefits

Table 11 shows the level premium cost as percent of assumed level monthly wage for various wages and retirement ages. The assumptions underlying these figures are as follows:

(1) Level monthly wages from age at entry to retirement age.

(2) For the married cases, the man is married at age 24 to a woman age 19.

(3) For the cases involving children, they are born at the man's age 25, 30, and 35 (when applicable).

(4) No mortality for the children.

(5) Remarriage rates, based on 150% of the American Remarriage Table, for termination of mother's and widow's benefits.

(6) The wife not an old-age beneficiary in her own right.

(7) Benefit provisions, mortality rates, and interest rates for the several "Valuation Bases" are indicated in the table.

Tables 11a, 11b, and 11c show the cost for retirement age 65. Tables 11d, 11e, and 11f show the cost for retirement age 68. Tables 11a and 11d are for level wages of $100. Tables 11b and 11e are for level wages of $200, and Tables 11e and 11f are for level wages of $300.

Valuation basis A is identical to that shown in Actuarial Study No. 30 and is for the 1950 Amendments. This was included in this study so a comparison could be made between the present Act (1952 Amendments) and the previous Act (1950 Amendments). In all cases the cost shown for the present Act is more than for the previous Act with the same valuation basis for each of the wages shown. However, due to the recent increase in wage levels there are larger percentages of individuals in the higher wage brackets (and correspondingly a smaller percentage in the lower wage brackets). As a result, the average cost for the entire coverage is roughly the same under the present Act as it was under the previous Act.

Valuation basis C when compared with basis B shows the effect of the decided improvement in mortality in recent years. Valuation basis D when compared with basis C shows the effect of assuming improved mortality in the future. The generation mortality used in

LEVEL PREMIUM COSTS OF BENEFITS AS PERCENT OF ASSUMED
LEVEL MONTHLY WAGE OF $100 AND RETIREMENT AGE 65

Valuation Basis	Single Male	Single Female	Married Male			
			No Children	1 Child	2 Children	3 Children
			Age 20 at Entry			
A	3.64%	4.49%	5.95%	6.71%	7.21%	7.61%
B	4.00	4.94	6.55	7.37	7.89	8.47
C	4.22	5.56	7.14	7.75	8.17	8.70
D	5.17	6.19	8.38	8.94	9.36	9.86
E	6.71	8.06	11.06	11.60	11.96	12.44
			Age 30 at Entry in 1951			
A	5.77	7.06	9.43	10.04	10.78	11.83
B	6.35	7.77	10.43	11.09	11.85	12.77
C	6.66	8.68	11.29	11.79	12.41	13.26
			Age 40 at Entry in 1951			
A	10.07	12.13	16.10	16.13	16.47	17.86
B	11.07	13.34	18.23	18.27	18.79	20.03
C	11.56	14.79	19.60	19.64	20.10	21.18
			Age 50 at Entry in 1951			
A	21.31	25.02	33.69	33.69	33.69	33.79
B	23.44	27.52	38.25	38.25	38.25	38.36
C	24.32	30.16	40.82	40.82	40.82	40.96
			Age 60 at Entry in 1951			
B	92.31	104.21	143.96	143.96	143.96	143.96
C	95.05	112.38	153.40	153.40	153.40	153.40

Description of Valuation Bases:

A 1950 Amendments, 1939-41 U.S. White Mortality, 3% interest.
B 1952 Amendments, 1939-41 U.S. White Mortality, 3% interest.
C 1952 Amendments, 1948 U.S. White Mortality, 3% interest.
D 1952 Amendments, 1948 Generation Mortality, 3% interest.
E 1952 Amendments, 1948 Generation Mortality, $2\frac{1}{4}$% interest.

Note: Cost of survivor benefits based on death of wage earner before re-
tirement is included where applicable. See text for demographic
assumptions.

LEVEL PREMIUM COSTS OF BENEFITS AS PERCENT OF ASSUMED
LEVEL MONTHLY WAGE OF $200 AND RETIREMENT AGE 65

Valuation Basis	Single Male	Single Female	Married Male			
			No Children	1 Child	2 Children	3 Children

Age 20 at Entry

Valuation Basis	Single Male	Single Female	No Children	1 Child	2 Children	3 Children
A	2.36%	2.92%	3.86%	4.36%	4.76%	5.06%
B	2.55	3.14	4.17	4.71	5.13	5.70
C	2.69	3.54	4.55	4.95	5.29	5.73
D	3.29	3.94	5.33	5.69	6.02	6.43
E	4.27	5.13	7.04	7.39	7.69	8.08

Age 30 at Entry in 1951

A	3.75	4.59	6.13	6.52	7.10	7.85
B	4.04	4.94	6.64	7.07	7.69	8.60
C	4.24	5.52	7.19	7.52	8.02	8.72

Age 40 at Entry in 1951

A	6.54	7.88	10.47	10.49	10.70	11.67
B	7.05	8.49	11.61	11.63	11.99	12.91
C	7.36	9.41	12.47	12.50	12.80	13.61

Age 50 at Entry in 1951

A	13.85	16.26	21.90	21.90	21.90	21.96
B	14.91	17.51	24.34	24.34	24.34	24.41
C	15.48	19.19	25.98	25.98	25.98	26.07

Age 60 at Entry in 1951

B	58.74	66.32	91.61	91.61	91.61	91.61
C	60.49	71.51	97.62	97.62	97.62	97.62

Description of Valuation Bases:

A 1950 Amendments, 1939-41 U.S. White Mortality, 3% interest.
B 1952 Amendments, 1939-41 U.S. White Mortality, 3% interest.
C 1952 Amendments, 1948 U.S. White Mortality, 3% interest.
D 1952 Amendments, 1948 Generation Mortality, 3% interest.
E 1952 Amendments, 1948 Generation Mortality, $2\frac{1}{4}$% interest.

Note: Cost of survivor benefits based on death of wage earner before retirement is included where applicable. See text for demographic assumptions.

LEVEL PREMIUM COSTS OF BENEFITS AS PERCENT OF ASSUMED
LEVEL MONTHLY WAGE OF $300 AND RETIREMENT AGE 65

Valuation Basis	Single Male	Single Female	Married Male			
			No Children	1 Child	2 Children	3 Children

Age 20 at Entry

Valuation Basis	Single Male	Single Female	No Children	1 Child	2 Children	3 Children
A	1.94%	2.40%	3.17%	3.58%	3.88%	4.10%
B	2.06	2.55	3.37	3.80	4.15	4.53
C	2.17	2.86	3.67	3.99	4.27	4.60
D	2.66	3.19	4.32	4.61	4.88	5.19
E	3.45	4.15	5.69	5.97	6.22	6.51

Age 30 at Entry in 1951

Valuation Basis	Single Male	Single Female	No Children	1 Child	2 Children	3 Children
A	3.08	3.77	5.03	5.35	5.80	6.36
B	3.27	4.00	5.37	5.72	6.22	6.82
C	3.43	4.47	5.82	6.09	6.49	7.02

Age 40 at Entry in 1951

Valuation Basis	Single Male	Single Female	No Children	1 Child	2 Children	3 Children
A	5.37	6.47	8.59	8.61	8.78	9.55
B	5.70	6.87	9.39	9.41	9.69	10.43
C	5.95	7.62	10.09	10.11	10.36	11.01

Age 50 at Entry in 1951

Valuation Basis	Single Male	Single Female	No Children	1 Child	2 Children	3 Children
A	11.36	13.34	17.97	17.97	17.97	18.02
B	12.07	14.17	19.70	19.70	19.70	19.76
C	12.53	15.54	21.03	21.03	21.03	21.10

Age 60 at Entry in 1951

Valuation Basis	Single Male	Single Female	No Children	1 Child	2 Children	3 Children
B	47.55	53.68	74.16	74.16	74.16	74.16
C	48.96	57.89	79.01	79.01	79.01	79.01

Description of Valuation Bases:

A 1950 Amendments, 1939-41 U.S. White Mortality, 3% interest.
B 1952 Amendments, 1939-41 U.S. White Mortality, 3% interest.
C 1952 Amendments, 1948 U.S. White Mortality, 3% interest.
D 1952 Amendments, 1948 Generation Mortality, 3% interest.
E 1952 Amendments, 1948 Generation Mortality, 2½% interest.

Note: Cost of survivor benefits based on death of wage earner before re-
tirement is included where applicable. See text for demographic
assumptions.

Table 11d

LEVEL PREMIUM COSTS OF BENEFITS AS PERCENT OF ASSUMED
LEVEL MONTHLY WAGE OF $100 AND RETIREMENT AGE 68

Valuation Basis	Single Male	Single Female	Married Male			
			No Children	1 Child	2 Children	3 Children
			Age 20 at Entry			
A	2.60%	3.28%	4.87%	5.61%	6.11%	6.50%
B	2.86	3.61	5.36	6.17	6.67	7.24
C	3.04	4.13	5.90	6.50	6.91	7.43
D	3.84	4.69	7.05	7.61	8.03	8.53
E	5.03	6.16	9.38	9.90	10.26	10.72
			Age 30 at Entry in 1951			
A	4.08	5.10	7.62	8.21	8.94	9.95
B	4.49	5.61	8.45	9.09	9.82	10.72
C	4.74	6.37	9.23	9.72	10.31	11.14
			Age 40 at Entry in 1951			
A	6.94	8.54	12.67	12.69	13.00	14.33
B	7.64	9.39	14.43	14.46	14.96	16.13
C	8.03	10.57	15.64	15.68	16.11	17.14
			Age 50 at Entry in 1951			
A	13.85	16.57	24.94	24.94	24.94	25.03
B	15.24	18.22	28.50	28.50	28.50	28.60
C	15.93	20.27	30.68	30.68	30.68	30.80
			Age 60 at Entry in 1951			
B	45.67	52.37	80.97	80.97	80.97	80.97
C	47.40	57.26	87.22	87.22	87.22	87.22

Description of Valuation Bases:

A 1950 Amendments, 1939-41 U.S. White Mortality, 3% interest.
B 1952 Amendments, 1939-41 U.S. White Mortality, 3% interest.
C 1952 Amendments, 1948 U.S. White Mortality, 3% interest.
D 1952 Amendments, 1948 Generation Mortality, 3% interest.
E 1952 Amendments, 1948 Generation Mortality, 2½% interest.

Note: Cost of survivor benefits based on death of wage earner before re-
tirement is included where applicable. See text for demographic
assumptions.

LEVEL PREMIUM COSTS OF BENEFITS AS PERCENT OF ASSUMED
LEVEL MONTHLY WAGE OF $200 AND RETIREMENT AGE 68

Valuation Basis	Single Male	Single Female	Married Male			
			No Children	1 Child	2 Children	3 Children
			Age 20 at Entry			
A	1.69%	2.14%	3.16%	3.65%	4.04%	4.34%
B	1.82	2.30	3.41	3.94	4.35	4.91
C	1.93	2.63	3.75	4.14	4.48	4.91
D	2.44	2.98	4.48	4.84	5.17	5.58
E	3.20	3.92	5.97	6.31	6.60	6.99
			Age 30 at Entry in 1951			
A	2.65	3.31	4.96	5.34	5.90	6.63
B	2.85	3.57	5.37	5.79	6.39	7.27
C	3.02	4.05	5.88	6.20	6.68	7.36
			Age 40 at Entry in 1951			
A	4.51	5.55	8.23	8.25	8.46	9.37
B	4.86	5.97	9.18	9.20	9.54	10.41
C	5.11	6.73	9.95	9.97	10.27	11.03
			Age 50 at Entry in 1951			
A	9.00	10.77	16.21	16.21	16.21	16.27
B	9.70	11.60	18.14	18.14	18.14	18.21
C	10.14	12.90	19.53	19.53	19.53	19.61
			Age 60 at Entry in 1951			
B	29.06	33.33	51.52	51.52	51.52	51.52
C	30.16	36.44	55.50	55.50	55.50	55.50

Description of Valuation Bases:

A 1950 Amendments, 1939-41 U.S. White Mortality, 3% interest.
B 1952 Amendments, 1939-41 U.S. White Mortality, 3% interest.
C 1952 Amendments, 1948 U.S. White Mortality, 3% interest.
D 1952 Amendments, 1948 Generation Mortality, 3% interest.
E 1952 Amendments, 1948 Generation Mortality, 2¼% interest.

Note: Cost of survivor benefits based on death of wage earner before re-
tirement is included where applicable. See text for demographic
assumptions.

LEVEL PREMIUM COSTS OF BENEFITS AS PERCENT OF ASSUMED
LEVEL MONTHLY WAGE OF $300 AND RETIREMENT AGE 68

Valuation Basis	Single Male	Single Female	Married Male			
			No Children	1 Child	2 Children	3 Children

Age 20 at Entry

A	1.39%	1.75%	2.59%	2.99%	3.29%	3.51%
B	1.47	1.86	2.76	3.19	3.52	3.89
C	1.57	2.13	3.04	3.36	3.63	3.95
D	1.98	2.42	3.64	3.93	4.20	4.51
E	2.59	3.17	4.83	5.11	5.34	5.63

Age 30 at Entry in 1951

A	2.17	2.72	4.07	4.38	4.82	5.36
B	2.31	2.89	4.35	4.69	5.17	5.76
C	2.44	3.28	4.75	5.01	5.40	5.91

Age 40 at Entry in 1951

A	3.70	4.55	6.76	6.77	6.94	7.67
B	3.93	4.84	7.43	7.46	7.72	8.42
C	4.14	5.44	8.06	8.08	8.32	8.93

Age 50 at Entry in 1951

A	7.39	8.83	13.30	13.30	13.30	13.35
B	7.85	9.39	14.68	14.68	14.68	14.73
C	8.21	10.44	15.81	15.81	15.81	15.88

Age 60 at Entry in 1951

B	23.53	26.98	41.71	41.71	41.71	41.71
C	24.42	29.49	44.93	44.93	44.93	44.93

Description of Valuation Bases:

A 1950 Amendments, 1939-41 U.S. White Mortality, 3% interest.
B 1952 Amendments, 1939-41 U.S. White Mortality, 3% interest.
C 1952 Amendments, 1948 U.S. White Mortality, 3% interest.
D 1952 Amendments, 1948 Generation Mortality, 3% interest.
E 1952 Amendments, 1948 Generation Mortality, 2½% interest.

Note: Cost of survivor benefits based on death of wage earner before retirement is included where applicable. See text for demographic assumptions.

basis D is the same as that used for the low mortality projections of the U.S. population shown in Actuarial Study No. 33. Valuation basis E shows the effect of a reduction in the assumed rate of interest. In general the relative cost increases with a reduction in mortality, interest, level wage, or period from 1951 to age 65.

Table 12 shows the level premium cost as percent of payroll for an individual entering covered employment at age 20 and terminating covered employment at various ages. Separate figures are shown for a single male and for a married male with no children. As before, a level wage during the period of coverage is assumed. The valuation basis here is 1939-41 U.S. White mortality and 3% interest. Other valuation bases were not included since these costs are shown only to clarify the relative effect on costs if individuals are in covered employment for only a portion of the possible years between ages 20 and 65.

The figures shown for withdrawal at age 65 are identical with those shown in Table 11 for valuation basis B. In general, the figures for continuous coverage from age 20 fall in between those for partial coverage. The reason for the relatively high cost for the short coverage cases is due to the effect of both the $25 minimum benefit and the bent benefit formula applying. For instance, considering the single man with a $100 wage, the level premium decreases from almost 5% of pay roll for withdrawal at age 30 (after the minimum period of 10 years required for permanent fully insured status) to less than 3% for withdrawal at age 40 and then increases to 4% for withdrawal at age 65. For withdrawal ages 30 and 35 the primary insurance amount available at age 65 is the $25 minimum, while for age 40 it is only slightly higher—the $26 minimum; since as the age at withdrawal increases there is more contribution period, but in these cases the PIA remains the same, and thus the level premium cost decreases. For withdrawal ages 45 and above the PIA increases proportionately (since for this wage all computations are in the first step of the benefit formula), and therefore the level premium cost rises for higher withdrawal ages since the additional benefit amounts accruing have a higher cost due to the effect of interest and mortality (the man is nearer age 65 and so more likely to reach that age, while there is a shorter period for interest accumulation on the contributions).

Considering the single man with $200 and $300 wages, the level premium increases slightly to a peak and then decreases. The explanation of the trend in the increasing period is the same as was given for the increasing trend for the $100 man. The decrease occurs because of the relatively lower rate of increase in the PIA as the average monthly wage rises above $100, more than offsetting the effect of the additional benefits accruing at the older ages (which as indicated previously are more costly).

Table 12

LEVEL PREMIUM COST OF BENEFITS AS PERCENT OF ASSUMED LEVEL MONTHLY WAGE FOR INDIVIDUAL ENTERING AT AGE 20 AND WITHDRAWING AT VARIOUS AGES, ASSUMING RETIREMENT AT AGE 65

Age at Withdrawal From Covered Employment	Cost for Single Male, with Level Wage of			Cost for Married Male with No Children, with Level Wage of		
	$100	$200	$300	$100	$200	$300
30	4.91%	2.57%	2.39%	8.05%	4.33%	4.06%
35	3.54	2.58	2.58	5.86	4.36	4.28
40	2.98	2.76	2.28	5.01	4.61	3.78
45	2.99	2.78	2.12	5.07	4.59	3.52
50	3.20	2.63	2.05	5.40	4.35	3.39
55	3.44	2.56	2.02	5.76	4.22	3.34
60	3.69	2.53	2.03	6.11	4.16	3.33
65	4.00	2.55	2.06	6.55	4.17	3.37

Description of Valuation Bases:

B. 1952 Amendments, 1939-41 U.S. White Mortality, 3% interest.

Note: Cost of survivor benefits based on death of wage earner before retirement is included where applicable. See text for demographic assumptions.