Old-Age, Survivors, and Disability Insurance Program: History of the Benefit Formula

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The program of old-age, survivors, and disability insurance affects virtually every person in the United States and many of its citizens working abroad. A full discussion of the program would fill many volumes, but one of its phases can be selected and followed, in the pages of the BULLETIN, *from inception to the present time. The phase selected for the current presentation is the benefit formula, with digressions to certain closely related provisions.*

THE SOCIAL SECURITY ACT of 1935 and its amendments have included six different formulas for determining the amount of monthly retirement benefits payable under the old-age, survivors, and disability insurance program. Available initially only when a worker retired because of age, benefits have also been payable since mid-1957 to a worker retiring because of permanent and total disability.

The application of the six formulas to selected earnings is analyzed in the following pages. Particular attention is given to the benefits payable under each formula in the early years of its operation and the potential benefits payable in a mature system to a beneficiary whose entire working life was spent in covered employment. The analysis includes a discussion of family benefits, introduced by the 1939 amendments.

THE SIX FORMULAS

A summary of the six formulas contained in the act and its amendments is presented in table 1. Before the formula in the 1935 act became operative, it was superseded by the 1939 formula, which went into effect in January 1940. The 1950 formula was operative only for the 5 months April–August 1952 and was replaced in September by the 1952 formula. The 1954 formula became effective in September 1954 and the 1958 formula in January 1959.

The 1935 formula was based on cumulative wage credits under the program and thus was directly related to total covered wages. The 1939 amendments introduced the concept of the average monthly wage, defined as total covered earnings divided by the number of months elapsed after attainment of age 21, with the period before inauguration of the program on January 1, 1937, disregarded. Use of the average monthly wage rather than cumulative wage credits permits higher benefits to be paid in a system's early years of operation and also relates the benefit more directly to the worker's standard of living.

Length of service remained a factor under the 1939 formula, in the form of a 1-percent increase in the computed benefit for each year of coverage. It will be observed that the 1939 formula, as well as subsequent formulas, was more heavily weighted than the 1935 formula in favor of the worker with low average earnings.

The 1950 amendments eliminated the length-of-service increment. As a result, benefits payable

TABLE 1.—*OASDI benefit formulas under the Social Security Act and its amendments*

Formula enacted in—	Monthly retirement benefit	
	Basis	Percentages applied
1935	Cumulative wage credits	1/2% of first $3,000 plus 1/12% of next $42,000 plus 1/24% of next $84,000.
1939	Average monthly wage [1] after 1936.	40% of first $50 plus 10% of next $200, all increased by 1% for each year of coverage.
1950	Average monthly wage [1] after 1950.	50% of first $100 plus 15% of next $200.
1952	Average monthly wage [1] after 1950.	55% of first $100 plus 15% of next $200.
1954	Average monthly wage [1] after 1950, excluding 4 or 5 years of lowest earnings.	55% of first $110 plus 20% of next $240.
1958	Average monthly wage [1] after 1950, excluding 5 years of lowest earnings.	58.85% of first $110 plus 21.4% of next $290.

[1] Total credited earnings divided by months elapsed after year of attainment of age 21.

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to a worker meeting the minimum coverage requirements may be as large as those payable to a worker covered during his entire career. The 1950 law also permitted exclusion of the period before 1951 in computing the average monthly wage. This exclusion, desirable because of substantial extensions in coverage, had the additional merit of recognizing the changes in earnings levels in the 1940's. In the long run, the period on which the average wage is based is the time from a worker's attainment of age 21 until his retirement; few workers born after 1929 are affected by exclusion of years before 1951.

The formulas adopted in 1952 and later years followed the general pattern of the 1950 formula. The 1954 amendments included a provision permitting the 4 years of lowest earnings (5 years for workers with at least 20 quarters of coverage) to be excluded in the computation of the average monthly wage. Under the 1958 amendments, 5 years may be omitted in all cases. Thus, even though a worker may have no covered earnings for as many as 5 years, no reduction is made in the amount of the average monthly wage upon which his benefit is based. Established periods of permanent and total disability may also be omitted under the 1954 amendments in the computation of the average monthly wage, so that the loss of earnings caused by such disability does not reduce the amount of the monthly benefit.

The 1958 formula was not expressly stated in the 1958 amendments. Instead, a benefit computation table based on the formula was incorporated in the law. At a glance, it might appear that a different principle from that prevailing in previous amendments had been adopted. What the 1958 legislation did was to increase the benefits, generally by 7 percent. This adjustment, in effect, changes the existing formula from 55 percent of the first $110 of the average monthly wage and 20 percent of the remainder to 58.85 percent of the first $110 and 21.4 percent of the remainder. At the same time the maximum amount of the remainder was increased from $240 to $290 to reflect the accompanying rise from $4,200 to $4,800 in maximum annual creditable earnings.

The table in the 1958 law, derived by applying this formula to every possible average monthly wage, rounds the result to the nearest dollar for facility of administration. It then groups the ranges of average monthly wages that produce each dollar of monthly retirement benefit.[1] The benefits shown by the table for average monthly wages of less than $85 are in some cases higher than the amount the benefit formula would produce, to reflect the 10-percent increase in the minimum benefit and to achieve smoothly graded increases in benefit amounts immediately above the minimum.

To compare the benefits provided under the several formulas, a hypothetical earnings record has been selected to which each formula is applied. In the following comparisons, benefits for "career coverage" assume covered employment from age 21 to age 65. Actually, earnings before age 21 may be included in the computation of benefits, and earnings after age 65 may be used for all except the 1935 formula. Basing potential career-coverage benefits on a maximum of 43 years of covered employment produces comparable benefits under all six formulas, since for an entrant at age 22 that is the maximum permissible period under the 1935 formula. Benefits for "immediate retirement" are based on 2 years of coverage except under the 1935 formula, for which 5 years of employment are assumed. The 3-year difference stresses the dramatic increase in immediate retirement benefits under the 1939 and subsequent formulas.

As the system matures, the immediate retirement benefits under the five formulas based on the average monthly wage become almost meaningless, both because in the long run 10 years of employment are necessary for eligibility for benefits and because credited earnings are spread over the career period in determining the average monthly wage. Thus, immediate-retirement benefits are of interest only with respect to an individual near retirement age at the time each formula was enacted.

COMPARISON BASED ON LEVEL EARNINGS

For the first comparison, level annual earnings (the use of which eliminates the effect of changing wage rates) have been chosen in the amounts

[1] The term "monthly retirement benefit" is used here to denote the amount payable to a worker retiring at or after age 65 who does not have an eligible dependent (or to a disabled-worker beneficiary with no eligible dependent); in the terminology of the law, this is the primary insurance amount.

of (a) $1,500, the approximate average annual credited earnings in the program's early years, and (b) $3,000, the maximum creditable annual earnings during its first 15 years.

Table 2 shows the monthly retirement benefit based on such earnings. The marked decrease in the career-coverage benefit payable under the 1939 formula from that payable under the 1935 formula is the result of changes in the philosophy underlying the program. To produce a more nearly equitable distribution of social protection at roughly the same aggregate cost, the amount of the monthly retirement benefit was reduced by the 1939 amendments at the same time that benefits for dependents and survivors were provided and immediate-retirement benefits were increased.

The career-coverage benefit under the 1935 formula is reduced one-third by use of the 1939 formula; at both earnings levels it is first exceeded by benefits computed under the 1954 formula. The 1958 formula provides an increase of only about 15 percent from the 1935 career-coverage benefit. For immediate benefits the 1939 formula, with its significant change in basis from total credited earnings to the average monthly wage, results in an increase of 50 percent or more from the original formula. The 1950 formula nearly triples the immediate benefit under the 1935 formula, and the 1958 formula further increases the amounts by about 30 percent.

The monthly retirement benefit plus wife's full benefit under the 1939 formula is more than double the monthly retirement benefit under the 1935 formula for the immediate benefit, and for career coverage the amounts are about the same. For the retired worker and his wife the 1950 formula nearly doubles the immediate benefit under the 1939 law and increases the career benefit about one-third.

TABLE 2.—*Monthly benefits under the six formulas, based on level annual earnings of $1,500 and $3,000*

Formula	Level annual earnings of $1,500		Level annual earnings of $3,000	
	Career coverage [1]	Immediate retirement [2]	Career coverage [1]	Immediate retirement [2]
	Monthly retirement benefit			
1935	$58.13	$18.75	$85.00	$25.00
1939	39.33	28.05	57.20	40.80
1950		53.80		72.50
1952		58.80		77.50
1954		63.50		88.50
1958		68.00		95.00
	Monthly retirement benefit plus wife's full benefit			
1939	$59.00	$42.08	$85.00	$61.20
1950		80.70		108.80
1952		88.20		116.30
1954		95.30		132.80
1958		102.00		142.50

[1] Based on 43 years of covered employment. Beginning with the 1950 formula, the benefit amounts are the same as those shown under immediate retirement.
[2] Under the 1935 formula, based on 5 years of covered employment; under the other formulas, based on 2 years.

TABLE 3.—*Maximum creditable annual earnings and maximum and minimum monthly benefits*

Formula	Maximum creditable annual earnings	Monthly retirement benefit		Monthly family benefit	
		Minimum	Maximum	Minimum	Maximum
1935	$3,000	$10.00	$85.00	(1)	(1)
1939	3,000	10.00	(2)	$10.00	$85.00
1950	3,600	20.00	80.00	15.00	150.00
1952	3,600	25.00	85.00	18.80	168.75
1954	4,200	30.00	108.50	30.00	200.00
1958	4,800	33.00	127.00	33.00	254.00

[1] No provision.
[2] No amount specified. The maximum basic benefit ($40) is increased 1 percent for each year of service and thus has a "practical" maximum of about $60 (for a person with the maximum creditable wage of $250 a month and 50 years of coverage).

MINIMUM AND MAXIMUM BENEFIT PROVISIONS

The preceding comparison is, to some extent, unrealistic since earnings levels have risen, and the benefit formulas have reflected that change. Among other things, the maximum amount of annual earnings that may be credited has increased from $3,000 during 1937–50 to $4,800 beginning in 1959; the base effective under each formula is shown in table 3. The benefit formulas based on the average monthly wage have been adjusted upward, from the maximum attainable average monthly wage of $250 under the 1939 amendments to $400 under the 1958 amendments. It should be noted that the $3,000 limitation contained in the 1935 act applied to earnings from each employer; thus in the years 1937, 1938, and 1939 a worker who had several employers could be credited with wages of $3,000 from each. Such earnings could also be used under the 1939 formula to raise the average monthly wage up to but not over $250. This question does not arise in the later formulas, which disregard earnings before 1951.

The rising wage level has been recognized as well in the minimum and maximum monthly retirement benefits specified in the formulas. The

TABLE 4.—*Monthly retirement benefits and maximum family benefits under the 1958 formula*

Average monthly wage	Monthly retirement benefit	Maximum family benefit
$67 or less	$33–40	Monthly retirement benefit plus $20.
68–127	$41–68	1 1/2 times monthly retirement benefit.
128–314	$69–108	80% of average monthly wage.
315–400	$109–127	$254.

1935 minimum was retained in the 1939 formula, doubled under the 1950 formula, and more than tripled under the 1958 formula. The maximum benefit has shown a lesser increase. The 1939 amendments, in effect, reduced the $85 limitation provided under the 1935 formula, although they did not contain a specified dollar limitation. The 1950 maximum was slightly less than that in the original act, but the 1952 amendments restored the original amount and the 1958 amendments increased it 49 percent.

MAXIMUM FAMILY BENEFITS

The 1939 amendments made benefits available (effective with the first monthly payments under the program in 1940) for dependents of the retired worker and survivors of the deceased worker. The benefit for each dependent is based on but is less than the monthly retirement benefit. Though this analysis is concerned primarily with the monthly retirement benefit under each formula, the effect of dependents' and survivors' benefits cannot be ignored. Because a detailed discussion of such benefits would be too lengthy for inclusion here, consideration is given only to the maximum family benefit provisions.

The maximum monthly amount that a family may receive is related to the monthly retirement benefit and to the average monthly wage, subject to a specified dollar limitation. This maximum does not affect the amount payable to a retired worker and his wife, but it may apply when there are three or four beneficiaries in the family, and it always reduces the potential payment when there are more than four beneficiaries.

The family maximums in the 1958 amendments were contained in the benefit computation table. These amounts were based on the relationships indicated in table 4. As noted previously, the average monthly wages producing each dollar of monthly retirement benefit are grouped in that table; the greatest range in each grouping is $5. For average monthly wages of $128–$314, the maximum family benefit is 80 percent of the average monthly wage; since, however, 80 percent is applied to the highest value in the range, the maximum family benefit exceeds 80 percent of the average monthly wage for the lower values in each range. It may appear that here, as in the monthly retirement benefit, a new principle has been introduced, since preceding amendments contained provisions limiting the maximum family payment to 80 percent of the average monthly wage but making it not less than one and one-half times the retirement benefit or more than a specified dollar amount (as shown in table 3).

The following example illustrates the derivation of the benefit computation table from the 1958 formula (table 1) and the maximum family benefit relationship (table 4). The amounts shown in one line of the benefit computation table are as follows:

Average monthly wage		*Primary insurance amount*	*Maximum family benefit*
At least—	*But not more than—*		
$198	$202	$84	$161.60

Details of the computation are shown below. The figures in the second column, when rounded to the nearest dollar, form the basis of the grouping of the average monthly wage, and the last entry in the third column becomes the maximum family benefit for the group.

Average monthly wage	Monthly retirement benefit (according to formula)	Maximum family benefit (80 percent of average monthly wage)
$198	$83.567	$158.40
199	83.781	159.20
200	83.995	160.00
201	84.209	160.80
202	84.423	161.60

It has been noted that the monthly retirement benefit is weighted in favor of the worker with low average earnings. As shown in table 5, the benefit is 61 percent of an average monthly wage of $54. The percentage decreases sharply for average wages between $110 and $200, reflecting the effect of the breaking point of the formula, and less sharply thereafter to 32 percent.

The maximum family benefit as a percentage of the average monthly wage declines from a high of

98 percent to a level of 80 percent, maintained for average monthly wages of $128–$314. It decreases thereafter because of the $254 maximum.

RELATION TO RETIREMENT BENEFITS

The maximum family benefit drops from 161 percent of the monthly retirement benefit to 150 percent for average wages of $68–$127. It then increases from 150 percent of the retirement benefit to a peak of 233 percent (for an average monthly wage of $315) and declines thereafter to 200 percent because of the $254 maximum. The rise from 150 percent to 233 percent occurs because the monthly retirement benefit represents a steadily decreasing percentage of the average monthly wage while the maximum family benefit remains at 80 percent.

Chart 1 shows the increasing spread between the monthly retirement benefit and the maximum family benefit as the average monthly wage increases from $110 to $315. It will be noted that values are plotted only for each $5 change in the average monthly wage. If values were shown for each $1 change, the upper "line" would have a saw-tooth appearance, with each "tooth" representing a fluctuation of about 2 percent, occasioned by grouping wage values producing each dollar of monthly retirement benefit.

Chart 1.—*Benefits as percentage of average monthly wage under the 1958 formula*

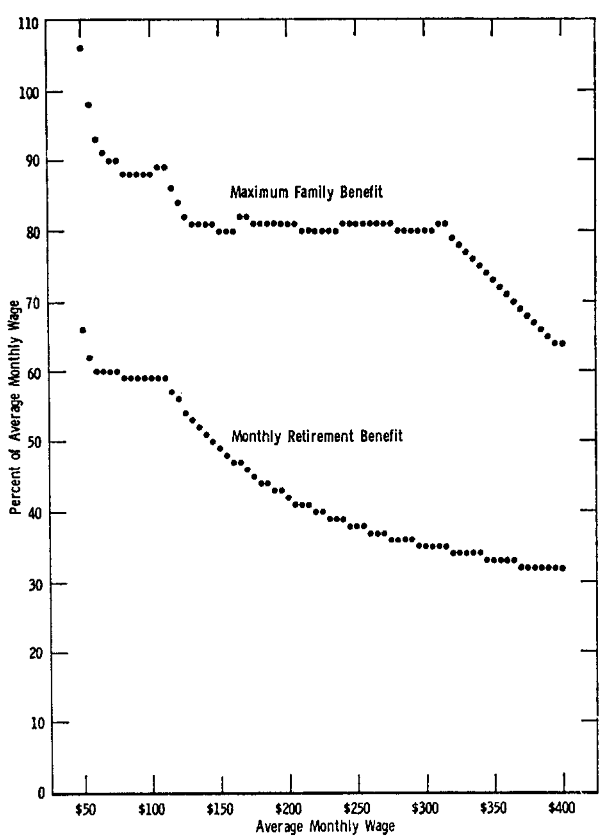

TABLE 5.—*Amount of maximum family benefits under the 1958 formula and relation to average monthly wage and monthly retirement benefit*

Average monthly wage	Monthly retirement benefit		Maximum family benefit—		
	Amount	As percent of average monthly wage	Amount	As percent of average monthly wage	As percent of monthly retirement benefit
$54	$33	61	$53.00	98	161
60	36	60	56.00	93	156
75	45	60	67.50	90	150
100	59	59	88.50	88	150
150	73	49	120.00	80	164
200	84	42	161.60	81	192
250	95	38	202.40	81	213
300	105	35	240.00	80	229
350	116	33	254.00	73	219
400	127	32	254.00	64	200

BENEFITS IN RELATION TO EARNINGS AT TIME OF LEGISLATION

Consideration of earnings levels at the time each formula was enacted provide another perspective on benefit amounts. Median annual earnings of all male workers covered for 4 quarters of the year (not available for 1935) are shown in table 6, together with the benefits based upon such earnings. Under the 1939 formula, three types

TABLE 6.—*Benefits under five formulas, based on median earnings in year of enactment*

Formula	Median annual earnings[1]	Monthly retirement benefit		Monthly retirement benefit plus wife's full benefit	
		Amount	Percent of monthly earnings	Amount	Percent of monthly earnings
1939:[2]					
Immediate retirement	$1,293	$26.21	24	$39.31	37
Career coverage	1,293	36.75	34	55.13	52
Effective	1,293	29.30	27	43.95	41
1950	3,200	74.90	28	112.40	42
1952	3,700	85.00	28	127.50	41
1954	3,965	104.50	32	156.80	48
1958	4,500	121.00	32	181.50	48

[1] For all covered male 4-quarter workers (preliminary data for 1958).
[2] To take into account the length-of-service increment, immediate retirement benefits are based on 2 years of coverage, career-coverage benefits on 43 years, and effective benefits on 14 years (1937–50).

TABLE 7.—*Illustrative earnings record, 1937–59*

Year	Average annual earnings [1]	Year	Average annual earnings [1]
1937	$1,470	1949	$2,508
1938	1,359	1950	2,579
1939	1,400	1951	2,905
1940	1,465	1952	2,970
1941	1,646	1953	3,035
1942	1,939	1954	3,037
1943	2,205	1955	3,270
1944	2,301	1956	3,350
1945	2,293	1957	3,420
1946	2,269	1958	3,420
1947	2,393	1959	3,710
1948	2,493		

[1] For all covered male 4-quarter workers. Data estimated for 1937 and 1959, preliminary for 1955–58.

are shown: the immediate retirement benefit, the career-coverage benefit, and the 1950 "effective" benefit—the amount actually available under the 1939 formula when legislation containing the 1950 formula was under consideration.

As a percentage of the average monthly wage in the year of enactment, the retirement benefit under the 1950 and 1952 formulas was little different from the effective benefit under the 1939 formula, remaining at about 28 percent. Though the benefit was increased by the 1954 and 1958 amendments, it has not regained the level of 34 percent of average monthly earnings that the career-coverage benefit represented under the 1939 formula; nor has the monthly retirement benefit plus the wife's benefit regained the 1939 career-coverage level of 52 percent. The small percentage increase under the two latest formulas reflects the underlying principle of the 1950 amendments—to provide relatively the same level of benefits in all future years, rather than benefits that are lower in the early years and higher in the later years. The dollar amounts under the 1958 formula, however, are more than four times the effective amounts under the 1939 formula and more than triple the career-coverage benefit.

BENEFITS BASED ON RISING EARNINGS LEVELS

To examine the effect of changes both in earnings levels and in the benefit formulas, two tables have been prepared. Table 7 gives an illustrative earnings record for a hypothetical worker covered under the program since 1937; the average annual credited earnings of all covered male 4-quarter workers are used for the purpose. The benefits based on this record are shown in table 8 for retirement at the beginning of 1960 and on two bases for retirement on January 1, 1980: (1) earnings after 1959 at the 1959 level and (2) earnings rising steadily to $4,800 in 1970 and at a slower rate thereafter to $5,000 in 1979. These figures indicate the benefits that would be payable upon retirement now and in 1980 if the various formulas had remained in effect.

The monthly retirement benefit based on such an earnings record and on retirement in 1960 is 33 percent of the average monthly wage under the 1958 formula, compared with 18 percent under the 1935 formula and only 14 percent under the 1939 formula. For retirement in 1980, with no increases in earnings after 1959, use of the 1952 formula restores the relationship between the monthly retirement benefit and average earnings to the level provided by the original act. Part of the increase under the two subsequent formulas results from the rise in maximum creditable earnings and the provision for dropping the 5 years of lowest earnings. When it is assumed that earnings continue to rise, application of the 1950 formula brings the benefit payable on retirement in 1980 up to the level provided by the 1935 act. The higher earnings base is reflected in the greater relative increases under the 1954 and 1958 formulas.

The monthly retirement benefit plus the wife's

TABLE 8.—*Monthly benefits under the six formulas for an illustrative earnings record* [1] *and percentage of monthly earnings at retirement in January 1960 and retirement in January 1980*

Formula	Monthly retirement benefit			Monthly retirement benefit plus wife's full benefit		
	January 1960	January 1980		January 1960	January 1980	
		Static [2]	Rising [3]		Static [2]	Rising [3]
1935	$54.25	$79.25	$79.25	(4)	(4)	(4)
1939	43.05	53.34	53.34	$64.58	$80.01	$80.01
1950	75.20	78.50	78.50	112.80	117.80	117.80
1952	80.20	83.50	83.50	120.30	125.30	125.30
1954	96.30	99.50	105.70	144.50	149.30	158.60
1958	103.00	106.00	119.00	154.50	159.00	178.50
	Percent of monthly earnings at retirement					
1935	18	26	19	---	---	---
1939	14	17	13	21	26	19
1950	24	25	19	37	38	28
1952	26	27	20	39	41	30
1954	31	32	25	47	48	38
1958	33	34	29	50	51	43

[1] Applied to illustrative earnings record given in table 7.
[2] Assumes no increase in earnings after 1959.
[3] Assumes a steady increase in earnings, to $4,800 in 1970 and $5,000 in 1979.
[4] No provision.

benefit increases as a percentage of the average monthly wage at retirement under each formula, and it is at no time less than the monthly retirement benefit provided in the original act. For retirement in 1980, the monthly retirement benefit plus the wife's benefit under the 1958 formula, as a percentage of the monthly earnings at retirement, is almost double the retirement benefit under the 1935 formula if static earnings are assumed, and more than double that benefit when based on rising earnings. The 1939 formula provides about the same benefit for the couple as the retired worker received under the 1935 formula. The 1950 amendments, with a change in formula, an increase in earnings base, and the exclusion of years before 1951, result in a marked increase. Use of the 1954 and 1958 formulas, permitting 5 additional years to be dropped, results in a substantial increase that reflects the dropout and (for rising earnings after 1959) the higher earnings base.

LUMP-SUM DEATH PAYMENTS

Under the 1935 act, the lump-sum death payment was not based on the retirement benefit formula. Instead, it was computed as 3½ percent of cumulative wage credits, minus the amount of any monthly benefits received. In effect it assured that the worker or his estate would receive at least the amount of his contributions. The survivors of a deceased worker who had creditable earnings of $3,000 annually from age 22 to age 65 could thus be paid as much as $4,515 in one installment.

A large, single payment is obviously not as desirable a form of family protection as regular monthly income. Accordingly, in the 1939 amendments Congress eliminated the provision and set up instead a program paying monthly family benefits to survivors or making a small lump-sum payment when no one was eligible to receive monthly benefits for the month of the insured person's death. The 1939 and subsequent amendments based the amount of the lump-sum death payment on the computed monthly retirement benefit. Under the 1939 formula, the lump sum was six times the computed monthly retirement benefit. It is now, under the 1950 and subsequent formulas, three times the monthly benefit, subject to a specified dollar limitation that has not increased since 1952, and is paid whether or not there are survivors eligible for monthly benefits.

Table 9 shows the minimum and maximum lump-sum death payments under the six formulas. The amount for a specific earnings record may be determined by multiplying the monthly retirement benefit by three (by six under the 1939 formula), limited to $240 under the 1950 formula and to $255 under the later formulas. The shift from a lump sum as the only survivor benefit, although potentially a substantial one, to the present situation where the lump sum may equal only 1 month's benefit to the family, portrays clearly the change in the philosophy of the system—to a program of family protection on a continuing basis.

TABLE 9.—*Minimum and maximum lump-sum death payments*

Formula	Minimum	Maximum
1935 [1]		
1939	$60	(2)
1950	60	$240
1952	75	255
1954	90	255
1958	99	255

[1] No amount specified; for person covered at $3,000 a year from age 22 to age 65, amount is $4,515.
[2] No amount specified; "practical" maximum is $360 (see table 3, footnote 2).

SUMMARY

Six different benefit formulas have been prescribed for the old-age, survivors, and disability insurance system, although the first was never operative. The first revisions, made in 1939, reflected a change in philosophy: Family needs were recognized by the provision of supplementary benefits for dependents and for survivors, and benefits payable in the early years of the program were increased. Offsetting these changes, benefits for long-term contributors and for those without dependents were reduced. The second revision, in 1950, made the benefits that were immediately payable the same as those available to the worker covered throughout his career. The 1950 and subsequent changes reflected adjustments to higher earnings levels and an increase in the relative adequacy of the benefits. The 1958 amendments simplified administration through substituting tables for formulas.