AN ANALYSIS OF THE BENEFITS AND COSTS UNDER TITLE II OF THE SOCIAL SECURITY ACT AMENDMENTS OF 1939

by

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Actuarial Study No. 14

Social Security Board
Office of the Actuary

December 1941

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FOREWORD

The 1939 amendments represent a marked advance in such features as practical social insurance understanding, benefit effectiveness, a wiser distribution of benefits on a family basis, and a better balance in benefit determination as between the generations.

Mr. Myers' painstaking development of mathematical results of amended Title II shows in some detail certain consequences of continuing social insurance under a limited rather than a universal coverage. For the most part this study does not discuss or define eligibility requirements. Yet a thorough understanding of them is a prerequisite to a satisfactory reading of this report.

We are continuing to use those early basic cost assumptions which entered the first approximation as a sort of bench mark even after a second set of approximations has been developed. In spite of many careful statements as to the artificialities of both approximations, our use of them may still unwisely influence future cost statements. Illustrative estimates called "probable maximum cost" use factors not entirely comparable with those entering the first approximation. They are, instead, designed to carry certain rather liberal assumptions as to survival, as to effective retirement age, and to emphasize conservatism. Yet neither considers the understatement of benefits due to ignoring rising incomes.

The two approximations do not, then, show a range in the sense of using two strictly comparable sets of assumptions and drawing from them the lowest and the highest costs. They may be said to set up two illustrative cost bases, both of which fall within some broad, rather indeterminate range and represent two situations, each of which has been determined by certain factors and each of which is reasonably plausible.

The use of these series of assumptions has already given rise to many misconceptions and will probably continue to do so. It has seemed essential to link past studies with future studies. "Comparability", however, has its disadvantages. It will be necessary to develop a new type of range in lieu of both sets of assumptions. The basis for such a range, however, will be more simple when more wage and other data have evolved from the operation of the current law.

With administrative experience, certain terms tend to persist, others to change. Some of the terminology of this report will become outmoded as usage determines new diction.

The study is primarily a quantitative appraisal of certain aspects of the law, primarily mathematical and not philosophical. There is only a minimum consideration of illustrative situations. The complexity is <u>not</u> emphasized; it is inherent in so much <u>individual</u> as against <u>social</u> equity.

W. R. Williamson,
Actuarial Consultant

AN ANALYSIS OF THE BENEFITS AND COSTS UNDER TITLE II OF THE SOCIAL SECURITY ACT AMENDMENTS OF 1939

Introduction

The purpose of this report is to present various factual and statistical data in regard to the benefits under Title II of the 1939 Amendments.[a] There are also presented here cost estimates and the progress of the Federal Old-Age and Survivors Insurance Trust Fund from 1940 to 1955, based on the assumption that the payroll tax rate is continued as prescribed in the 1939 Amendments. Some of this material has been published in part elsewhere; the remainder of it has been developed in numerous intra-office memoranda.

Section A will present explanations of the definition and concept of "average monthly wage" and of the effect of the minimum and maximum limitations on the benefits. Section B gives illustrative benefits for each of the various beneficiary categories and thus contains only quantitative data based on the provisions of the Act. Sections C and D give details as to the transition from the benefits payable under the original Act to those of the 1939 Amendments and compare illustrative benefits payable under the two acts. Section E gives data in regard to the actuarial value of the benefits for various wages, ages at entry, and marital status. Finally, Section F presents the cost estimates for the old-age and survivors insurance program. The accuracy of the material in this section should not be assumed to be of the same degree as the material in the earlier sections. Thus, any estimates of conditions in the far-off future are prone to wide variations and fluctuations. A further discussion of the limitations on these future estimates will be given subsequently.

While the availability of the wage tabulations for 1937 and 1938 has added further material to be taken into account in making the estimates herein set forth, the long range credence of these early Baltimore statistics must be accordingly limited. However, the actual data, although for only a short period of operation, tend to appear to provide a sounder base for use in extrapolation than do earlier assumptions.

The important limiting factors in utilizing such data are:

(1) The unknown extent of non-compliance in tax payment;

(2) The varying, sometimes conflicting, rulings as to coverage;

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a/ For a similar study of the original Title II in the Social Security Act of 1935, see Actuarial Study No. 8, entitled, "An Analysis of Benefits and the Progress of the Old-Age Reserve Account under Title II of the Social Security Act."

(3) The possibility that earnings of these two years may be decidedly non-typical;

(4) The unknown range of distribution of earnings between covered and non-covered employments and the extent of idle time, both in the two years observed and to be expected in the future;

(5) The trend toward greater coverage of formerly non-employed individuals and the possible wider distribution of earnings among more people;

(6) The natural lag in securing complete records at any time.

This study has attempted to follow as closely as possible the phraseology of the law and the supplementary definitions developed by the Bureau of Old-Age and Survivors Insurance. Although accuracy in interpretation of the provisions of the Act is sought, this study should not be considered as final authority which actually lies in the law itself and in the official regulations and rulings.

A. Method of Calculation of Benefits

All types of beneficiary payments under the old-age and survivors insurance program[b/] are expressed in terms of the primary benefit, which is the amount payable to a primary annuitant who has neither an eligible wife nor an eligible child. It is the purpose of this section to describe the benefits payable to the different beneficiary categories as related to the primary benefit and to analyze in detail their calculation with special emphasis on the minimum and maximum provisions applicable.

Table 1 shows the various beneficiary categories classified according to the percentage of the primary benefit payable. Although according to the administration of the law more than one monthly check may be drawn for the family concerned,[c/] this report will consider the various groups as units.

Before describing the method of calculation of the primary benefit, it is necessary to discuss two items, namely: "average monthly wage" and "increment year."

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b/ For a description of eligibility requirements and types of beneficiaries, see Social Security Bulletin, December 1939, p. 3.
c/ For example, an eligible widow under 65 with an eligible child in her care receives two checks--one for herself and one for the child.

Table 1

BENEFICIARY CATEGORIES[a] ACCORDING TO TOTAL AMOUNT OF BENEFITS PAYABLE[b]

Total Benefit as % of Primary Benefit	Beneficiary Category
50%	1 eligible child; or 1 eligible parent.
75	Eligible widow with no eligible child.
100	Primary annuitant; 2 eligible children; or 2 eligible parents.
125	Eligible widow and 1 eligible child.
150	Primary annuitant and eligible wife; primary annuitant and 1 eligible child; 3 eligible children; or 3 eligible parents.[c]
175	Eligible widow and 2 eligible children.
200	Primary annuitant, eligible wife, and 1 or more eligible children; primary annuitant and 2 or more eligible children; eligible widow and 3 or more eligible children; 4 or more eligible children; or 4 or more eligible parents.[c]
600	Lump-sum death payment.

a/ For eligibility requirements of the various categories, see Social Security Bulletin, December 1939, p. 3.
b/ All benefits shown with the exception of the lump-sum death payment are payable monthly.
c/ An extremely improbable case.

The "average monthly wage" is determined by dividing total credited wages received prior to the quarter of death (or the quarter of filing, for surviving eligible primary annuitants) by 3 times[d] the number of "divisor quarters." In general, by this term is meant the number of quarters after 1936 and before the quarter of death (or of filing for primary annuitants). From the above period there is deducted the number of quarters in 1937 and 1938 during all of which the individual was over age 65, since for that period he could not possibly have earned credited wages due to the "age 65 limitation" in the 1935 Act. Also there shall be deducted all quarters prior to the quarter in which age 22[e] was attained and where less than $50 of credited wages were received; this is done so as not to penalize individuals who did not begin working during their minority or who received only negligible wages then.

When an individual's average wage might be reduced as a result of employment after age 65 (if such wages are smaller than the average of those earned prior to 65), this may be counteracted by filing a claim immediately upon attainment of age 65. This will result in "freezing" the average wage so that no subsequent decrease (or possibly increase) can occur. Such cases will require a considerable amount of personal judgment since one must be able to foresee whether his earnings after age 65 will be greater or less than his previous average.

By "increment year" is meant any calendar year after 1936 during which the individual receives $200 or more of credited wages. It should be noted that this requirement is somewhat different from that of $50 per quarter as used in the various eligibility requirements. Thus, if an individual works in only one calendar quarter and receives more than $200, he gets credit for one "increment year," but for only one "quarter of coverage" toward eligibility. On the other hand, if the individual worked during three calendar quarters with more than $50 in each quarter but less than $200 in total (say, $65 of earnings in each of the three quarters), he would not get credit for an "increment year," but would have three quarters of coverage. Obviously, if an individual gets credit for all quarters of coverage in a calendar year, he would also have an "increment year."

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d/ So as to change quarters to months.

e/ It should be noted here that the usual starting point of the "divisor quarters" is the quarter of attainment of age 22 except for those over this age on January 1, 1937, whereas in determining the number of quarters of coverage required for fully insured status, the quarter after the attainment age of 21 is always the starting point. For example, in the case of an individual who attained age 21 on July 15, 1940, the period for determination of fully insured status begins with the fourth calendar quarter of 1940, whereas the period for determining the number of "divisor quarters" starts with the third quarter of 1941.

Charts Ia and Ib are inserted at this point to summarize graphically the periods of time over which the various factors involved in the determination of eligibility and benefits apply. The details of these charts may be obtained from the preceding text so that no detailed discussion will be necessary here. As an example of their use, the period involved in the determination of the number of quarters required for fully insured status for death before 65 is shown by the first line to be: the period from the quarter after the quarter of attainment of 21 up to but not including the quarter of death. The second line indicates that such quarters of coverage as are needed may be obtained not only in the above period but also in the quarter of attainment of 21 and prior quarters and in the quarter of death. It is interesting to note that none of the periods for the various factors are exactly the same pattern.

The "basic benefit" is calculated by taking 40% of the first $50 of average monthly wage plus 10% of the next $200.f/ To determine the "basic benefit" from this formula it is usually necessary to add two items, but by an algebraic transformation the formula may be restated so that only one calculation is necessary:

Average Monthly Wage	"Basic Benefit" (Monthly)
Under $50	40% of average monthly wage
$50 - 250	$15 + 10% of average monthly wage
$250 and over	$40

As an example of the use of this restated formula, the monthly "basic benefit" corresponding to an average wage of $128 is $15 plus $12.80, equaling $27.80. Expressed in this fashion, the formula is easier to apply than in the form prescribed in the Act; the result is exactly the same since the two are mathematically equivalent.

The primary benefit is obtained by increasing the "basic benefit" by 1% for each "increment year." Thus, for an average monthly wage of $128 and 4 "increment years", the primary monthly benefit would be $28.91 (1.04 x $27.80). It is further provided that in no case shall the primary benefit be less than $10. Moreover, for the 50% and 75% beneficiary categories where the total payment is less than the primary benefit, it is provided that the minimum monthly payment shall be $10. Table 2 shows the average wage below which the $10 minimum is effective.

f/ As a result, the maximum wage creditable for benefit calculations is $250 per month. Individuals who had multiple employment during 1937-39 may have higher average wages than this, but will not receive any additional benefits therefor. For example, an individual who is steadily employed by two companies at $3000 per year from each one would have total credited wages of $6000 in each year of 1937-39 and $3000 in each year after 1939; this individual's average monthly wage as of the first quarter of 1943 would be $375.

Chart Ia

PERIODS (AFTER 1936) INVOLVED IN DETERMINATION OF ELIGIBILITY AND AMOUNT OF PRIMARY BENEFITS[a]
FOR THOSE ATTAINING AGE 65 AFTER 1938

Factor	Quarters Through Attainment of 21: Under $50	Quarters Through Attainment of 21: Over $50	Quarters Between Attainment of 21 & 22: Under $50	Quarters Between Attainment of 21 & 22: Over $50	Quarter of Attainment of 22 to Quarter prior to Death or Filing	Quarter of Death Before 65 or of Attainment of 65	Quarters After Attainment of 65 Prior to Quarter of Filing	Quarter of Filing
For Deaths Before Age 65								
Fully Insured Status			********	********	********			
Quarters of Coverage		********		********	********	********		
Credited Wages	********	********	********	********	********			
Divisor Quarters		********		********	********			
Increment Years	********	********	********	********	********	********		
For Those Filing Claim For Primary Benefit After Age 65[b]								
Fully Insured Status			********	********	********			
Quarters of Coverage		********		********	********	********	********	********
Credited Wages	********	********	********	********	********	********	********	
Divisor Quarters		********		********	********	********	********	
Increment Years	********	********	********	********	********	********	********	********

a/ The periods shown indicate when the factor is applicable:

1. For "Fully Insured Status" the individual must have quarters of coverage equal to at least half the number of quarters in the period shown (with a minimum of 6 and a maximum of 40).
2. For "Quarters of Coverage" credit may be obtained by receipt of $50 or more in any of the quarters of the period shown.
3. For "Credited Wages" credit is given in the calculation of average monthly wage for all wages received in the period shown.
4. For "Divisor Quarters," as used in the calculation of average monthly wage, there are counted all quarters of the period shown.
5. For"Increment Years" credit is given for all years in the period shown where $200 or more of wages are received.

b/ Also applies to deaths after age 65 subsequent to filing. For death after age 65 prior to filing, the corresponding result may be gotten by reading the column heading "Quarter of Filing" as "Quarter of Death After 65" with the line for "Increment Years" obviously stopping in this period.

Chart Ib

PERIODS (AFTER 1936) INVOLVED IN DETERMINATION OF ELIGIBILITY AND AMOUNT OF PRIMARY BENEFITS.a/ FOR THOSE ATTAINING AGE 65 BEFORE 1939b/

Factor	Quarters in 1937-38 Through Attainment of Age 65	Quarters in 1937-38 After Attainment of Age 65	Quarters After 1938 Prior to Quarter of Filing	Quarter of Filing
Fully Insured Status	c/	c/	c/	c/
Quarters of Coverage	***************		***************	*********
Credited Wages	***************		***************	
Divisor Quarters	***************		***************	
Increment Years	***************		***************	*********

a/ The periods shown indicate when the factor is applicable:

1. For "Fully Insured Status" the individual must have quarters of coverage equal to at least half the number of quarters in the period shown.
2. For "Quarters of Coverage" credit may be obtained by receipt of $50 or more in any of the quarters of the period shown.
3. For "Credited Wages" credit is given, in the calculation of average monthly wage, for all wages received in the period shown.
4. For "Divisor Quarters," as used in the calculation of average monthly wage, there are counted all quarters of the period shown.
5. For "Increment Years" credit is given for all years in the period shown where $200 or more of wages are received.

b/ Also applies to deaths after age 65 subsequent to filing. For death after age 65 prior to filing, the corresponding result may be gotten by reading the column heading "Quarter of Filing" as "Quarter of Death After 65" with the line for "Increment Years" obviously stopping in this period.

c/ For these individuals fully insured status is based on 6 quarters of coverage in all cases.

Table 2

"AVERAGE WAGE"[a] BELOW WHICH $10 MINIMUM FOR TOTAL BENEFITS IS EFFECTIVE FOR VARIOUS BENEFICIARY CATEGORIES[b]

Increment Years[c]	Beneficiary Category[b]			
	50%	75%	100%	125% & Over
0	$49.99	$33.32	$24.99	*
5	47.59	31.74	23.80	*
10	45.44	30.29	22.72	*
20	41.65	27.77	20.83	*
30	38.45	25.63	19.23	*
40	35.70	23.80	17.85	*
50	33.32	22.22	16.66	*

* In all these cases the total benefit is greater than $10 since the primary benefit (100%) must always be at least $10.

a/ As determined by the provisions of the law.

b/ For a description of the various categories, see Table 1.

c/ A calendar year during which $200 or more of credited wages were received.

The relation of primary benefits to "average monthly wage" may be analyzed by considering the "basic benefit." For average monthly wages of $25-50 the benefit is directly proportional to the wage. For the $250 man the basic benefit is $40 or only twice as great as for the $50 man, although the ratio of their wages if 5 to 1. This heavier weighting for lower salaried individuals is customary in social insurance. It represents a trend in the direction of social adequacy as against the individual equity principle which would dictate that benefits for all wage levels be directly proportionate.

For the various beneficiary categories outlined in Table 1 the total benefit payable is calculated by multiplying the primary benefit by the given percentage. However, certain minimum and maximum provisions must then be applied. Since the primary benefit must always be at least $10, all beneficiary categories over 100% receive more than $10; for example, the benefit for a primary annuitant and his eligible wife is always at least $15. Thus, the minimum of $10 which is imposed for total benefits is only effective for the 50% and 75% categories. If the primary benefit is less that $13.33 for the 75% category or $20.00 for the 50% category, the benefit payable is always $10 rather than the lower amount resulting from the usual method of calculation. It should be kept in mind that the beneficiary category may change from time to time (because of death, attainment of 18, engaging in covered employment, etc.) so that a redetermination of the benefits is necessary in such cases.

One maximum applicable in all cases is that the total benefit payable shall not exceed twice (i.e. 200%) the primary benefit. Since, in Table 1, the various beneficiary categories have been so defined that none was greater than 200%, this maximum provision has automatically been taken into account in the succeeding discussion. The other maximums for the total benefits payable may be stated concisely as follows:

(a) For average monthly wages of less than $25.00: $20.00

(b) For average monthly wages of $25.00-106.25: 80% of the average monthly wage

(c) For average monthly wages in excess of $106.25: $85.00.

None of these maximums can ever apply to a primary annuitant who has no allowance for an elgibile wife or child. As a result, they are also inapplicable to the 50% and 75% beneficiary categories and, as will be seen subsequently, to the 125% category. The following discussion will analyze the ranges of average monthly wage where the maximums will be operative.

Table 3 shows the average monthly wage at which the $20 maximum is effective. Thus, for example, for 20 "increment years" this maximum is effective for the 175% beneficiary category only when the average monthly wage falls between $23.82 and $25.00; where the average monthly wage is less than $23.82, the benefit is always less than $20.00. This maximum is effective for the 200% category regardless of "increment years." However, for the 175% and 150% categories the minimum number of years are 15 and 34, respectively, so that for these categories this maximum provision could not have any effect until 1951 and 1970, respectively.

Table 4 shows the average monthly wage below which the "80% of average wage" maximum is effective. As pointed out previously, this maximum is effective only for average monthly wages above $25.00. For example, for 5 "increment years" it is effective only for the 200% beneficiary category when the average monthly wage is less than $53.40 but greater than $25.00; for average monthly wages greater than $53.40 the benefit is always less than 80% of the wage. Just as in the case of the $20 maximum, this maximum is effective at all times for the 200% category, but not until 15 and 34 years hence for the 175% and 150% categories.

Table 5 shows the average monthly wage above which the $85 maximum is effective. For example, for 10 "increment years" this maximum is applicable only to the 200% beneficiary category when the average monthly wage is greater than $236.45; for average monthly wages less than this the benefit is always less than $85.00. For the 200% beneficiary category this maximum is applicable only where individuals have 7 or more "increment years," while for the 175% and 150% categories the corresponding years are 22 and 42, respectively. From this it may be seen that the $85 maximum cannot possibly be effective before 1943.

Table 6 shows the range of average monthly wages in which the only maximum applicable is twice the primary benefit and is derived from the preceding three tables by taking the ranges where the other maximums are not applicable. For short periods of coverage this range is quite large, being from about $53 to $250 for 5 "increment years." On the other hand, for long periods this maximum is applicable in a very narrow range, being only from $90 to $133 for 50 "increment years."

Chart II shows the monthly benefits for various beneficiary categories for various average monthly wages and 3 "increment years" (the "typical" case for individuals retiring or dying in the early part of 1940). The curves showing the benefits payable have been constructed so as to show the maximum which is applicable at the given point. As may be seen from the chart for the 100%, 150%, and 175% categories, no maximum is applicable. For the 200% category the "80% of average wage" maximum applies for a short range, while the $20 is effective for a much shorter range.

Charts III and IV present similar material for 20 and 50 "increment years," respectively. For 20 "increment years" there is no maximum applicable to the 100% and 150% categories, while for the 175% and 200% categories all three maximums are applicable with the same total benefit being payable for a certain range of average monthly wage (between $24

Table 3

"AVERAGE WAGE"[a] AT WHICH $20 MAXIMUM FOR TOTAL BENEFITS IS EFFECTIVE[b] FOR VARIOUS BENEFICIARY CATEGORIES[c]

Increment Years[d]	Beneficiary Category[c] 125% & under	150%	175%	200%
0	*	*	*	**
5	*	*	*	**
10	*	*	*	**
20	*	*	$23.82	**
30	*	*	21.99	**
40	*	$23.82	20.42	**
50	*	22.24	19.07	**
Minimum Years[e]	*	34	15	**

Table 4

"AVERAGE WAGE"[a] BELOW WHICH "80% OF AVERAGE WAGE" MAXIMUM FOR TOTAL BENEFITS IS EFFECTIVE FOR VARIOUS BENEFICIARY CATEGORIES[c]

Increment Years[d]	Beneficiary Category[c] 125% & under	150%	175%	200%
0	***	***	***	***
5	***	***	***	$53.40
10	***	***	***	56.90
20	***	***	$53.40	64.30
30	***	***	59.61	72.22
40	***	$53.40	66.21	80.75
50	***	58.69	73.24	90.00
Minimum Years[f]	***	34	15	1

* The $20 maximum is not applicable to this case.

** For all average wages under $25.00 the total benefit is always $20.00.

*** The "80% of average wage" maximum is not applicable to this case.

a/ As determined by the provisions of the law.

b/ For "average wages" equal to or greater than the figure shown but less than $25.00, the benefit as initially calculated is reduced to exactly $20.00 in all cases. For "average wages" less than the figure shown, the benefit as initially calculated is less than $20.00 and remains unchanged. For "average wages" greater than $25.00, the $20 maximum is not applicable.

c/ For a description of the various categories, see Table 1.

d/ A calendar year during which $200 or more of credited wages were received.

e/ Minimum number of years for which the maximum could affect any individual (i.e. based on $24.99 average monthly wage).

f/ Minimum number of years for which maximum could affect any individual (i.e. based on any average monthly wage between $25-50).

Table 5

"AVERAGE WAGE"[a] ABOVE WHICH $85 MAXIMUM FOR TOTAL BENEFITS IS EFFECTIVE FOR VARIOUS BENEFICIARY CATEGORIES[b]

Increment Years[c]	Beneficiary Category[b]			
	125% & Under	150%	175%	200%
0	*	*	*	*
5	*	*	*	*
10	*	*	*	$236.45
20	*	*	*	204.25
30	*	*	$223.65	176.95
40	*	*	196.95	153.65
50	*	$227.85	173.85	133.35
Minimum Years[d]	*	42	22	7

Table 6

"AVERAGE WAGE"[a] RANGE IN WHICH THE ONLY MAXIMUM APPLICABLE IS 200% OF THE PRIMARY BENEFIT[e]

Increment Years[c]	Range of "Average Wage"
0	All
5	$53.40-250.00
10	56.90-236.45
20	64.30-204.25
30	72.22-176.95
40	80.75-153.65
50	90.00-133.35

* The $85 maximum is not applicable to this case.

a/ As determined by the provisions of the law.

b/ For a description of the various categories, see Table 1.

c/ A calendar year during which $200 or more of credited wages were received.

d/ Minimum number of years for which the maximum could affect any individual (i.e. based on $250 average monthly wage).

e/ This maximum applies only to the following beneficiary categories: primary annuitant; eligible wife and 2 or more eligible children; primary annuitant and 3 or more eligible children; eligible widow and 3 or more eligible children; 5 or more eligible children; or 5 or more eligible parents (extremely improbable case).

CHART II

MONTHLY BENEFITS FOR VARIOUS BENEFICIARY CATEGORIES FOR 3 INCREMENT YEARS, ACCORDING TO MAXIMUM PROVISION APPLICABLE

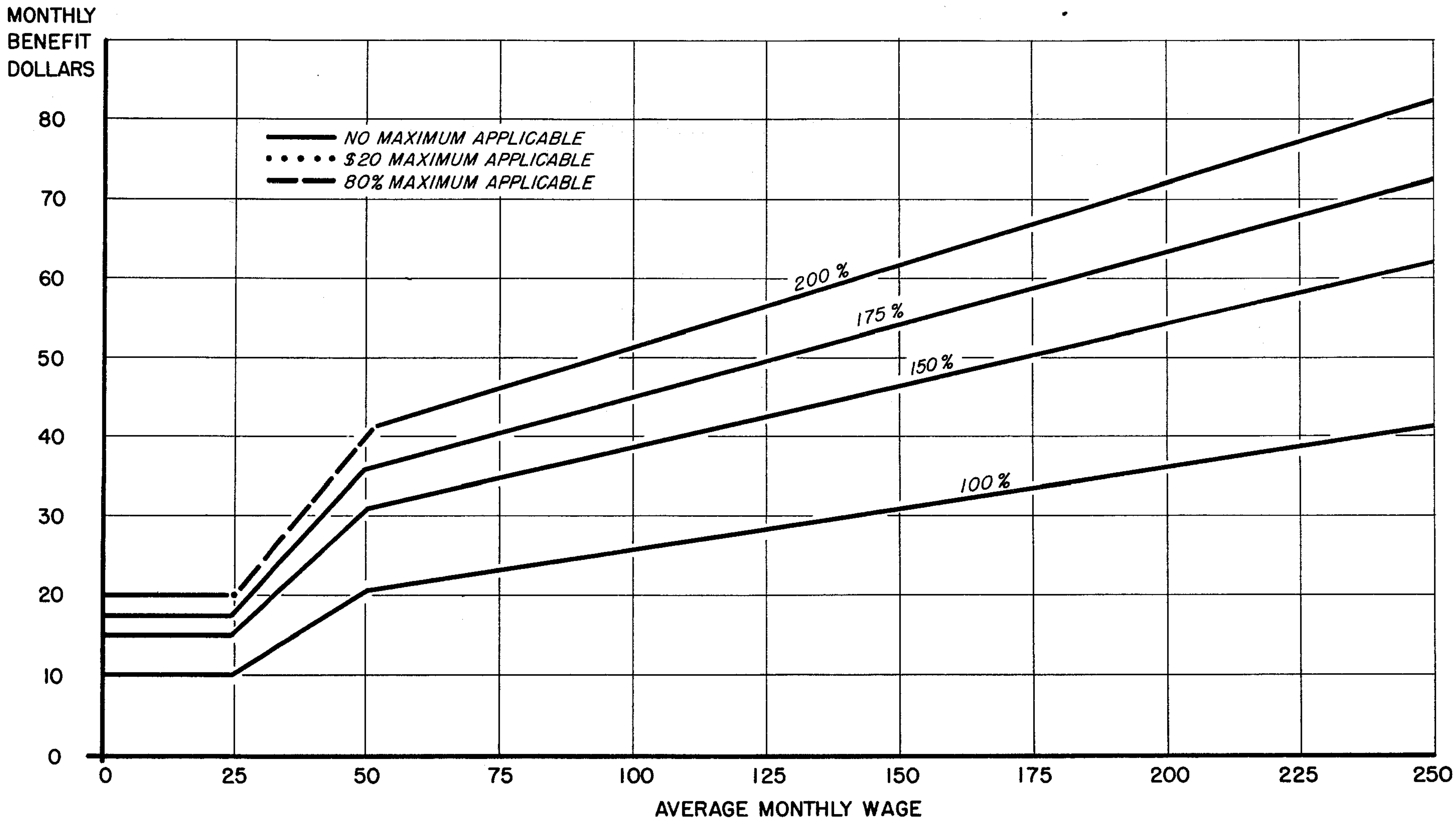

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CHART III

MONTHLY BENEFITS FOR VARIOUS BENEFICIARY CATEGORIES FOR 20 INCREMENT YEARS, ACCORDING TO MAXIMUM PROVISION APPLICABLE

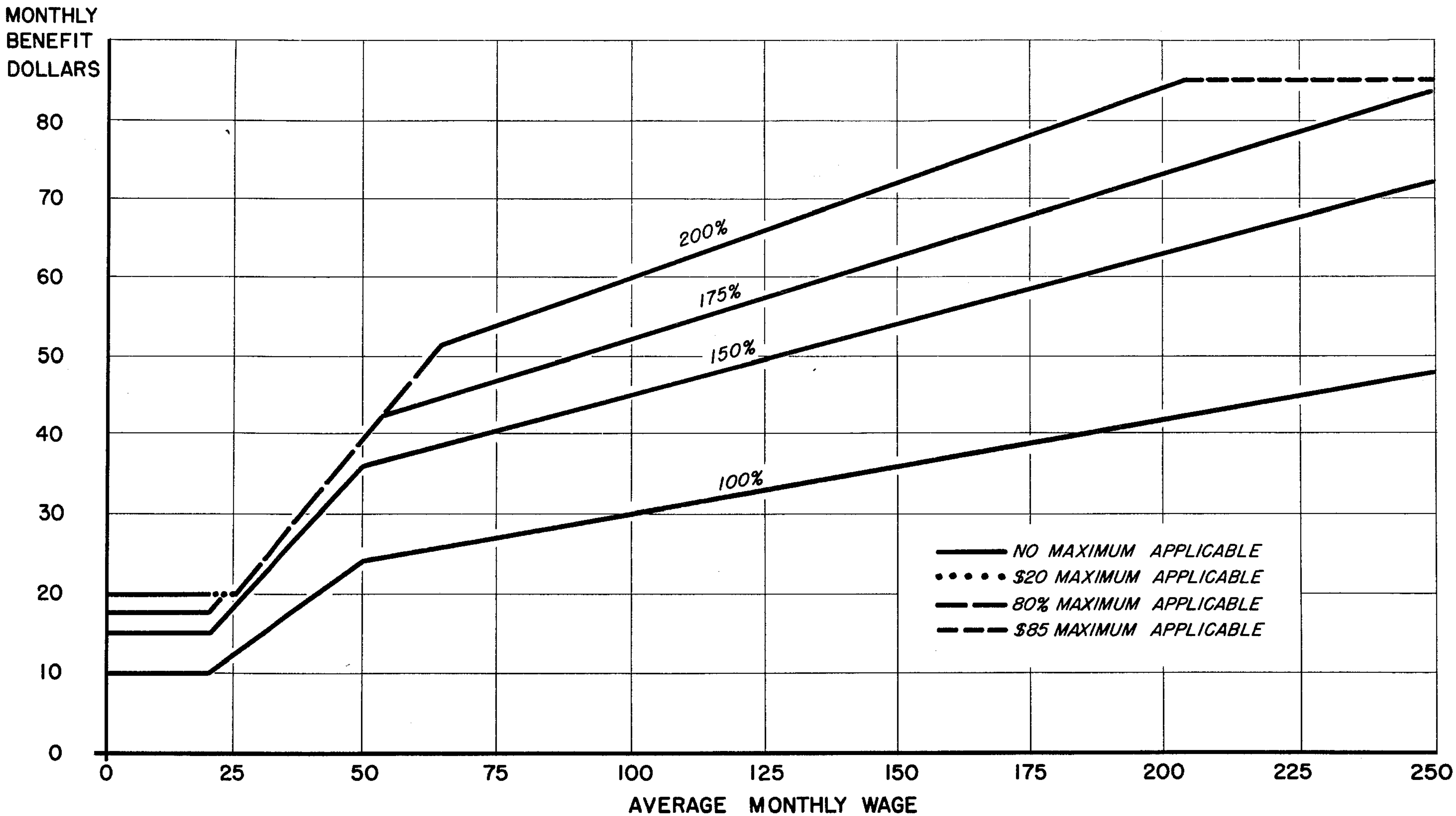

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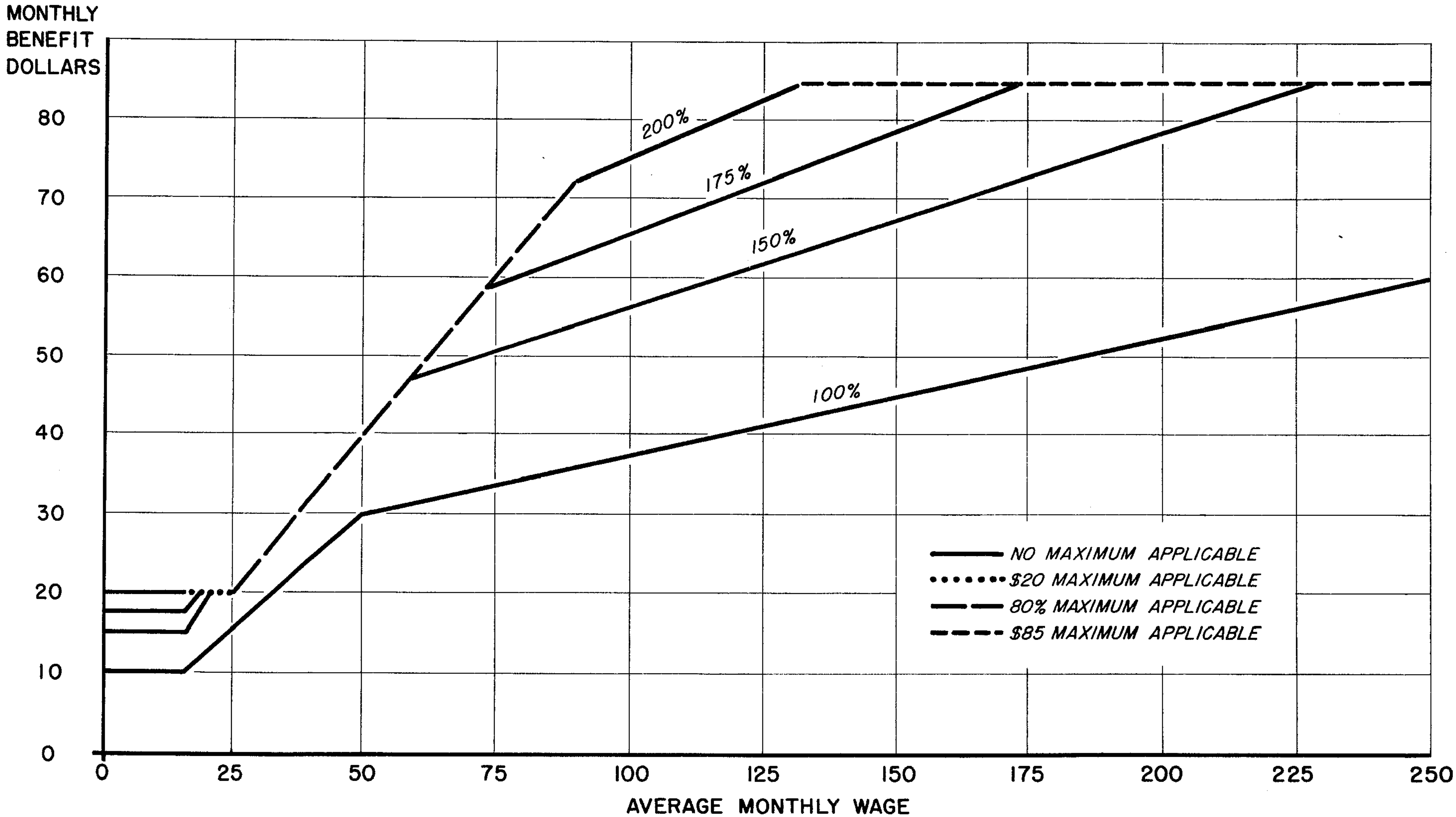
CHART IV

MONTHLY BENEFITS FOR VARIOUS BENEFICIARY CATEGORIES FOR 50 INCREMENT YEARS, ACCORDING TO MAXIMUM PROVISION APPLICABLE



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and \$53). Similarly, for 50 "increment years" all three maximums are applicable for the 150%, 175%, and 200% categories and, in fact, the same total benefit is payable for average monthly wages between \$24 and \$58.

Another way that these maximums may be analyzed is to consider the maximum number of "increment years" for which additional benefits are payable, as shown in Table 7. For example, in the 200% category an average monthly wage of \$60 would produce a benefit of \$47.88 for 14 "increment years" and \$48.30 for 15 "increment years" according to the benefit formula. However, since the "80% of average wage" maximum requires that the amount payable shall not exceed \$48, the benefit for 15 or more "increment years" is automatically reduced to this figure so that this is the maximum period for which additional benefits are payable. As may be seen from this table additional "increment years" increase the benefit in all the following cases: where the beneficiary category is 125% or less; where the average monthly wage is \$16 or under; and where the average monthly wage is between \$91 and \$133. For the 200% category where the average monthly wage is between \$25 and \$50, the "increment years" element in the calculations can have no effect whatsoever; an individual with 50 "increment years" would still receive the same benefit as an individual with no "increment years".g/

In the next few years additional benefits will be payable for each additional "increment year" with the exception of the 200% category where the average monthly wage is either in or near the range \$25-50 or near \$250.

Still another analysis of these maximums is made in Table 8 which shows the maximum beneficiary category for which additional benefits are payable for various "increment years" and average monthly wages. In other words, the same total benefit is payable for all higher beneficiary categories as are paid for the categories shown. For example, for an average monthly wage of \$60 and 40 years of coverage, the benefit payable according to the formula is \$44.10 for the 150% category, \$51.45 for the 175% category, and \$58.80 for the 200% category. However, since a \$48 maximum is applicable, no additional benefit is payable for higher beneficiary categories than 175%.

From the preceding discussion of the calculation of benefits the reader might wonder what would be the probable effect for an actual case

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g/ It is quite unlikely, but not impossible, for a fully insured individual to have an "average monthly wage" greater than \$25 with no "increment years". One case is that of an individual who was exact age 16 on January 1, 1937, and who is paid \$45 per quarter until age 22 and then \$65 per quarter in the first three quarters and nothing in the fourth quarter of each year until age 28 (January 1, 1949). His "average monthly wage" at that time would be \$31.25 (total wage = 6 x \$180 + 6 x \$195 = \$2250 and "divisor quarters" = 24); he would have no "increment years", but would have 24 "quarters of coverage" and be fully insured.

of an individual entering at a young age with an increasing wage history thereafter. Such an analysis has been made in Chart V, using for illustrative purposes the average wage credits by single ages as shown in the 1937 wage tabulation for total persons. It is not thought that this will be typical of all future calendar years or for any particular individual, but rather that it is a likely picture.

The curve showing the annual earnings at each age h/ increases somewhat rapidly from about $750 at age 25 to a maximum of about $1220 between ages 40 and 50, after which it slowly declines to about $1060 at age 64. The individual's average wage (on an annual basis) rises quite smoothly from $750 at age 25 to a level of slightly over $1100 from age 55 on. From age 60-64 there is a slight decline in the average wage since the earnings then are somewhat less than the previous average. The "basic benefit" increases only slightly over the entire period, ranging from about $255 at age 25 to $290 at age 50 and thereafter (there is a slight peak of $291 at age 60 declining back to $290 at age 64). Thus, although the average wage increased almost 50% from age 25 to age 64, the "basic benefit" increased only about 15%. Next considering the primary benefit, the curve is almost linear increasing from slightly over $255 at age 25 to about $405 at age 64, or an increase of almost 60%. Thus, for this individual, although the weighting in the "basic benefit" formula to a great extent nullifies the individual's increasing wage history, the 1% increment used in calculating the primary benefit more than counterbalances it.

This section in discussing the method of calculation of benefits has devoted considerable attention to the various maximums applicable and also to the computation of the "average monthly wage." The effects of the maximum provisions will become far more important as the program continues than they will be in the early years. However, most of the intricate points in connection with the computation of "average monthly wage" will arise more often in 1940 and other early years than subsequently.

B. Illustrative Benefits

The preceding section has shown the methods of calculating the benefits for the various beneficiary categories; this section gives tables showing illustrative benefit payments for various average wages and periods of coverage computed by these methods. There will also be analyzed the relationship of these benefits to average wage.

As stated previously, the total benefit payable for the various beneficiary categories may be calculated in effect by multiplying the

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h/ The curve is somewhat rough due to the fact that the crude data has been plotted without any attempt at smoothing by graduation formulas.

Table 7

MAXIMUM NUMBER OF "INCREMENT YEARS"[a] FOR WHICH ADDITIONAL BENEFITS ARE PAYABLE[b] FOR VARIOUS BENEFICIARY CATEGORIES[c]

Average Monthly Wage[d]	Beneficiary Category[c] 125% & Under	150%	175%	200%
$16 & Under	*	*	*	*
17	*	*	*	47
20	*	*	43	25
23	*	45	25	9
25-50	*	34	15	0
60	*	*	31	15
70	*	*	46	28
80	*	*	*	40
90	*	*	*	50
91-133	*	*	*	*
135	*	*	*	50
150	*	*	*	42
175	*	*	50	31
200	*	*	39	22
225	*	*	30	14
250	*	42	22	7

* Additional benefits are payable for each additional "increment year" regardless of the number of such years (for practical purposes it is assumed that 50 years is the maximum obtainable).

a/ A calendar year during which $200 or more of credited wages were received.

b/ For the given beneficiary category and "average wage," the total benefit payable is not increased for "increment year" in excess of those shown in this table.

c/ For description of the various categories see Table 1.

d/ As determined by the provisions of the law.

Table 8

MAXIMUM BENEFICIARY CATEGORY[a] FOR WHICH ADDITIONAL BENEFITS ARE PAYABLE[b] FOR VARIOUS "INCREMENT YEARS"[c]

Average Monthly Wage[d]	Increment Years[c] 0,5,&10	20	30	40	50	Minimum[e]
$19 & Under	*	*	*	*	*	*
20	*	*	*	*	175%	43
21	*	*	*	175%	175	37
22	*	*	175%	175	175	30
23	*	*	175	175	150	25
24	*	175%	175	150	150	20
25-50	*	175	175	150	150	15
55	*	*	175	175	150	23
60	*	*	*	175	175	31
65	*	*	*	175	175	39
70	*	*	*	*	175	46
74-173	*	*	*	*	*	*
175	*	*	*	*	175	50
200	*	*	*	175	175	39
225	*	*	175	175	175	30
230	*	*	175	175	150	28
250	*	*	175	175	150	22

* Additional benefits are payable for each additional beneficiary category up to the 200% category.

a/ For a description of the various categories, see Table 1.

b/ For the given "increment years" and "average wage," the total benefit payable is not increased for beneficiary categories in excess of those shown.

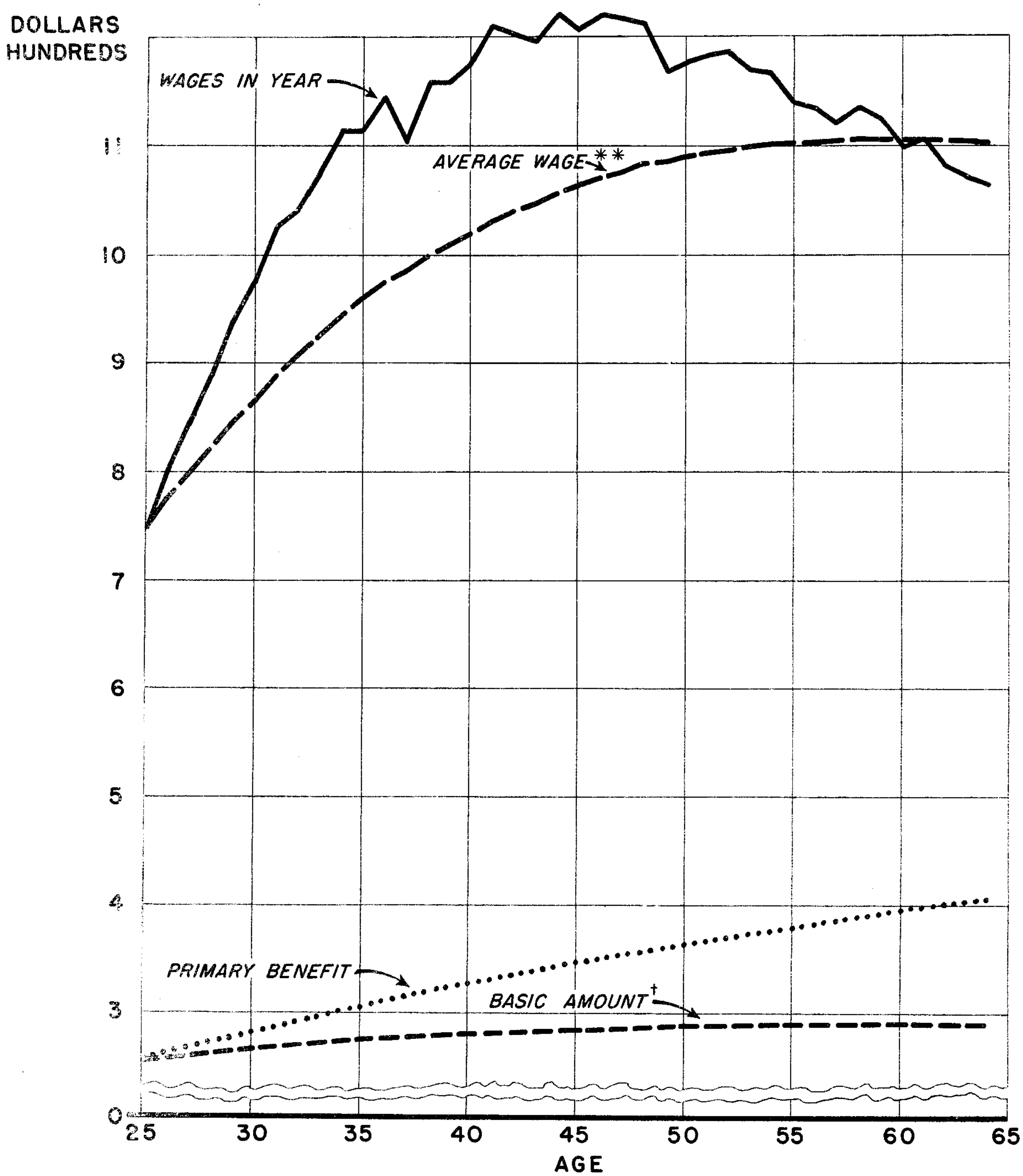
c/ A calendar year during which $200 or more of credited wages were received.

d/ As determined by provisions of the law.

e/ Minimum number of "increment years" for which the 175% beneficiary category would get the same as the 200% category.

CHART V

EFFECT OF CHANGING WAGE HISTORY* ON PRIMARY BENEFIT FOR ENTRANT AT AGE 25 IN 1937 CONTINUOUSLY EMPLOYED UNTIL AGE 65, (ALL FIGURES ON ANNUAL BASIS).



* FOR ILLUSTRATIVE PURPOSES THE WAGE HISTORY IS THE AVERAGE WAGE BY SINGLE YEARS OF AGE AS SHOWN BY THE 1937 WAGE TABULATIONS FOR TOTAL PERSONS.

** AS OF END OF YEAR.

† i.e., EXCLUSIVE OF INCREMENT.

primary benefit by the given percentage, subject to whatever minimum or maximum conditions may apply. Under the actual administration of the program this method will not always give a strictly accurate result due to the methods of rounding adopted. However, in no case will the actual figures be more than one cent different from those obtained by the direct multiplication process and in most cases will be identical.

Table 9 gives illustrative benefits for a primary annuitant who has no allowance for dependents; it is also applicable to the benefits for two eligible children or for two eligible parents. Table 10 is for a primary annuitant with one dependent (either an eligible child or an eligible wife) and for three eligible children. Table 11 is applicable to a primary annuitant with two or more dependents (either two or more eligible children or an eligible wife and one or more eligible children), to four or more eligible children, and to an eligible widow and three or more eligible children. Table 12 gives illustrative benefits for the 50% category (one eligible child or one eligible parent), while Tables 13, 14, and 15 are for the 75%, 125%, and 175% categories, respectively.

Table 16 shows illustrative lump-sum death payments. The minimum payment is obviously $60 since it represents six times the minimum primary benefit of $10. The largest figure shown is $360 which may be considered to be the maximum lump-sum death benefit payable since individuals will rarely have more than 50 "increment years."

The previous tables in this section have all been based on average monthly wages. It is thought worth while to present Table 17 which gives illustrative monthly benefits for various average weekly wages. This table is useful where illustrative examples for level weekly wages are desired. Figures are shown only in the case of a primary annuitant with no dependent and for a primary annuitant with one eligible dependent. Approximate figures for any other beneficiary categories may be obtained by multiplying the figures for the primary annuitant with no allowance for dependents by the proper percentage.

In a social insurance system it is perhaps more vital to consider the benefit payments in respect to the wages which the individual had received (these being thought a good indication of his standard of living or the wage loss resulting from his death or superannuation) rather than the absolute amount of benefits payable. Such a comparison is made in Table 18 for a primary annuitant and in Table 19 for an eligible widow. In each case figures are given for different possibilities as to the number of eligible dependents present.

First, considering the primary annuitant with no eligible dependents, those with average monthly wages of less than $50 receive benefits which represent about 40% of their wage for short periods of coverage up to 60% for long periods of coverage. For individuals with average monthly wages of $100 the corresponding range is from about 25-40%, while for the maximum creditable wage of $250 it is from 15-25%. A frequent case will be that of a primary annuitant with an eligible wife. For low salaried individuals the benefits payable in this case will represent more than 60% of wage for short periods of coverage and up to 80% for long periods. For the $100 individual who has an eligible wife, the range will be from about 40-55%, while for the $250 individual it will be from 25-35%.

Next considering the surviving widow, the benefit payable will represent 30-45% of her husband's average wage if he were a low salaried individual. If he had an average wage of $100 per month, the benefit payable would amount to 20-30%, while for an average monthly wage of $250 it would be 12-18%.

Finally the "typical" case of a widow with two eligible children may be considered. In almost all instances where the husband earned under $50, the benefit payable is 75-80% of average wage regardless of the number of "increment years." For an average monthly wage of $100 the benefits range from 45-65% of average wage, and for $250 from 30-35%.

In all of the preceding tables in this section it was assumed that the individual's average wage and "increment years" were known in advance. These tables are, of course, quite readily applicable where the individual is assumed to earn a fixed level monthly wage after 1936 (or attainment of age 22 if later). However, it will be of interest to examine the situation for individuals employed certain proportions of the time between 1936 and attainment of age 65.

In Table 20 there are shown the monthly primary benefits (with no supplement for dependents) for various possible periods employed (namely all, 75%, and 50% of the available quarters and exactly 40 quarters[1/]). The individual who earns a level monthly wage of $25 from age 25 on will receive a monthly benefit of $14.00 if he works in all quarters, but if employed for only 75% or less of the time, receives the minimum benefit of $10.00, or only about 30% less. For age at entry 60 the benefit is $10.50 for employment in all quarters, and $10.00 for employment in 75% or less of the quarters. Thus, for these low salaried individuals, unless they are employed in practically all of the quarters, the benefit will be about the same in all cases, namely, the $10.00 minimum.

For a wage of $50 per month while employed, the benefit payable for employment in 50% of the possible quarters is about 55% less than for employment in all of the possible quarters. For the $100 per month individual the corresponding reduction amounts to only 25-30%, but for the $250 individual it amounts to 35-40%. For very low paid individuals and for those earning around $100 per month the factor of proportion of time employed is not nearly so important as in the case of individuals earning around $50 or those in the extremely high wage brackets.

1/ This is the minimum number of quarters which permanently give an individual "full insured status" for all those under age 45 as of 1937.

Table 9

ILLUSTRATIVE MONTHLY PRIMARY BENEFITS[a/]

Average Monthly Wage[b/]	Increment Years[c/]										
	3	5	10	15	20	25	30	35	40	45	50
$15 & under	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00
20	10.00	10.00	10.00	10.00	10.00	10.00	10.40	10.80	11.20	11.60	12.00
25	10.30	10.50	11.00	11.50	12.00	12.50	13.00	13.50	14.00	14.50	15.00
30	12.36	12.60	13.20	13.80	14.40	15.00	15.60	16.20	16.80	17.40	18.00
35	14.42	14.70	15.40	16.10	16.80	17.50	18.20	18.90	19.60	20.30	21.00
40	16.48	16.80	17.60	18.40	19.20	20.00	20.80	21.60	22.40	23.20	24.00
45	18.54	18.90	19.80	20.70	21.60	22.50	23.40	24.30	25.20	26.10	27.00
50	20.60	21.00	22.00	23.00	24.00	25.00	26.00	27.00	28.00	29.00	30.00
75	23.18	23.63	24.75	25.88	27.00	28.13	29.25	30.38	31.50	32.63	33.75
100	25.75	26.25	27.50	28.75	30.00	31.25	32.50	33.75	35.00	36.25	37.50
125	28.33	28.88	30.25	31.63	33.00	34.38	35.75	37.13	38.50	39.88	41.25
150	30.90	31.50	33.00	34.50	36.00	37.50	39.00	40.50	42.00	43.50	45.00
175	33.48	34.13	35.75	37.38	39.00	40.63	42.25	43.88	45.50	47.13	48.75
200	36.05	36.75	38.50	40.25	42.00	43.75	45.50	47.25	49.00	50.75	52.50
225	38.63	39.38	41.25	43.13	45.00	46.88	48.75	50.63	52.50	54.38	56.25
250	41.20	42.00	44.00	46.00	48.00	50.00	52.00	54.00	56.00	58.00	60.00

a/ i.e., assuming that individual has no eligible child or eligible wife.

b/ As determined by the provisions of the law. It should be noted that the assumption is made that the wage earner is paid at least $50 in the requisite number of calendar quarters to have the necessary insured status.

c/ An "increment year" is used here as meaning any calendar year during which $200 or more of wages in covered employment are received.

Note: This table is also applicable for the total benefits for 2 eligible children or for 2 eligible parents.

Table 10

ILLUSTRATIVE MONTHLY TOTAL BENEFITS FOR PRIMARY BENEFICIARY WITH ONE DEPENDENT[a]

Average Monthly Wage[b]	Increment Years[c]										
	3	5	10	15	20	25	30	35	40	45	50
$15 & under	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00
20	15.00	15.00	15.00	15.00	15.00	15.00	15.60	16.20	16.80	17.40	18.00
25	15.45	15.75	16.50	17.25	18.00	18.75	19.50	20.00	20.00	20.00	20.00
30	18.54	18.90	19.80	20.70	21.60	22.50	23.40	24.00	24.00	24.00	24.00
35	21.63	22.05	23.10	24.15	25.20	26.25	27.30	28.00	28.00	28.00	28.00
40	24.72	25.20	26.40	27.60	28.80	30.00	31.20	32.00	32.00	32.00	32.00
45	27.81	28.35	29.70	31.05	32.40	33.75	35.10	36.00	36.00	36.00	36.00
50	30.90	31.50	33.00	34.50	36.00	37.50	39.00	40.00	40.00	40.00	40.00
75	34.77	35.45	37.13	38.82	40.50	42.20	43.88	45.57	47.25	48.95	50.63
100	38.63	39.38	41.25	43.13	45.00	46.88	48.75	50.63	52.50	54.38	56.25
125	42.50	43.32	45.38	47.45	49.50	51.57	53.63	55.70	57.75	59.82	61.88
150	46.35	47.25	49.50	51.75	54.00	56.25	58.50	60.75	63.00	65.25	67.50
175	50.22	51.20	53.63	56.07	58.50	60.95	63.38	65.82	68.25	70.70	73.13
200	54.08	55.13	57.75	60.38	63.00	65.63	68.25	70.88	73.50	76.13	78.75
225	57.95	59.07	61.88	64.70	67.50	70.32	73.13	75.95	78.75	81.57	84.38
250	61.80	63.00	66.00	69.00	72.00	75.00	78.00	81.00	84.00	85.00	85.00

a/ i.e., assuming that the individual has either one eligible child or an eligible wife.

b/ As determined by the provisions of the law. It should be noted that the assumption is made that the wage earner is paid at least $50 in the requisite number of calendar quarters to have the necessary insured status.

c/ An "increment year" is used here as meaning any calendar year during which $200 or more of wages in covered employment are received.

Note: This table is also applicable for the total benefits for 3 eligible children.

Table 11

ILLUSTRATIVE MONTHLY TOTAL BENEFITS FOR PRIMARY BENEFICIARY WITH TWO OR MORE DEPENDENTS[a]

Average Monthly Wage[b]	Increment Years[c]										
	3	5	10	15	20	25	30	35	40	45	50
$25 & under	$20.00	$20.00	$20.00	$20.00	$20.00	$20.00	$20.00	$20.00	$20.00	$20.00	$20.00
30	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
35	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00
40	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
45	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00
50	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
75	46.36	47.26	49.50	51.76	54.00	56.26	58.50	60.00	60.00	60.00	60.00
100	51.50	52.50	55.00	57.50	60.00	62.50	65.00	67.50	70.00	72.50	75.00
125	56.66	57.76	60.50	63.26	66.00	68.76	71.50	74.26	77.00	79.76	82.50
150	61.80	63.00	66.00	69.00	72.00	75.00	78.00	81.00	84.00	85.00	85.00
175	66.96	68.26	71.50	74.76	78.00	81.26	84.50	85.00	85.00	85.00	85.00
200	72.10	73.50	77.00	80.50	84.00	85.00	85.00	85.00	85.00	85.00	85.00
225	77.26	78.76	82.50	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00
250	82.40	84.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00

a/ i.e., assuming that the individual has either 2 or more eligible children or an eligible wife and 1 or more eligible children.

b/ As determined by the provisions of the law. It should be noted that the assumption is made that the wage earner is paid at least $50 in the requisite number of calendar quarters to have the necessary insured status.

c/ An "increment year" is used here as meaning any calendar year during which $200 or more of wages in covered employment are received.

Note: This table is also applicable for the total benefits for 4 or more eligible children and for eligible widow and 3 or more eligible children.

Table 12

ILLUSTRATIVE MONTHLY SURVIVORS BENEFITS FOR ONE ELIGIBLE CHILD

Average Monthly Wage a/	Increment Years b/ 3	5	10	15	20	25	30	35	40	45	50
$30 & under	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00
35	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.15	10.50
40	10.00	10.00	10.00	10.00	10.00	10.00	10.40	10.80	11.20	11.60	12.00
45	10.00	10.00	10.00	10.35	10.80	11.25	11.70	12.15	12.60	13.05	13.50
50	10.30	10.50	11.00	11.50	12.00	12.50	13.00	13.50	14.00	14.50	15.00
75	11.59	11.82	12.38	12.94	13.50	14.07	14.63	15.19	15.75	16.32	16.88
100	12.88	13.13	13.75	14.38	15.00	15.63	16.25	16.88	17.50	18.13	18.75
125	14.17	14.44	15.13	15.82	16.50	17.19	17.88	18.57	19.25	19.94	20.63
150	15.45	15.75	16.50	17.25	18.00	18.75	19.50	20.25	21.00	21.75	22.50
175	16.74	17.07	17.88	18.69	19.50	20.32	21.13	21.94	22.75	23.57	24.38
200	18.03	18.38	19.25	20.13	21.00	21.88	22.75	23.63	24.50	25.38	26.25
225	19.32	19.69	20.63	21.57	22.50	23.44	24.38	25.32	26.25	27.19	28.13
250	20.60	21.00	22.00	23.00	24.00	25.00	26.00	27.00	28.00	29.00	30.00

a/ As determined by the provisions of the law. It should be noted that the assumption is made that the wage earner is paid at least $50 in the requisite number of calendar quarters to have the necessary insured status.

b/ An "increment year" is used here as meaning any calendar year during which $200 or more of wages in covered employment are received.

Note: This table is also applicable for the benefits for an eligible parent.

Table 13

ILLUSTRATIVE MONTHLY TOTAL SURVIVORS BENEFITS FOR ELIGIBLE WIDOW WITH NO ELIGIBLE CHILDREN

Average Monthly Wage a/	Increment Years b/										
	3	5	10	15	20	25	30	35	40	45	50
$20 & under	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00	$10.00
25	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.13	10.50	10.88	11.25
30	10.00	10.00	10.00	10.35	10.80	11.25	11.70	12.15	12.60	13.05	13.50
35	10.82	11.03	11.55	12.08	12.60	13.13	13.65	14.18	14.70	15.23	15.75
40	12.36	12.60	13.20	13.80	14.40	15.00	15.60	16.20	16.80	17.40	18.00
45	13.91	14.18	14.85	15.53	16.20	16.88	17.55	18.23	18.90	19.58	20.25
50	15.45	15.75	16.50	17.25	18.00	18.75	19.50	20.25	21.00	21.75	22.50
75	17.39	17.72	18.56	19.41	20.25	21.10	21.94	22.79	23.63	24.47	25.31
100	19.31	19.69	20.63	21.56	22.50	23.44	24.38	25.31	26.25	27.19	28.13
125	21.25	21.66	22.69	23.72	24.75	25.79	26.81	27.85	28.88	29.91	30.94
150	23.18	23.63	24.75	25.88	27.00	28.13	29.25	30.38	31.50	32.63	33.75
175	25.11	25.60	26.81	28.04	29.25	30.47	31.69	32.91	34.13	35.35	36.56
200	27.04	27.56	28.88	30.19	31.50	32.81	34.13	35.44	36.75	38.06	39.38
225	28.97	29.54	30.94	32.35	33.75	35.16	36.56	37.97	39.38	40.79	42.19
250	30.90	31.50	33.00	34.50	36.00	37.50	39.00	40.50	42.00	43.50	45.00

a/ As determined by the provisions of the law. It should be noted that the assumption is made that the wage earner is paid at least $50 in the requisite number of calendar quarters to have the necessary insured status.

b/ An "increment year" is used here as meaning any calendar year during which $200 or more of wages in covered employment are received.

Table 14

ILLUSTRATIVE MONTHLY TOTAL SURVIVORS BENEFITS FOR ELIGIBLE WIDOW WITH ONE ELIGIBLE CHILD

Average Monthly Wage a/	Increment Years b/										
	3	5	10	15	20	25	30	35	40	45	50
$15 & under	$12.50	$12.50	$12.50	$12.50	$12.50	$12.50	$12.50	$12.50	$12.50	$12.50	$12.50
20	12.50	12.50	12.50	12.50	12.50	12.50	13.00	13.50	14.00	14.50	15.00
25	12.88	13.13	13.75	14.38	15.00	15.63	16.25	16.88	17.50	18.13	18.75
30	15.45	15.75	16.50	17.25	18.00	18.75	19.50	20.25	21.00	21.75	22.50
35	18.03	18.38	19.25	20.13	21.00	21.88	22.75	23.63	24.50	25.38	26.25
40	20.60	21.00	22.00	23.00	24.00	25.00	26.00	27.00	28.00	29.00	30.00
45	23.18	23.63	24.75	25.88	27.00	28.13	29.25	30.38	31.50	32.63	33.75
50	25.75	26.25	27.50	28.75	30.00	31.25	32.50	33.75	35.00	36.25	37.50
75	28.98	29.54	30.94	32.35	33.75	35.17	36.57	37.98	39.38	40.79	42.19
100	32.19	32.82	34.38	35.94	37.50	39.07	40.63	42.19	43.75	45.32	46.88
125	35.42	36.10	37.82	39.54	41.25	42.98	44.69	46.42	48.13	49.85	51.57
150	38.63	39.38	41.25	43.13	45.00	46.88	48.75	50.63	52.50	54.38	56.25
175	41.85	42.67	44.69	46.73	48.75	50.79	52.82	54.85	56.88	58.92	60.94
200	45.07	45.94	48.13	50.32	52.50	54.69	56.88	59.07	61.25	63.44	65.63
225	48.29	49.23	51.57	53.92	56.25	58.60	60.94	63.29	65.63	67.98	70.32
250	51.50	52.50	55.00	57.50	60.00	62.50	65.00	67.50	70.00	72.50	75.00

a/ As determined by the provisions of the law. It should be noted that the assumption is made that the wage earner is paid at least $50 in the requisite number of calendar quarters to have the necessary insured status.

b/ An "increment year" is used here as meaning any calendar year during which $200 or more of wages in covered employment are received.

Table 15

ILLUSTRATIVE MONTHLY TOTAL SURVIVORS BENEFITS FOR ELIGIBLE WIDOW WITH TWO ELIGIBLE CHILDREN

Average Monthly Wage a/	Increment Years b/										
	3	5	10	15	20	25	30	35	40	45	50
$15 & under	$17.50	$17.50	$17.50	$17.50	$17.50	$17.50	$17.50	$17.50	$17.50	$17.50	$17.50
20	17.50	17.50	17.50	17.50	17.50	17.50	18.20	18.90	19.60	20.00	20.00
25	18.03	18.38	19.25	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
30	21.63	22.05	23.10	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
35	25.24	25.73	26.95	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00
40	28.84	29.40	30.80	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
45	32.45	33.08	34.65	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00
50	36.05	36.75	38.50	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
75	40.57	41.35	43.31	45.29	47.25	49.23	51.19	53.17	55.13	57.10	59.06
100	45.06	45.94	48.13	50.31	52.50	54.69	56.88	59.06	61.25	63.44	65.63
125	49.58	50.54	52.94	55.35	57.75	60.17	62.56	64.98	67.38	69.79	72.19
150	54.08	55.13	57.75	60.38	63.00	65.63	68.25	70.88	73.50	76.13	78.75
175	58.59	59.73	62.56	65.42	68.25	71.10	73.94	76.79	79.63	82.48	85.00
200	63.09	64.31	67.38	70.44	73.50	76.56	79.63	82.69	85.00	85.00	85.00
225	67.60	68.92	72.19	75.48	78.75	82.04	85.00	85.00	85.00	85.00	85.00
250	72.10	73.50	77.00	80.50	84.00	85.00	85.00	85.00	85.00	85.00	85.00

a/ As determined by the provisions of the law. It should be noted that the assumption is made that the wage earner is paid at least $50 in the requisite number of calendar quarters to have the necessary insured status.

b/ An "increment year" is used here as meaning any calendar year during which $200 or more of wages in covered employment are received.

Table 16

ILLUSTRATIVE LUMP-SUM DEATH PAYMENTS

Average Monthly Wage[a]	Increment Years[b] 3	5	10	20	30	40	50
$15 & under	$ 60.00	$ 60.00	$ 60.00	$ 60.00	$ 60.00	$ 60.00	$ 60.00
20	60.00	60.00	60.00	60.00	62.40	67.20	72.00
25	61.80	63.00	66.00	72.00	78.00	84.00	90.00
30	74.16	75.60	79.20	86.40	93.60	100.80	108.00
35	86.52	88.20	92.40	100.80	109.20	117.60	126.00
40	98.88	100.80	105.60	115.20	124.80	134.40	144.00
45	111.24	113.40	118.80	129.60	140.40	151.20	162.00
50	123.60	126.00	132.00	144.00	156.00	168.00	180.00
75	139.08	141.78	148.50	162.00	175.50	189.00	202.50
100	154.50	157.50	165.00	180.00	195.00	210.00	225.00
125	169.98	173.28	181.50	198.00	214.50	231.00	247.50
150	185.40	189.00	198.00	216.00	234.00	252.00	270.00
175	200.88	204.78	214.50	234.00	253.50	273.00	292.50
200	216.30	220.50	231.00	252.00	273.00	294.00	315.00
225	231.78	236.28	247.50	270.00	292.50	315.00	337.50
250	247.20	252.00	264.00	288.00	312.00	336.00	360.00

a/ As determined by the provisions of the law. It should be noted that the assumption is made that the wage earner is paid at least $50 in the requisite number of calendar quarters to have the necessary insured status.

b/ An "increment year" is used here as meaning any calendar year during which $200 or more of wages in covered employment are received.

Table 17

ILLUSTRATIVE MONTHLY PRIMARY BENEFITS FOR VARIOUS AVERAGE WEEKLY WAGES[a]

Average Weekly Wage[a]	Increment Years[b] 3	5	10	20	30	40	50
				With No Allowance For Dependent[c]			
$ 5	$10.00	$10.00	$10.00	$10.40	$11.27	$12.14	$13.00
10	17.85	18.20	19.06	20.80	22.53	24.26	25.99
15	22.14	22.57	23.65	25.80	27.95	30.10	32.25
20	24.38	24.85	26.04	28.40	30.77	33.14	35.50
25	26.60	27.12	28.41	31.00	33.58	36.16	38.74
30	28.84	29.40	30.80	33.60	36.40	39.20	42.00
35	31.08	31.68	33.19	36.20	39.22	42.24	45.25
40	33.30	33.95	35.56	38.80	42.03	45.26	48.49
45	35.53	36.22	37.95	41.40	44.85	48.30	51.75
50	37.77	38.50	40.34	44.00	47.67	51.34	55.00
55	39.90	40.77	42.71	46.60	50.48	54.36	58.24
57.70[d]	41.20	42.00	44.00	48.00	52.00	56.00	60.00
				With Allowance For One Dependent[e]			
$ 5	$15.00	$15.00	$15.00	$15.60	$16.90	$18.21	$19.50
10	26.77	27.30	28.59	31.20	33.79	34.66	34.66
15	33.21	33.85	35.47	38.70	41.92	45.15	48.37
20	36.57	37.27	39.06	42.60	46.15	49.71	53.25
25	39.90	40.68	42.61	46.50	50.37	54.24	58.11
30	43.26	44.10	46.20	50.40	54.60	58.80	63.00
35	46.62	47.52	49.78	54.30	58.83	63.36	67.87
40	49.95	50.92	53.34	58.20	63.04	67.89	72.73
45	53.29	54.33	56.92	62.10	67.27	72.45	77.62
50	56.65	57.75	60.51	66.00	71.50	77.01	82.50
55	59.85	61.15	64.06	69.90	75.72	81.54	85.00
57.70[d]	61.80	63.00	66.00	72.00	78.00	84.00	85.00

a/ Total credited wages divided by 13 times the number of "potential working quarters" (based on exactly 52 weeks to a year).

b/ An "increment year" is any calendar year during which $200 or more of wages in covered employment were received.

c/ i.e., assuming that the individual has no eligible child or eligible wife.

d/ The maximum weekly wage creditable since it is $3000 on an annual basis (based on exactly 52 weeks to a year).

e/ i.e., assuming that the individual has either one eligible child or an eligible wife.

Table 18

MONTHLY PRIMARY BENEFITS AS PERCENTAGE OF "AVERAGE MONTHLY WAGE"[a]

Increment Years[b]	Number of Eligible Dependents: None	1	2 or more	Number of Eligible Dependents: None	1	2 or more
	Average Monthly Wage of $25			Average Monthly Wage of $50		
3	41%	62%	80%	41%	62%	80%
5	42	63	80	42	63	80
10	44	66	80	44	66	80
20	48	72	80	48	72	80
30	52	78	80	52	78	80
40	56	80	80	56	80	80
50	60	80	80	60	80	80
	Average Monthly Wage of $75			Average Monthly Wage of $100		
3	31%	46%	62%	26%	39%	52%
5	31	47	63	26	39	52
10	33	49	66	28	41	55
20	36	54	72	30	45	60
30	39	58	78	32	49	65
40	42	63	80	35	52	70
50	45	67	80	38	56	75
	Average Monthly Wage of $150			Average Monthly Wage of $250		
3	21%	31%	41%	16%	25%	33%
5	21	31	42	17	25	34
10	22	33	44	18	26	34
20	24	36	48	19	29	34
30	26	39	52	21	31	34
40	28	42	56	22	34	34
50	30	45	57	24	34	34

a/ As determined by the provisions of the law.

b/ An "increment year" is any calendar year during which $200 or more of wages in covered employment were received.

Note: It is assumed that the eligible dependents are not in receipt of any other benefits under Title II.

Table 19

MONTHLY BENEFITS FOR ELIGIBLE WIDOW AS PERCENTAGE OF "AVERAGE WAGE" OF DECEASED HUSBAND[a]

Increment Years[b]	Number of Eligible Children: None	1	2	3 or more	Number of Eligible Children: None	1	2	3 or more
	Average Monthly Wage of $25				Average Monthly Wage of $50			
3	40%	51%	72%	80%	31%	51%	72%	80%
5	40	52	74	80	32	52	74	80
10	40	55	77	80	33	55	77	80
20	40	60	80	80	36	60	80	80
30	40	65	80	80	39	65	80	80
40	42	70	80	80	42	70	80	80
50	45	75	80	80	45	75	80	80
	Average Monthly Wage of $75				Average Monthly Wage of $100			
3	23%	39%	54%	62%	19%	32%	45%	52%
5	24	39	55	63	20	33	46	52
10	25	41	58	66	21	34	48	55
20	27	45	63	72	22	38	52	60
30	29	49	68	78	24	41	57	65
40	31	52	73	80	26	44	61	70
50	34	56	79	80	28	47	66	75
	Average Monthly Wage of $150				Average Monthly Wage of $250			
3	15%	26%	36%	41%	12%	21%	29%	33%
5	16	26	37	42	13	21	29	34
10	16	27	38	44	13	22	31	34
20	18	30	42	48	14	24	34	34
30	19	32	46	52	16	26	34	34
40	21	35	49	56	17	28	34	34
50	22	37	52	57	18	30	34	34

a/ As determined by the provisions of the law.

b/ An "increment year" is any calendar year during which $200 or more of wages in covered employment were received.

Note: It is assumed that neither the eligible widow nor the eligible children are in receipt of any other benefits under Title II.

Table 20

MONTHLY PRIMARY BENEFITS FOR INDIVIDUAL EMPLOYED CERTAIN PROPORTIONS OF THE TIME BETWEEN 1936 AND AGE 65

Age in 1937	Quarters in Which Employed (Between 1936 and Age 65) All	75%	50%	Exactly 40
	Level Monthly Wage of $25 While Employed			
25	$14.00	$10.00	$10.00	$10.00
30	13.50	10.00	10.00	10.00
35	13.00	10.00	10.00	10.00
40	12.50	10.00	10.00	10.00
45	12.00	10.00	10.00	10.00
50	11.50	10.00	10.00	10.00
55	11.00	10.00	10.00	11.00
60	10.50	10.00	10.00	---
	Level Monthly Wage of $50 While Employed			
25	$28.00	$19.50	$12.00	$10.00
30	27.00	18.90	11.70	10.00
35	26.00	18.30	11.50	10.00
40	25.00	17.70	11.20	10.00
45	24.00	17.25	11.00	11.00
50	23.00	16.65	10.70	14.66
55	22.00	16.05	10.50	22.00
60	21.00	15.45	10.20	---
	Level Monthly Wage of $100 While Employed			
25	$35.00	$29.25	$24.00	$11.00
30	33.75	28.35	23.40	12.57
35	32.50	27.45	23.00	14.66
40	31.25	26.55	22.40	17.60
45	30.00	25.87	22.00	22.00
50	28.75	24.97	21.40	23.84
55	27.50	24.07	21.00	27.50
60	26.25	23.17	20.40	---
	Level Monthly Wage of $250 While Employed			
25	$56.00	$43.87	$33.00	$23.37
30	54.00	42.52	32.17	24.35
35	52.00	41.17	31.62	25.66
40	50.00	39.82	30.80	27.50
45	48.00	38.81	30.25	30.25
50	46.00	37.46	29.42	34.84
55	44.00	36.11	28.87	44.00
60	42.00	34.76	28.05	---

Note: It is assumed that the individual works in covered employment at the given wage during the various proportions of the quarters with no covered employment in the remainder of the quarters. The 1% increment per increment year is here based on the integral part of the product $\frac{1}{4}$ times the quarters employed (e.g., 6% increment for 27 quarters).

C. Effect of 1939 Amendments on Benefit Payments Under Original Act

Besides providing a new pattern of benefits and beneficiary categories, the 1939 Amendments contain a number of provisions to facilitate merger with the original Act. The only benefits payable under the original Act prior to 1942 were lump-sums for deaths and for attainments of age 65 after 1936. This section will deal briefly with the provisions of the 1939 Amendments which affect the benefit payments arising under the original Act in respect to the period 1937-39.

The 1939 Amendments removed, retroactively to January 1, 1939, the limitation in the original Act which excluded wages earned after age 65 from both creditable wages and taxes. Thus, all wages earned during 1939 by individuals aged 65 and over are taxed and are creditable under the 1939 Amendments, but are not creditable in respect to benefit payments under the original Act. The effect of this will be taken up in detail in the subsequent discussion.

The lump-sum payments under the original Act which were available upon attainment of 65 were discontinued August 10, 1939 immediately upon the enactment of the 1939 Amendments. The reason for this provision was that the great majority of the eligible individuals would probably qualify for primary benefits in 1940 and would otherwise have had to have deductions made from their monthly benefits to compensate for the lump-sum payment. Thus the Board was saved the administrative work of paying benefits which would only have had to be deducted later.

In a few cases such covered workers might suffer a financial loss as a result of this provision. This could occur if they had some credited wages before 65 in 1937-39 but not enough for six quarters of coverage and if they did not continue working after age 65 to become fully insured. Such a person could have obtained a lump-sum "life" claim if he had filed prior to August 10, 1939, and the adjudication had been completed by then. Payment as a lump-sum "death" claim would be possible for death prior to January 1, 1940,1/ but if he survived to this date, no benefit would be available unless fully insured status were obtained.

The lump-sum "death" benefits in respect to those who died prior to 1940 are unaffected by the 1939 Amendments. They may be claimed at any time in 1939 or thereafter.1/

A rather unusual situation arises for persons who were over age 65 in 1939 and who died after August 10, 1939 but prior to 1940. As mentioned previously, their wages were taxable, but no credit was given for the benefits of the original Act. Thus, such an individual who died in 1939 received

1/ No time limit is set up for these death benefit payments as there is in the case of the lump-sum death payments under the 1939 Amendments for death after 1939; the latter must be claimed within two years after the date of death.

no benefit payments in respect to wages in that year although he may have received benefits in respect to wages earned before age 65 in 1937-39. For example, consider an individual who regularly earns $100 per month in covered industry and who attained age 65 on February 1, 1939. If a life claim had been filed after February 1 and had been completely adjudicated prior to August 10, he would have received a lump-sum payment of $87.50 (.035 x $2500). Similarly, if he died on December 1, the same amount would still be payable despite the fact that taxes had been paid on his wages for the period between February 1 and December 1. However, if he survived to 1940, he would be eligible for primary benefits at that time. In the case of a similar $100 individual who attained age 65 during 1937 or 1938 and who died toward the end of 1939, taxes would have been paid in respect to wages earned before his 65th birthday and during all of 1939 prior to his death but not during 1937-38 after his 65th birthday. On the other hand, the $3\frac{1}{2}\%$ lump-sum death benefit would be based only on the wages earned in 1937-38 prior to his 65th birthday and therefore would not coincide with the tax-paying period.

The first step away from individual equity and toward the social adequacy principles of social insurance was taken in respect to the taxing in 1939 of wages of those over age 65 and the giving of no benefits therefor in case the individual died before 1940. If he survived to 1940, he would have the opportunity of becoming fully insured and thus being eligible for monthly benefits. Except for this category, all individuals dying before 1940 were assured complete individual equity in that their benefits were, in all cases, greater than the taxes which they themselves had paid.

D. Comparison of Illustrative Benefits Under 1939 Amendments and Under Original Act

The original Act provided monthly benefits only for qualified aged individuals and lump-sum payments for those dying before 65, for those dying after 65 before receiving a certain minimum amount of monthly benefits, and for those reaching 65 without being qualified for monthly benefits. In this section a brief comparison will be made between the illustrative benefits under the two acts for qualified aged individuals and for those dying before 65 leaving no surviving wife, child under 18, or dependent parent.

Although individuals may qualify under the 1939 Amendments with a shorter period of coverage than under the original Act, nevertheless in some few cases the 1939 Amendments may not be advantageous to certain individuals. For example, consider an individual who will attain age 65 in January 1942 and who received $3000 of wages in 1937 and less than $50 in each of the calendar years 1938-41; he would be eligible for a monthly benefit of slightly more than $15 under the original Act, whereas under the 1939 Amendments he would receive no benefit at all since he would not be fully insured.

Table 21 shows that the benefits payable in the early years will be appreciably larger under the 1939 Amendments than under the original Act, especially for married persons. For example, for 5 years of coverage the $50 individual will receive about 40% more if he has no eligible dependent and 110% more if he has. For the $100 individual the corresponding increases are 50% and 125%, respectively, while for the $250 individual they are 68% and 152%. Although the benefit formula is heavily weighted in favor of lower paid individuals, nevertheless for those retiring in the next few years the 1939 Amendments as compared to the 1935 Act give relatively more for the higher paid individuals than for the lower paid ones. Obviously the absolute amount of increase of benefits is much greater for the former group than for the latter. For example, the single worker with a wage of $50 receives $6 more in benefits, whereas the similar $250 one receives $17 more.

Next considering those with long periods of coverage, it may be seen that even for those with low wages the benefits for single persons are appreciably smaller than under the original Act. For the $50 individual with 40 years of coverage the decrease is about 15%, while for those receiving $100 or more it is over 30%. However, for the married man who receives an allowance for an eligible wife the benefits, regardless of wage level, will be greater in almost all instances. For 40 years of coverage this excess is, however, quite small, being only $1-3 for a monthly wage of $100 or greater.

In considering the benefits payable 40 years hence, several points should be kept in mind: First, many who would have qualified under the provisions of the original Act will not be eligible under the 1939 Amendments.[k] Second, due to the method of calculating the "average monthly wage" in the 1939 Amendments, many individuals who do qualify for benefits will receive the minimum of $10, whereas under the original Act they might have received $15 or more for only a modicum of employment. Third, under the 1939 Amendments many workers who have aged wives will nevertheless receive the benefits shown in the "single" column, if their wives are primary annuitants in their own right. Thus, for example, suppose that a man and his wife both work for 40 years after 1936 at a level monthly

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k/ For those attaining age 65 after 1956 almost all who qualify as fully insured under the 1939 Amendments would have qualified under the original Act (since 40 quarters of coverage results in at least $2000 of total wages and in employment in 1 or more days of 10 or more calendar years, whereas only $2000 and 5 years were required under the original Act). The only possible exception is in the case of those who fulfill the qualifying requirements under the 1939 Amendments after attaining age 65. For example, consider a person reaching 65 in 1957 who then has only 30 quarters of coverage, and $1800 of total wages but who subsequently obtains 10 quarters of coverage. He would then be eligible under the 1939 Amendments, but he would have been permanently disqualified under the original Act since he was not eligible at age 65.

wage of $100. Under the original Act each would have received $51.25, while under the 1939 Amendments they will each get only $35.00. No wife's benefit is paid since her own benefit is greater than 50% of her husband's. Fourth, for the great majority of covered women the benefits will be reduced since they receive no supplement if they have an aged husband and thus are always in the "single" category.

Table 22 presents a comparison of the lump-sum death payments under the two acts. Under the original Act those dying before age 65 received only a lump-sum payment (always larger than the taxes which they themselves had paid). On the other hand, under the 1939 Amendments a lump-sum death payment is made only when the individual is fully or currently insured and leaves no surviving dependent eligible for immediate monthly survivors' benefits; the amount payable bears no fixed relation to the taxes paid and in many instances may be appreciably smaller. Considering first individuals with 3 years of coverage, which is perhaps the "typical" case for deaths in the early part of 1940, it may be seen that where the average monthly wage is less than $150, the 1939 Amendments provide a larger death benefit than the 1935 Act and vice versa. On the other hand, after 5 years of coverage the death benefit under the original Act is greater in almost all instances. For 40 years of coverage the death benefit under the original Act is five times as large for the $50 man and more than twelve times greater for the $250 man.

This section, in comparing illustrative benefits under the original Act and under the 1939 Amendments, has attempted to show the shift in basic philosophy, away from the individual equity viewpoint toward social adequacy. For those retiring in the immediate future not only are the eligibility conditions made more liberal, but also the benefits payable are increased in almost all cases, especially where there is an eligible wife present. For youths now entering covered employment the benefits payable for death prior to retirement are on a much sounder social basis; namely, monthly benefits are provided for certain surviving eligible dependents with only a small lump-sum payment otherwise. This contrasts with the original Act which gave a lump-sum payment bearing no relation to the needs of any surviving dependents. As shown in Table 22 the transitions from the original Act to the 1939 Amendments was relatively smooth since there was not too sharp a "break" in the lump-sum death benefits as between those dying just before January 1, 1940 and those dying just after that date.

E. Actuarial Analysis of the Benefits for Individual Cases

Although complete individual equity has been, to a great extent, eliminated in the 1939 Amendments as contrasted to the original Act, nevertheless it may be said that it still is present on a "group" basis. Under the original Act all persons were guaranteed to receive at least as much in benefits as they had paid in taxes (counting only the employee tax and not the employer tax); this might be termed "complete individual

Table 21

ILLUSTRATIVE MONTHLY OLD-AGE INSURANCE BENEFITS UNDER ORIGINAL ACT AND UNDER 1939 AMENDMENTS

Years of Coverage a/	Original Act	1939 Amendments		Original Act	1939 Amendments	
		Single b/	Married c/		Single b/	Married c/
	Average Monthly Wage of $50			Average Monthly Wage of $100		
3	d/	$20.60	$30.90	d/	$25.75	$38.63
5	$15.00	21.00	31.50	$17.50	26.25	39.38
10	17.50	22.00	33.00	22.50	27.50	41.25
20	22.50	24.00	36.00	32.50	30.00	45.00
30	27.50	26.00	39.00	42.50	32.50	48.75
40	32.50	28.00	40.00	51.25	35.00	52.50
	Average Monthly Wage of $150			Average Monthly Wage of $250		
3	d/	$30.90	$46.35	d/	$41.20	$61.80
5	$20.00	31.50	47.25	$25.00	42.00	63.00
10	27.50	33.00	49.50	37.50	44.00	66.00
20	42.50	36.00	54.00	56.25	48.00	72.00
30	53.75	39.00	58.50	68.75	52.00	78.00
40	61.25	42.00	63.00	81.25	56.00	84.00

a/ It is assmed, with respect to the 1939 amendments, that an individual is paid at least $200 in each year of coverage in order to be eligible to receive the 1% increment. If this were not the case, the benefit would be somewhat lower.

b/ Benefits for an individual who receives no supplement for dependents.

c/ Benefits for a married couple without children where wife is eligible for a supplement.

d/ Benefits not paid until after 5 years of coverage.

Table 22

ILLUSTRATIVE LUMP-SUM DEATH PAYMENTS UNDER ORIGINAL ACT AND UNDER 1939 AMENDMENTS[a]

(All figures rounded to the nearest dollar)

Years of Coverage[b]	Original Act	1939 Amendments	Original Act	1939 Amendments
	Average Monthly Wage of $50		Average Monthly Wage of $100	
3	$ 63	$124	$126	$154
5	105	126	210	157
10	210	132	420	165
20	420	144	840	180
30	630	156	1,260	195
40	840	168	1,680	210
	Average Monthly Wage of $150		Average Monthly Wage of $250	
3	$189	$185	$315	$247
5	315	189	525	252
10	630	198	1,050	264
20	1,260	216	2,100	288
30	1,890	234	3,150	312
40	2,520	252	4,200	336

a/ Under the original act the benefit is paid for all deaths before age 65; for deaths after 65 the amount of monthly benefits received is deducted so that for deaths after monthly benefits have been received for a long time, no death benefit may be payable. Under the 1939 amendments the benefit is paid only where no survivors are eligible for immediate monthly benefits; the amount shown above is paid in all such cases with no deductions for any monthly benefits which the individual received prior to death.

b/ It is assumed, with respect to the 1939 amendments, that the individual received at least $200 in each year of coverage in order to be eligible to receive the 1% increment. If this were not the case, the benefit would be somewhat lower.

equity." On the other hand, under the 1939 Amendments this is not true for all individuals, but those of a given group (such as single persons entering in 1937 at age 25 with a level wage of $3000 per year) will obtain on the average at least as much in benefits as the taxes they paid; this might be termed "group equity."

There are a small proportion of cases in which no benefits whatsoever are payable even though taxes had been paid, some of which are as follows:

1. Those who die after 1939 without being either currently or fully insured.

2. Currently or fully insured widowers (or widows) dying prior to receiving primary benefits, who leave children 16-18 who are not attending school.

3. Currently or fully insured individuals dying prior to receiving primary benefits where no surviving dependents are eligible (or later become eligible) for monthly benefits, and the lump-sum death payment is not filed for within two years.

4. Fully insured individuals dying prior to receiving primary benefits where the widow (or parent) is over 65 but dies prior to filing claim for monthly benefits.

5. Individuals dying prior to 1940 whose only taxable wages were received after age 65 in 1939.

From the standpoint of social adequacy there is no great injustice in taxing the above categories even though no benefits are available. In the great majority of the cases, either the amount of taxes paid would be quite negligible or else there would be less chance of serious social need to be taken care of by any payment. In a few extreme cases the amount of taxes paid might be very large and yet no benefit would be available regardless of the actions of any surviving dependent. For example, consider an individual who enters coverage in 1940 at age 25 and has seasonal jobs which give him earnings of $3000 in the last quarter of each calendar year. As a result, he pays taxes on $3000 per year but receives credit for only one quarter of coverage in each calendar year. If this individual dies in the beginning of 1979, he will have paid taxes on $117,000 (amounting to $3,195 based on the tax schedule of the 1939 Amendments), but will not be fully or currently insured. Under the 1935 Act a lump-sum payment of $4,095 would have been available. Of course, in this extreme case the individual probably would have had some other employment during the first three quarters of each calendar year so that he might be said to be an individual who was not primarily under the insurance program.

It will now be shown that "group equity" is present for all individuals who work steadily in covered employment during their entire lifetime. This must be true in all cases if it is so for the rather extreme case of individuals entering at age 20 with a level annual wage of $3000 after the 3% tax rate is in effect. It will further be assumed that these men remain single and have no survivors eligible for benefits. Thus, there will be available only the lump-sum death payment and the primary benefits at age 65. It may be of interest to the reader to follow through the simple actuarial calculations involved. Several minor approximations have been made so that strict actuarial accuracy is not present, but the errors introduced are so small relatively as to have little effect on the results.

It is assumed that there is a group of 1000 men entering at age 20 who will experience mortality exactly the same as that shown by the U.S. White Males 1920-29 Mortality Table.1/ Out of the 1000 entrants, 404 will die prior to age 65 with an average age at death of 50 so that the average length of coverage is 30 years. The lump-sum death payment available will range from $245 to $348 and will average $312 (6 x 1.30 x $40). The total benefits received by these 404 individuals will be $126,000 (404 x $312). Similarly, this group will pay total taxes (excluding taxes paid by their employers) of $1,091,000 (404 x 30 x $90) so that the benefits received will represent only 12% of the taxes paid.

The remaining 596 men will survive to age 651/ and live, on the average, 11.8 years thereafter. Each of them will receive a monthly benefit of $58 and a lump-sum death payment of $348. As a result, the total benefits paid to these 596 men will be $5,102,000 (596 x $348 + 596 x 12 x 11.8 x $58). Similarly, for this group the total taxes paid (excluding taxes paid by employers) will amount to $2,413,000 (596 x 45 x $90) so that the benefits received will represent more than twice the taxes paid (actually 211%).

From the preceding discussion it may be seen that those who live to age 65 receive on the average much more in benefits than they pay in taxes, while on the other hand, the group that dies before 65 receives only about 1/10 as much as their taxes. Next considering the entire group of 1000 men, the total benefits paid are $5.228,000, while the total taxes are $3,504,000, so that the benefits are 149% of the taxes. Thus, the principle of "group equity" is maintained for these high paid individuals entering at a young age. Each of the individuals upon entry at age 20 could look forward and be assured that he would have a better than average chance of getting more in benefits than he will pay in taxes. The principles of social adequacy and of sharing the risk (the primary purpose of any type of insurance) are both present in that if he dies before old-age leaving no survivors, his post-mortem needs are small, while if he lives to old age (i.e. the contingency insured against), he will probably receive more than he himself has paid. This can occur

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1/ If the U.S. White Females 1920-29 Table had been used instead, the number surviving to age 65 would be 643 instead of 596.

because of those who insured against the risk of becoming old but failed to have that contingency take place due to prior death.

There is a close analogy between the previous situation and fire or automobile liability insurance. When an individual insures his house against fire, he does not expect a conflagration in order to get his money back. On the other hand, most people who take out fire insurance do not have fires, but those few who do receive indemnity far greater than the premiums they paid in themselves.

If the illustrative group of 1000 individuals had not retired at age 65, the earliest possible date, but instead had worked until an older age, the amount of benefits would be appreciably less, while the amount of taxes paid would be slightly more due to employment after age 65. For example, if none retired until age $67\frac{1}{2}$ (of the 596 who survived to 65, 58 die before $67\frac{1}{2}$ and thus receive only lump-sum death payments), the total benefits for the entire 1000 men would be $4,312,000. The total taxes (excluding taxes paid by employers) would be $3,631,000 so that the amount received in benefits would still be 19% greater than the amount paid in taxes. Unless a retirement age of 70 or greater were chosen, the principle of "group equity" would still be followed. If women had been considered instead of men or if a "forecast" mortality table had been used, "group equity" would have been present to an even greater extent.m/

The previous discussion of group and individual equity was based merely on the benefits received and the taxes paid without any regard to the incidence of payment. One method of differentiating between monetary payments made at different times is to assume that interest will be earned on any excess monies available as will actually be the case in the administration of the trust fund. This principle may be used in another test of "group equity;" again there may be considered single individuals entering in 1937 who do not have and will never have any eligible dependents. The annuity which could be purchased from an insurance company with the taxes paid by the employee might then be compared to that under the 1939 Amendments.

Unfortunately for this discussion, no insurance company sells a contract or combination of contracts which exactly duplicates the benefits under the 1939 Amendments. Therefore, individual calculations have been made using as a basis the Standard Annuity Tablen/ at 3% interest. The theoretical premiums are taken to be 90% of the taxes (10% being assumed for expense) and are first used to purchase a death benefit which is identical with that under the 1939 amendments. The remainder

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m/ The lower mortality rates would result in more persons surviving to retirement age and in a longer lifetime thereafter. Although the taxes paid would be slightly larger (due to less deaths before retirement), this would be more than offset by the larger amount of old-age benefits received.
n/ Most of the large insurance companies are now using this table in calculating the premiums for both individual and group annuity contracts.

of the taxes, if any, is used to purchase a deferred annuity with no death benefit. The amount of this annuity is then compared with the primary benefit. It is assumed that the individual retires at age 65 and does not engage in regular employment thereafter. The benefits resulting are not actually available from insurance companies, but are roughly those which would be given if such a contract were sold.

Table 23 shows these theoretically purchasable monthly annuities as compared to the primary benefit for various level monthly wages and years of coverage. All individuals who were over 60 on January 1, 1937 could not obtain any purchasable annuity since the entire amount of the taxes is used in purchasing the death benefit. The purchasable annuity for those aged 20 in 1937 is only about one-third of the primary benefit under the 1939 Amendments for the $50 individual, but almost exactly the same for the $250 person. It may thus be seen from a consideration of Table 23 that practically all those who enter the system in 1937 and continue in covered employment until age 65, retiring completely then, will receive at least as much under the 1939 Amendments as would be purchasable on an actuarial equivalent basis with the taxes which they themselves pay.

Table 24 shows the theoretically puchasable monthly annuity for those who enter the system in or after 1949 when the tax rate reaches its maximum of 3%. Figures are presented on two bases: first, for individuals entering in 1949; and second, for entrants after 1949 who attained age 22 after 1937. The purchasable annuities shown in this table are considerably larger than those shown in Table 23 since more taxes are available as premiums. On the other hand, the benefits under the 1939 Amendments are lower in most instances since the individual's average wage will be much lower than his level wage since it is based on the period from 1937 (or age 22 if later) to attainment of age 65. The average is reduced by having no earnings between 1936 and 1949 (or age 22 and age at entry as the case may be). The average wage (and thus the primary benefit) for those entering in 1949 will always be equal to or greater than for those entering after 1949 who attained age 22 after 1937. For the first group the "potential working quarters" are those between 1936 (or attainment of 22 if later) and attainment of age 65, while for the second group the number is always 172 (4 x 43) except for entrants at age 20 (then 4 x 45 = 180). For ages at entry 20 and 25 the two groups are identical since entrants in or after 1949 who are age 34 or under must have attained age 22 in or after 1937.

For the older ages at entry the benefits under the 1939 Amendments are appreciably higher than the purchasable annuity despite the fact that the average wage is reduced considerably by the short period of coverage. The purchasable annuity is greater than the primary annuity for $250 individuals entering at about ages 30 or under and also for those entering at age 20 with a level monthly wage of $150 or more.

Although the principle of "group equity" appears to be violated for those entering at young ages in 1949 and thereafter and maintaining

Table 23

THEORETICAL MONTHLY ANNUITIES PURCHASABLE[a] WITH EMPLOYEE TAX ALONE[b] FOR SINGLE MEN ENTERING IN 1937[c]

(With 10% Allowance for Expense)

Age in 1937[d]	1939 Amendments	Purchasable Annuity	1939 Amendments	Purchasable Annuity
	Level Monthly Wage of $50		Level Monthly Wage of $100	
62	$20.60	*	$25.75	*
60	21.00	*	26.25	*
55	22.00	*	27.50	$ .41
45	24.00	$ 1.55	30.00	3.95
35	26.00	4.25	32.50	9.51
25	28.00	8.16	35.00	17.49
20	29.00	10.68	36.25	22.58
	Level Monthly Wage of $150		Level Monthly Wage of $250	
62	$30.90	*	$41.20	*
60	31.50	*	42.00	*
55	33.00	$ .94	44.00	$ 1.99
45	36.00	6.35	48.00	11.14
35	39.00	14.77	52.00	25.30
25	42.00	26.81	56.00	45.46
20	43.50	34.49	58.00	58.30

* Taxes are used up entirely in purchasing death benefit so that no annuity is purchasable.

a/ According to the Standard Annuity Table at 3% interest. Taxes less 10% allowance for expense are used as theoretic premiums; such benefits resulting are not actually available from insurance companies. It is assumed that retirement takes place at the earliest possible moment (i.e. age 65). Part of the taxes are used to purchase a death benefit which is identical with that under the 1939 Amendments. The remainder of the taxes is used to purchase a deferred annuity with no death benefit. It is assumed that the individual does not engage in "regular employment" after retirement.

b/ 1% tax rate is maintained until 1942. Rate thereafter is 2% in 1943-45, 2½% in 1946-48, and 3% in 1949 and thereafter.

c/ It is assumed that coverage is continuous from age at entry to age 65 and that the individual remains single for his entire lifetime and has no survivors eligible for benefits.

d/ It is assumed that the individual is the exact age shown on January 1, 1937.

Table 24

THEORETICAL MONTHLY ANNUITIES PURCHASABLE[a] WITH EMPLOYEE TAX[b] ALONE FOR SINGLE MEN ENTERING IN 1949 AND FOR SINGLE MEN ENTERING AFTER 1949 WHO ATTAINED AGE 22 AFTER 1937[c]

(With 10% Allowance for Expense)

Age at Entry[d]	1939 Amendments: Entering in 1949	1939 Amendments: Age 22 After 1937	Purchasable Annuity	1939 Amendments: Entering in 1949	1939 Amendments: Age 22 After 1937	Purchasable Annuity
	Level Monthly Wage of $50			Level Monthly Wage of $100		
55	$10.00	$10.00	$ .75	$20.00	$10.23	$ 2.14
45	15.00	11.16	2.93	25.50	22.32	6.70
35	18.56	18.13	6.21	28.78	28.57	13.44
25	26.04	26.04	10.88	34.02	34.02	22.93
20	29.00	29.00	13.85	36.25	36.25	28.94
	Level Monthly Wage of $150			Level Monthly Wage of $250		
55	$24.00	$15.34	$ 3.52	$29.00	$22.89	$ 6.30
45	29.24	26.38	10.48	36.74	31.96	18.02
35	33.42	33.10	20.67	42.72	42.17	35.13
25	40.53	40.53	34.97	53.56	53.56	59.06
20	43.50	43.50	44.02	58.00	58.00	74.20

a/ According to the Standard Annuity Table at 3% Interest. Taxes less 10% allowance for expense are used as theoretic premiums; such benefits resulting are not actually available from insurance companies. It is assumed that retirement takes place at the earliest possible moment (i.e. age 65). Part of the taxes are used to purchase a death benefit which is identical with that under the 1939 Amendments. The remainder of the taxes is used to purchase a deferred annuity with no death benefit. It is assumed that the individual does not engage in "regular employment" after retirement.

b/ In all cases the tax rate is 3%.

c/ It is assumed that coverage is continuous from age at entry to age 65 and that the individual remains single for his entire lifetime and has no survivors eligible for benefits. For those entering in 1949 the "average monthly wage" is determined for the period from 1937 to age 65, while for those entering after 1949 who attained age 22 after 1937 the corresponding period is 43 years (i.e. from age 22 to age 65) except for entrants at age 20 when it is 45 years.

d/ It is assumed that the individual enters covered employment on January 1 of the given year, at the exact age shown.

a high salary level, this is not serious since it applies to the extreme cases; also by that time the assumptions now made as to interest and mortality might be untenable. It might be pointed out that if a 2½% interest rate (the current average rate on Federal bonds) were used, the purchasable annuities would be appreciably smaller and in almost all cases would be smaller than the benefits under the 1939 Amendments. For the most extreme case shown—that for age at entry 20 with a level monthly wage of $250—the purchasable annuity would be $61.77 or only slightly higher than the monthly primary benefit of $58.

A great deal of interest has been aroused in the survivors benefits which are provided under the 1939 Amendments. As a result of these benefits, it might be said that a large amount of "life insurance value" has been provided the wage earners of the country. For individuals with young children the amount of such "life insurance value" ranges in most cases from $5,000 to $10,000, being as great as $15,000 in a few instances; for older individuals with no children but a wife over age 50 corresponding figures are $1,000 to $3,000. The aggregate amount of "life insurance value" under the program in 1940 is estimated to be in the neighborhood of $40-50 billion. For further details and a more complete analysis the reader is referred to Actuarial Study No. 16 entitled "Estimated Amount of Life Insurance Value in Force under Survivors Benefits of the Old-Age and Survivors Insurance System."

Finally, there will be analyzed the actuarial cost of the benefits for several assumed typical cases where a wife and children may be present (see Table 25). The method of analysis will be to show the net level premiums required to purchase the benefits expressed as a percentage of payroll, such premiums to be paid each year from entry to age 65.o/ Comparisons are made for three cases: first, where there are children present and the wife is not an annuitant in her own right; second, where no children are present and the wife is not an annuitant in her own right; and third, where there are no children present and the wife is an annuitant in her own right receiving more than 75% of her husband's primary benefit (this latter case is the same as for a single man). Figures for the first two cases are identical for ages 45 and over since then both children are over age 18 on January 1, 1940 under the assumptions made.

An examination of Table 25 indicates that the net level premium increases rapidly with an increase in attained age, while there is a gradual decrease as the level monthly wage increases above $100. By comparing the first category with the second the value of the benefits for the children may be determined. For entrants at age 25 these benefits

o/ These premiums could be expressed in dollars and cents by multiplying them by the wage. However, they are presented in this fashion in order to facilitate comparisons between those at various wage levels.

add about .5% of payroll to the cost, whereas for older entrants the increase is very small. By comparing the second category with the third it may be seen that the presence of a wife who may be eligible for a wife's benefit (5 years after the husband retires at age 65) and for a widow's benefit (when she attains age 65 following his death) adds about 75% to the cost in all cases.

When the wife is not an annuitant in her own right, the net level premium is appreciably in excess of 3%, the ultimate employee tax rate. However, where there are no children and the wife is an annuitant in her own right with more than 75% of her husband's primary benefit (or also in the case of a single individual with no eligible dependents), there are a few cases where the cost is less than 3%, namely, for attained age 25 where the level monthly wage is in excess of about $135, and for a $250 wage where the attained age on January 1, 1940 is 32 or less. This "area" would be appreciably diminished if an allowance for expense were included and would probably vanish if a lower interest rate than 3% had been used.

In summary, this section has indicated some instances where "complete individual equity" is lacking under the 1939 Amendments although it was present in all cases under the original Act. However, the 1939 Amendments still preserve the principle of "group equity" except in a few isolated cases. Such situations would not develop fully for many years to come by which time undoubtedly the Act will have been further amended. In any case, whenever violations of "group equity" do exist, they will occur in only a few instances and will be of relatively small size.

F. Estimates of Annual Benefit Costs[p/]

In this section the total annual cost of the program over the next 15 years will be analyzed according to different sets of assumptions which give a wide range in costs. For a description of these assumptions and a discussion of their relative validity, the reader should consult the testimony of W. R. Williamson before the Committee on Ways and Means of the House of Representatives.[q/] The estimates

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p/ These estimates have been prepared jointly by the Office of the Actuary and the Actuarial Section of the Analysis Division, Bureau of Old-Age and Survivors Insurance.

q/ Page 2473 of the "Hearings Relative to the Social Security Act Amendments of 1939," 76th Congress, First Session. Other useful references are: "Cost Factors in Old-Age Insurance," by W. R. Williamson, Social Security Bulletin, July 1938; and "Cost Estimates for the Old-Age Insurance System of the Social Security Act," by R. J. Myers, Record of the American Institute of Actuaries, June 1939. The former article deals with the various factors involved in social insurance cost estimates, while the latter shows in quantitative fashion the effect of various individual cost factors on estimates for the original Act.

Table 25

NET LEVEL PREMIUM[a] REQUIRED TO PURCHASE THE BENEFITS UNDER THE 1939 AMENDMENTS FOR SEVERAL ASSUMED TYPICAL CASES[b]

Age on 1/1/40	Level Monthly Wage $50	$100	$150	$250
	Married Man With Children, Wife Not Annuitant in Own Right			
25	10.44%	6.62%	5.29%	4.24%
30	12.39	7.80	6.24	4.99
35	15.01	9.38	7.50	6.00
40	18.47	11.54	9.23	7.39
45	23.85	14.91	11.92	9.54
50	32.37	20.23	16.19	12.95
55	47.54	29.71	23.77	19.02
60	81.87	51.17	40.93	32.75
	Married Man With No Children, Wife Not Annuitant in Own Right			
25	9.74%	6.19%	4.95%	3.95%
30	11.87	7.47	5.98	4.78
35	14.72	9.20	7.36	5.89
40	18.42	11.51	9.21	7.37
45	23.85	14.91	11.92	9.54
50	32.37	20.23	16.19	12.95
55	47.54	29.71	23.77	19.02
60	81.87	51.17	40.93	32.75
	Married Man With No Children, Wife Annuitant in Own Right[c]			
25	5.74%	3.58%	2.87%	2.29%
30	6.93	4.33	3.47	2.77
35	8.55	5.34	4.28	3.42
40	10.74	6.71	5.37	4.30
45	13.99	8.74	6.99	5.59
50	19.16	11.97	9.58	7.66
55	28.55	17.84	14.27	11.42
60	50.30	31.44	25.15	20.12

a/ Expressed as percentage of level wage. Based on the Standard Annuity Table at 3% interest.

b/ In all cases it is assumed that the individual earns a level wage from 1937 to age 65 and that on January 1, 1940, he is exactly the age shown and his wife is exactly 5 years younger than this. In the case where there are children, there are assumed to be two who were born when the man was exact ages 24 and 25. In the case where the wife is assumed to be an annuitant in her own right, it is further assumed that her own primary benefit is greater than 75% of her husband's primary benefit. In no case is allowance made for parents' benefits.

c/ Also applicable in the case of a single man.

Note: The above figures are based on premiums payable from 1937 to age 65 or prior death. No allowance is made for administrative expenses.

presented here have been superseded to an appreciable extent by those contained in the First Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance Trust Fund. However, they are set down here for their historical significance in addition to their somewhat limited current value.

It should be emphasized that these cost estimates are subject to a wide range of error and further, that even though some cost data has become available during the first four years of operation, nevertheless many important cost factors are as yet indeterminate. For example, a major factor, average retirement age, is as yet little better than a guess. Even the first few years of operation under the 1939 Amendments will not be indicative of long-range trends since temporary business conditions and newness of the program may have an appreciable effect on retirement rates.

Tables 26 and 27 present the estimated disbursements for the various categories of benefits in the 1939 Amendments. The former gives the estimate based on the original assumptions, while the latter applies to the probable maximum cost assumptions. The difference between these two sets of assumptions may be briefly summarized by the following table:

Factor	Original	Probable Maximum Cost
Average Wage	$1100	$900
Retirement Age	67½	66
Initial Coverage	25,337,000	32,000,000
Population Basis	COES	NRC

In addition, a much greater allowance is made in the probable maximum cost assumptions for the "in and out" movement (i.e., the flow of workers from covered to uncovered industries and vice versa).

The lower sections of Tables 26 and 27 show the benefit payments as a percentage of payroll. Under the original assumptions the total cost is about ½% of payroll in 1940, increasing to 4½% by 1955, while under the probable maximum cost assumptions the benefits range up to 5½% of payroll in 1955. In the last column of each of these tables there has been set down the "Average Cost" which is merely the quotient of the total benefit payments for the period 1937-80 divided by the total payrolls for that same period (with no interest earnings being considered). Under the original assumptions the average cost for the total benefit payments is 4.69% of payroll, while under the probable maximum cost assumptions the corresponding figure is 6.25%, so that there is a relative difference of more than 25% between the two estimates.

Actual benefit payments made in the calendar year 1940 (based on checks cashed and returned to the Treasury) amounted to approximately

$35 million. This figure represents only 35% of the 1940 estimate based on the original assumptions and 31% of that based on the probable maximum cost assumptions. Among the factors causing this overstatement were the unpredictable lag present at the inception of such a program and the improved business conditions resulting from the national defense program which had the effect of delaying retirements.

Table 28 summarizes the estimated total benefit payments under the 1939 Amendments and compares them with those under the original Act. The comparison is best made on the basis of the cost as a percentage of payroll since the coverage under the 1939 Amendments is to some extent larger than that under the original Act so that the payroll is also larger. In the early years the cost is increased by over 100%, and even by 1955 the cost is 30-60% greater. However, ultimately, the annual disbursements under the 1939 Amendments are estimated to be about 25% less than those under the original Act. The average cost for the 1939 Amendments is slightly higher than that for the original Act according to the original assumptions, but slightly lower for the probable maximum cost assumptions. However, since the ultimate benefit disbursements under the 1939 Amendments are so much lower than those under the original Act, it is quite likely that if the average cost were figured over a period longer than 40 years, it would be lower for the 1939 Amendments in both cases. It may thus be said that the long-range cost of the 1939 Amendments is at least as low as that of the original Act and probably lower. The more conservative (i.e., more costly) the assumptions are, the more favorable do the 1939 Amendments appear in relation to the original Act. This is due to the fact that the survivors benefits tend to act as a balance against the old-age portion of the program.

Table 29 gives the estimated number of beneficiaries under the 1939 Amendments. The figures shown represent the average number receiving benefits during the year, which is approximately the same as the number on the roll at the middle of the year. The figures for 1940 are merely part of the long-range cost estimates and have not allowed adequately for administrative lag and the natural lag in getting any program under way. Actual operation figures for 1940 are not yet completely available on a basis comparable with these estimates, but the actual figures are probably only about 25% as large as the estimates.

Table 29 also shows the estimated average size of benefits payable under the 1939 Amendments for the two years 1940 and 1955. Figures for intervening years are not presented since there is only a very gradual upward trend in these data. The average sizes of claims allowed during 1940 followed quite closely the estimates based on the original assumptions as indicated below.r/

r/ No comparison is possible as yet for lump-sum death payments because the actual figures are shown on a "per payee" basis rather than "per death of covered individual." In some instances several payments are made in respect to one death.

Table 26

ESTIMATED BENEFIT PAYMENTS UNDER 1939 AMENDMENTS,
ESTIMATE BASED ON ORIGINAL ASSUMPTIONS[a]

Type of Benefit Payment	Calendar Year 1940	1945	1950	1955	Average Cost[b]
Benefit Payments (in millions of dollars)					
Primary Insurance Benefits	36	346	663	853	-
Wife's Insurance Benefits	4	48	77	89	-
Child's Insurance Benefits	10	93	144	170	-
Widow's Insurance Benefits	2	33	89	164	-
Widow's Current Insurance Benefits	8	68	106	124	-
Parent's Insurance Benefits	1	7	14	20	-
Lump-sum Death Payments	29	40	55	71	-
Total Benefit Payments	100[c]	635	1,148	1,491	-
Benefit Payments as Percentage of Payroll					
Primary Insurance Benefits	.12%	1.15%	2.08%	2.55%	2.91%
Wife's Insurance Benefits	.01	.16	.24	.27	.23
Child's Insurance Benefits	.03	.31	.45	.51	.40
Widow's Insurance Benefits	.01	.11	.28	.49	.56
Widow's Current Insurance Benefits	.03	.23	.33	.37	.30
Parent's Insurance Benefits	*	.02	.04	.06	.05
Lump-sum Death Payments	.10	.13	.17	.21	.24
Total Benefit Payments	.34[c]	2.11	3.59	4.46	4.69

* Less than .005%.

a/ For description of these assumptions see testimony of W. R. Williamson before Ways and Means Committee.

b/ Average cost of benefits from 1937 to 1980 as percentage of average payroll for that period.

c/ Including about 10 million dollars that will be paid in respect to lump-sum death claims which arose before 1940.

Table 27

ESTIMATED BENEFIT PAYMENTS UNDER 1939 AMENDMENTS,
ESTIMATE BASED ON PROBABLE MAXIMUM COST ASSUMPTIONS[a/]

Type of Benefit Payment	Calendar Year 1940	1945	1950	1955	Average Cost[b/]
Benefit Payments (in millions of dollars)					
Primary Insurance Benefits	50	475	926	1295	-
Wife's Insurance Benefits	4	66	107	126	-
Child's Insurance Benefits	10	87	131	143	-
Widow's Insurance Benefits	2	37	96	175	-
Widow's Current Insurance Benefits	7	64	95	105	-
Parent's Insurance Benefits	1	7	14	20	-
Lump-sum Death Payments	30	40	53	66	-
Total Benefit Payments	114[c/]	776	1422	1930	-
Benefit Payments as Percentage of Payroll					
Primary Insurance Benefits	.16%	1.51%	2.76%	3.65%	4.61%
Wife's Insurance Benefits	.01	.21	.32	.36	.33
Child's Insurance Benefits	.03	.28	.39	.40	.30
Widow's Insurance Benefits	.01	.12	.29	.49	.55
Widow's Current Insurance Benefits	.02	.20	.28	.30	.22
Parent's Insurance Benefits	*	.02	.04	.06	.04
Lump-sum Death Payments	.10	.13	.16	.19	.20
Total Benefit Payments	.37[c/]	2.47	4.24	5.45	6.25

* Less than .005%.

a/ For Description of these assumptions see testimony of W. R. Williamson before Ways and Means Committee.

b/ Average cost of benefits from 1937 to 1980 as percentage of average payroll for that period.

c/ Including about 10 million dollars that will be paid in respect to lump-sum death claims which arose before 1940.

Table 28

ESTIMATED TOTAL BENEFIT PAYMENTS UNDER 1939 AMENDMENTS AS COMPARED TO THOSE UNDER THE ORIGINAL ACT

Calendar Year	Total Benefit Payments a/ Original Act	Total Benefit Payments a/ 1939 Amendments	Benefits as % of Payroll Original Act	Benefits as % of Payroll 1939 Amendments	Increase in Cost for 1939 Amendments
Estimate Based on Original Assumptions b/					
1940	49	100	.17%	.34%	100%
1945	218	635	.73	2.11	189
1950	538	1,148	1.71	3.59	110
1955	921	1,491	2.81	4.46	59
1937-80	-	-	4.21 c/	4.69 c/	11
Estimate Based on Probable Maximum Cost Assumptions b/					
1940	46	114	.16%	.37%	131%
1945	290	776	.93	2.47	166
1950	834	1,422	2.52	4.24	68
1955	1,445	1,930	4.15	5.45	31
1937-80	-	-	6.41 c/	6.25 c/	-2

a/ In millions of dollars.

b/ For description of these assumptions see testimony of W. R. Williamson before Ways and Means Committee.

c/ Average cost of benefits from 1937 to 1980 as percentage of average payroll for that period

Table 29

ESTIMATED NUMBER OF BENEFICIARIES[a] AND AVERAGE SIZE OF BENEFITS UNDER 1939 AMENDMENTS FOR SPECIFIED CALENDAR YEARS

Type of Benefit Payment	Number of Beneficiaries[a] 1940	1945	1950	1955	Average Benefit 1940	1955
Estimate Based on Original Assumptions[b]						
Primary Insurance Benefits	131	1,217	2,271	2,843	$ 23	$ 25
Wife's Insurance Benefits	28	337	529	592	12	13
Child's Insurance Benefits	89	800	1,244	1,381	10	10
Widow's Insurance Benefits	8	155	406	731	18	19
Widow's Current Insurance Benefits	36	320	486	552	18	19
Parent's Insurance Benefits	5	44	92	129	12	13
Lump-sum Death Payments	207	284	377	473	140	150
Total Receiving Monthly Benefits[c]	297	2,873	5,028	6,228	-	-
Estimates Based on Probable Maximum Cost Assumptions[b]						
Primary Insurance Benefits	198	1,854	3,509	5,126	$ 21	$ 23
Wife's Insurance Benefits	32	516	818	935	11	12
Child's Insurance Benefits	97	830	1,209	1,304	9	9
Widow's Insurance Benefits	10	191	489	867	16	17
Widow's Current Insurance Benefits	39	332	484	521	16	17
Parent's Insurance Benefits	5	44	92	129	12	13
Lump-sum Death Payments	236	313	404	487	126	135
Total Receiving Monthly Benefits[c]	381	3,767	6,601	8,882	-	-

a/ In thousands of persons. Average number receiving monthly benefits during year (same as number on roll in middle of year). For number on roll at end of 1940 double figures shown above (not applicable to lump-sum payments).
b/ For description of these assumptions see testimony of W. R. Williamson before Ways and Means Committee.
c/ i.e., excluding lump-sum death payments and funeral expenses.

Table 30

ESTIMATED PROGRESS OF OLD-AGE AND SURVIVORS INSURANCE TRUST FUND,[a] 1940-55
(All figures in billions of dollars)

Calendar Year	Original Assumptions 2½% Interest	3% Interest	Probable Maximum Cost Assumptions 2½% Interest	3% Interest
1940	1.91	1.91	1.91	1.91
1945	4.50	4.58	4.16	4.24
1950	8.50	8.75	7.39	7.62
1955	12.26	12.83	9.64	10.14

a/ Figures shown are balance in fund at end of year. The trust fund is the accumulation at interest of the excess of tax collections over benefit payments and administrative expenses. Tax schedule is assumed to be maintained as now prescribed.

Type of Claim	Actual	Estimated	Ratio
Primary	$22.71	$23	99%
Wife's	12.15	12	101
Child's	12.20	10	122
Widow's	20.36	18	113
Widow's Current	19.60	18	109
Parent's	13.09	12	109

The 1939 Amendments seem to change the reserve concept from an "actuarial reserve" to an "accumulation reserve" basis. Formerly, the appropriations were not specifically related to the taxes since they were to be "sufficient as an annual premium to provide for the payments required" and were "to be determined on a reserve basis in accordance with accepted actuarial principles." On the other hand, the 1939 Amendments merely provide that the tax receipts shall be permanently appropriated to the Federal Old-Age and Survivors Insurance Trust Fund (termed the Old-Age Reserve Account under the original Act). Out of this Fund both benefit payments and direct administrative expenses are to be paid. The monies available in the Trust Fund are to be invested in outstanding Government obligations or else in special issues bearing a rate equal to the average rate of all interest-bearing obligations in the public debt.s/

No limitations are set up as to the size of the Trust Fund, but the Trustees are to report whenever its size will during the next five fiscal years exceed three times the highest annual expenditures expected during that period. Also, whenever the Trustees believe that the Fund is too small, a report is to be made. The amount mentioned above does not specifically limit the size of the Trust Fund but is only for the purpose of informing Congress. If Congress does not then amend the law, the Trust Fund may grow even larger. On the other hand, Congress might construe this provision as a mandate to either increase benefit disbursements or decrease tax receipts (by lowering the tax rate) whenever this situation occurs.

In the following discussion of the progress of the Trust Fund it will be assumed that the provisions of the 1939 Amendments both as to benefit payments and tax schedule will not be changed in the future. In a number of instances the Trust Fund exceeds the size specified in the law so that the Trustees would make the required report. The tacit assumption is, therefore, that Congress would decide to ignore this report and maintain the status quo, thus allowing the Trust Fund to increase.

Table 30 shows the progress of the Trust Fund for the two sets of assumptions used in estimating the future benefit payments and for

s/ Actually, the interest rate is to be taken to the multiple of 1/8 of 1% lower than such average rate. Thus, if the average rate were 2.71%, the special obligations would be issued at 2-5/8%.

two interest rates, $2\frac{1}{2}$ and 3%. While current interest rates on Government bonds are only slightly above $2\frac{1}{2}$%, figures have been shown for 3% since it is possible that interest rates may go higher in the future.t/ The actual balance in the Trust Fund at the end of the calendar year 1940 was approximately $2.03 billion; this is about 6% greater than the estimate of $1.91 billion. Such excess primarily resulted from improved business conditions which produced larger tax receipts than estimated. The Trustees' Report previously mentioned estimates that the Trust Fund as of June 30, 1945 will be from $5-7 billion in size. The lower limit of this range is in excess of the four estimates for 1945 (as of December 31) contained in Table 30, because of relatively larger tax receipts now anticipated in the next few years.

The reader, in considering the actuarial cost estimates of this section, should always keep in mind the fact that figures such as these are subject to a wide range of error. Values are assigned to the variables, and the results have a certain comparability and usefulness. Yet, not only are long-range estimates subject to large possible deviations, but those for the first few years of operation, also, may be relatively very much in error because of the newness of the program, administrative lag, and the current position in the business cycle.

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t/ The two other major contributory retirement plans administered by the Federal Government are on a higher interest rate than $2\frac{1}{2}$%. Under the Railroad Retirement Act the rate is 3%, while under the Civil Service Retirement Act it is 4%.