

COST ESTIMATES FOR ALTERNATIVE OLD-AGE INSURANCE PLANS AC-2 TO
AC-9 AS SUGGESTED BY THE ADVISORY COUNCIL

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These tables are preliminary and subject to revision.
They are not intended for general distribution.

ACTUARIAL COMPUTATIONS FOR PLAN AC-2

"Present plan (benefits commencing (a) 1940 and (b) 1942) with addition of a 50% benefit to widows of beneficiaries from time widow 60 or over unless remarried. Cost to be kept same as that of present plan and with normal benefits adjusted accordingly. Widow's benefit to be reduced by benefit received after age 65 through her own credits. Also effect on cost if widow's benefits not reduced by benefit received through her own credits."

In order to pay the additional survivorship benefits and still keep the overall costs the same as under the present plan, the benefit formula was revised as follows:

<u>Present Title II</u>	<u>Plan AC-2</u>
(Expressed in terms of an annual annuity)	
6% of first \$3,000	6% of first \$3,000
1% of next \$42,000	1% of next \$24,000
$\frac{1}{3}$ % of excess over \$45,000	$\frac{1}{2}$ % of excess over \$27,000

The computations on this plan are given in the following three tables. They are based upon benefit payments beginning in 1940. The data on survivorship is so arranged that in order to make these calculations a great deal of work would be necessary to make estimates for benefits beginning in 1942 without any significant change in the ultimate figures.

The approximate effect on benefit costs if the widow's benefits are not reduced by the benefit received through her own credits is

estimated to increase the ultimate cost of widows' benefits about 80%. This increased cost would be appreciably less for earlier years but by 1980 it would increase the benefits by \$300,000,000 annually.

Plan AC-2 - Table I

ILLUSTRATIVE MONTHLY ANNUITIES UNDER PROPOSED FORMULAS^{a/}

<u>Years of Coverage</u>	<u>Present Formula</u>	<u>Plan AC-1</u>		<u>Plan AC-2</u>	<u>As Percent of Column 1</u>		
		<u>Single</u>	<u>Married</u>		<u>Column 2</u>	<u>Column 3</u>	<u>Column 4</u>
Average Monthly Wage of \$50							
5	\$15.00	\$15.00	\$22.50	\$15.00	100%	150%	100%
15	20.00	20.00	30.00	20.00	100	150	100
25	25.00	25.00	37.50	25.00	100	150	100
35	30.00	27.50	41.25	30.00	92	138	100
45	35.00	30.00	45.00	35.00	86	129	100
Average Monthly Wage of \$100							
5	\$17.50	\$17.50	\$26.25	\$17.50	100%	150%	100%
15	27.50	26.25	39.38	27.50	95	143	100
25	37.50	31.25	46.88	37.50	83	125	100
35	47.50	36.25	54.38	41.25	76	114	87
45	53.75	39.38	59.07	46.25	73	110	86
Average Monthly Wage of \$150							
5	\$20.00	\$20.00	\$30.00	\$20.00	100%	150%	100%
15	35.00	30.00	45.00	35.00	86	129	100
25	50.00	37.50	56.25	42.50	75	112	85
35	57.50	41.25	61.88	50.00	72	108	87
45	65.00	45.00	67.50	57.50	69	104	88
Average Monthly Wage of \$250							
5	\$25.00	\$25.00	\$37.50	\$25.00	100%	150%	100%
15	50.00	37.50	56.25	42.50	75	112	85
25	62.50	43.75	65.62	55.00	70	105	88
35	75.00	50.00	75.00	67.50	67	100	90
45	85.00	56.25	84.38	80.00	66	99	94

a/ Plan AC-1: Annual annuity of 6% of first \$3,000 plus 1% of next \$12,000 plus $\frac{1}{2}$ % of next \$30,000 plus $\frac{1}{4}$ % of excess over \$45,000. Wife gets 50% and widow gets 75% (after attainment of age 60).

Plan AC-2: Annual annuity of 6% of first \$3,000 plus 1% of next \$24,000 plus $\frac{1}{2}$ % of excess over \$27,000. Widow gets 50% (after attainment of age 60).

Plan AC-2 - Table II

NUMBER OF ANNUITANTS^{a/} AND AVERAGE MONTHLY ANNUITY^{b/}
 UNDER PROPOSED MODIFICATIONS OF TITLE II

Calendar Year	Number of Annuitants ^{a/}		Average Monthly Annuity ^{b/}		
	Present Title II	Proposed Plans	Present Title II	Plan AC-1	Plan AC-2
1940	--	1019	-	\$17.80	\$16.20
1942	175	1356	\$16.70	18.40	16.20
1945	681	1747	18.20	19.20	16.60
1950	1680	2621	20.80	22.40	18.90
1955	2594	3520	23.90	24.90	21.90
1960	3528	4566	28.10	27.20	25.60
1965	4130	5354	31.60	29.10	28.00
1970	4705	6152	35.20	30.90	36.20
1975	5291	6933	39.40	32.80	32.20
1980	5912	7671	43.50	34.40	34.30

a/ In thousands of persons. Includes annuitants and eligible widows but not wives of annuitants for whom allowance is paid (Plan AC-1).

b/ Based on number of annuitants shown in first two columns.

Plan AC-2 - Table III

PROGRESS OF RESERVE UNDER TITLE II WITH SURVIVORSHIP BENEFITS
AND NEW BENEFIT FORMULA

(All figures in millions of dollars)

Calendar Year	Appropri- ation	Benefit Payments	Interest on Reserve	Federal Subsidy	Balance in Reserve	Cumulative	
						Appropri- ations	Benefit Payments
1937	528	4	0	0	524	528	4
1938	535	11	16	0	1,064	1,063	15
1939	542	18	32	0	1,620	1,605	33
1940	827	224	49	0	2,272	2,432	257
1941	829	272	68	0	2,897	3,261	529
1942	829	300	87	0	3,513	4,090	829
1943	1,125	335	105	0	4,408	5,215	1,164
1944	1,137	377	132	0	5,300	6,352	1,541
1945	1,148	409	159	0	6,198	7,500	1,950
1950	1,813	697	334	0	12,572	15,507	4,870
1955	1,904	1,074	547	0	19,595	24,847	9,499
1960	1,994	1,594	738	0	25,751	34,638	16,456
1965	2,080	2,042	895	0	30,771	44,868	25,841
1970	2,165	2,504	1,019	0	34,663	55,525	37,468
1975	2,251	2,986	1,104	0	37,180	66,608	51,404
1980	2,259	3,493	1,133	0 ^{a/}	37,660 ^{a/}	77,887	67,838

^{a/} A Federal subsidy is introduced when the reserve falls below 10 billion dollars. This will not occur until many years after 1980. An annual Federal subsidy of 104 million dollars is necessary to maintain the reserve at the 1980 level.

ACTUARIAL COMPUTATIONS FOR PLAN AC-3

"Revised formula plan (Table 6 in November, 1936, cost estimates distributed after first meeting) with first benefits in 1940 and formula revised to bring eventual average benefits down to approximately \$45. Present tax schedule.

Also effect of a formula by which 1/2% paid on first \$5,000 of total earnings and two next percentage steps readjusted to avoid increase of eventual average benefits."

In order to adopt the heavier weighting of the first portions of total wages and yet avoid an increase in the eventual average benefits as specified above, the subsequent portions of the benefit formula were revised as follows:

Present Title II	Plan AC-3	
	Formula A	Formula B
(Expressed in terms of an annual annuity)		
6% of \$3,000	12% of \$2,000	6% of \$5,000
1% of \$42,000	1% of \$24,000	1% of \$15,000
1/2% of excess	1/2% of excess	1/2% of excess

It might be noted that all three formulas produce exactly the same result for total wages of \$40,000 (annual annuity of \$550).

The computations for the two formulas requested in this plan are given in the following tables. The specifications are as outlined above.

Plan AG-3 - Table I

ILLUSTRATIVE MONTHLY ANNUITIES UNDER PROPOSED FORMULAS^{a/}

<u>Years of Coverage</u>	<u>Present Formula</u>	<u>Formula A</u>	<u>Formula B</u>	<u>As % of Present Formula</u>	
				<u>A</u>	<u>B</u>
Average Monthly Wage of \$25					
5	*	*	*	-	-
15	\$16.25	\$22.08	\$22.50	136%	138%
25	18.75	24.58	27.08	131	144
35	21.25	27.08	29.58	127	139
45	23.75	29.58	32.08	125	135
Average Monthly Wage of \$50					
5	15.00	20.83	15.00	139	100
15	20.00	25.83	28.33	129	142
25	25.00	30.83	33.33	123	133
35	30.00	35.83	37.92	119	126
45	35.00	40.42	40.42	115	115
Average Monthly Wage of \$100					
5	17.50	23.33	25.83	133	148
15	27.50	33.33	35.83	121	130
25	37.50	41.67	41.67	111	111
35	47.50	46.67	46.67	98	98
45	53.75	51.67	51.67	96	96
Average Monthly Wage of \$150					
5	20.00	25.83	28.33	129	142
15	35.00	40.42	40.42	115	115
25	50.00	47.92	47.92	96	96
35	57.50	55.42	55.42	96	96
45	65.00	62.92	62.92	97	97
Average Monthly Wage of \$250					
5	25.00	30.83	33.33	123	133
15	50.00	47.92	47.92	96	96
25	62.50	60.42	60.42	97	97
35	75.00	72.92	72.92	97	97
45	85.00	85.00	85.00	100	100

* Not eligible because total wages are less than \$2000.

^{a/} Formula A: 12% of first \$2000 plus 1% of next \$24,000 plus $\frac{1}{2}$ % of excess over \$26,000.

Formula B: 6% of first \$5000 plus 1% of next \$15,000 plus $\frac{1}{2}$ % of excess over \$20,000.

Plan AC-3 - Table II

AVERAGE MONTHLY ANNUITIES UNDER PROPOSED FORMULAS^{a/}

Calendar Year	Present Title II	Age 65 Amendment	As % of Present Title II		As % of Age 65 Amendment			
			Formula A	Formula B	Formula A	Formula B		
1940	---	---	\$20.50	\$18.30	-	-	-	-
1942	\$16.70	\$16.70	21.30	20.00	128%	120%	128%	120%
1945	18.20	17.60	22.50	22.70	124	125	128	129
1950	20.80	20.80	26.10	27.50	125	132	125	132
1955	23.90	24.80	30.30	32.30	127	135	122	130
1960	28.10	29.50	35.00	36.50	125	130	119	124
1965	31.60	33.30	38.00	38.80	120	123	114	117
1970	35.20	37.40	40.50	40.90	115	116	108	109
1975	39.40	41.10	42.70	42.80	108	109	104	104
1980	43.50	44.70	44.50	44.50	102	102	100	100

a/ Formula A: 12% of first \$2000 plus 1% of next \$24,000 plus $\frac{1}{2}$ % of excess over \$26,000.

Formula B: 6% of first \$5000 plus 1% of next \$15,000 plus $\frac{1}{2}$ % of excess over \$20,000.

Plan AC-3 - Table III

PROGRESS OF RESERVE UNDER TITLE II WITH REVISED FORMULA A^{a/}
AND WITH PRESENT SCALE OF TAXES

(All figures in millions of dollars)

Calendar Year	Appropri- ation	Benefit Payments	Interest on Reserve	Federal Subsidy ^{b/}	Balance in Reserve	Cumulative	
						Appropri- ations	Benefit Payments
1937	528	5	0	0	523	528	5
1938	535	14	16	0	1,060	1,063	19
1939	542	24	32	0	1,610	1,605	43
1940	827	282	48	0	2,203	2,432	325
1941	829	342	66	0	2,756	3,261	667
1942	829	372	84	0	3,296	4,090	1,039
1943	1,125	404	100	0	4,116	5,215	1,443
1944	1,137	451	124	0	4,925	6,352	1,894
1945	1,148	486	148	0	5,735	7,500	2,380
1950	1,813	810	307	0	11,504	15,507	5,801
1955	1,904	1,214	495	0	17,662	24,847	11,084
1960	1,994	1,765	654	0	22,653	34,638	18,850
1965	2,080	2,209	770	0	26,260	44,868	29,102
1970	2,165	2,666	847	0	28,547	55,525	41,565
1975	2,251	3,152	879	0	29,220	66,608	56,319
1980	2,259	3,655	846	0 ^{b/}	27,573	77,887	73,563

a/ 12% of the first \$2000 plus 1% of next \$24,000 plus $\frac{1}{2}$ % of excess over \$26,000. Wages after 65 are credited under Title II and taxed under Title VIII. First annuity payments in 1940.

b/ A Federal subsidy is introduced when the reserve falls below 10 billion dollars. This will not occur until many years after 1980. An annual Federal subsidy of 567 million dollars in each year after 1980 is necessary to maintain the reserve at the 1980 level.

Plan AC-3 - Table IV

PROGRESS OF RESERVE UNDER TITLE II WITH REVISED FORMULA B^{a/}
AND WITH PRESENT SCALE OF TAXES

(All figures in millions of dollars)

Calendar Year	Appropri- ation	Benefit Payments	Interest on Reserve	Federal Subsidy ^{b/}	Balance in Reserve	Cumulative	
						Appropri- ations	Benefit Payments
1937	528	5	0	0	523	528	5
1938	535	14	16	0	1,060	1,063	19
1939	542	24	32	0	1,610	1,605	43
1940	827	256	48	0	2,229	2,432	299
1941	829	318	67	0	2,807	3,261	617
1942	829	352	84	0	3,368	4,090	969
1943	1,125	391	101	0	4,203	5,215	1,360
1944	1,137	446	126	0	5,020	6,352	1,806
1945	1,148	490	151	0	5,829	7,500	2,296
1950	1,813	848	307	0	11,493	15,507	5,834
1955	1,904	1,283	487	0	17,351	24,847	11,401
1960	1,994	1,832	634	0	21,927	34,638	19,511
1965	2,080	2,250	737	0	25,135	44,868	30,027
1970	2,165	2,687	804	0	27,081	55,525	42,641
1975	2,251	3,161	826	0	27,445	66,608	57,466
1980	2,259	3,658	783	0 ^{b/}	25,486 ^{b/}	77,887	74,736

a/ 6% of the first \$5000 plus 1% of next \$15,000 plus $\frac{1}{2}$ % of excess. Wages after 65 are credited under Title II and taxed under Title VIII. First annuity payments in 1940.

b/ A Federal subsidy is introduced when the reserve falls below 10 billion dollars. This will not occur until many years after 1980. An annual Federal subsidy of 634 million dollars in each year after 1980 is necessary to maintain the reserve at the 1980 level.

ACTUARIAL COMPUTATIONS FOR PLAN AC-4

"Present plan with combined taxes stepping up at three-year intervals to not more than 4%. Present benefit formula. Eventual annual government subsidies to maintain a smaller "contingency" reserve."

The computations for Plan AC-4 are given in the following table.

Plan AC-4 - Table I

PROGRESS OF RESERVE UNDER PRESENT TITLE II WITH AGE 65 AMENDMENT^{a/}
AND NEW SCALE OF TAXES UNDER TITLE VIII^{b/}

(All figures in millions of dollars)

Calendar Year	Appropriation	Benefit Payments	Interest on Reserve	Federal Subsidy ^{c/}	Balance in Reserve	Cumulative	
						Appropriations	Benefit Payments
1937	528	5	0	0	523	528	5
1938	535	14	16	0	1,060	1,063	19
1939	542	24	32	0	1,610	1,605	43
1940	838	35	48	0	2,461	2,443	78
1941	847	46	74	0	3,336	3,290	124
1942	820	301	100	0	3,955	4,110	425
1943	1,125	326	119	0	4,873	5,235	751
1944	1,137	366	146	0	5,790	6,372	1,117
1945	1,148	395	174	0	6,717	7,520	1,512
1950	1,209	669	308	0	11,106	13,445	4,325
1955	1,269	1,028	424	0	14,792	19,670	8,762
1960	1,329	1,526	502	0	17,033	26,198	15,424
1965	1,386	1,975	524	0	17,399	33,018	24,476
1970	1,443	2,490	484	0	15,582	40,122	35,927
1975	1,501	3,051	365	0	10,978	47,510	50,018
1980	1,506	3,668	300	1,862	10,000	55,030	67,087

a/ Wages after 65 are credited under Title II and taxed under Title VIII. First annuity payments in 1942.

b/ Schedule of taxes and expense allowances in arriving at appropriations:

Period	Tax Rate	Expense as % of Taxes
1937-39	2%	8 1/3%
1940-42	3	6 2/3
1943-	4	5

c/ A Federal subsidy is introduced when the reserve falls below 10 billion dollars. This first occurs in 1976 when the subsidy necessary is 354 million dollars.

ACTUARIAL COMPUTATIONS FOR PLAN AC-5

"Present plan with combined taxes remaining at 2% until 1942, rising 1% each five-year interval to not more than 5%. Present benefit formula and eventual annual government subsidies to maintain a smaller "contingency" reserve."

The computations for Plan AC-5 are given in the following table.

Plan AC-5 - Table I

PROGRESS OF RESERVE UNDER PRESENT TITLE II WITH AGE 65 AMENDMENTS^{a/}
AND NEW SCALE OF TAXES UNDER TITLE VIII^{b/}

(All figures in millions of dollars)

Calendar Year	Appropri- ation	Benefit Payments	Interest on Reserve	Federal Subsidy ^{c/}	Balance in Reserve	Cumulative	
						Appropri- ations	Benefit Payments
1937	528	5	0	0	523	528	5
1938	535	14	16	0	1,060	1,063	19
1939	542	24	32	0	1,610	1,605	43
1940	549	35	48	0	2,172	2,154	78
1941	555	46	65	0	2,746	2,709	124
1942	820	301	82	0	3,347	3,529	425
1943	829	326	100	0	3,950	4,358	751
1944	837	366	119	0	4,540	5,195	1,117
1945	846	395	136	0	5,127	6,041	1,512
1950	1,209	669	244	0	8,916	11,660	4,325
1955	1,586	1,028	379	0	13,562	19,137	8,762
1960	1,661	1,526	501	0	17,338	27,296	15,424
1965	1,733	1,975	577	0	19,562	35,821	24,476
1970	1,804	2,490	602	0	19,974	44,701	35,927
1975	1,876	3,051	559	0	18,031	53,937	50,018
1980	1,883	3,668	425	0 ^{c/}	12,799	63,336	67,087

a/ Wages after 65 are credited under Title II and taxed under Title VIII. First annuity payments in 1942.

b/ Schedule of taxes and expense allowances in arriving at appropriations:

<u>Period</u>	<u>Tax Rate</u>	<u>Expense as % of Taxes</u>
1937-41	2%	8 1/3%
1942-46	3	6 2/3
1947-51	4	5
1952-	5	5

c/ A Federal subsidy is introduced when the reserve falls below 10 billion dollars. This will not occur until about 1982. Thereafter, a subsidy of 1,485 million dollars will be necessary to maintain the reserve at 10 billion dollars.

ACTUARIAL COMPUTATIONS FOR PLAN AC-6

"Plan with present taxes during period 1937-39 and 1% each from employer, employee, and government starting 1940. Adjustment of future taxes so that reserves will never exceed three years' benefits. Present benefit formula."

The computations for Plan AC-6 are given in the following table, interpreting "three years' benefits" as applicable to the 1980 or ultimate rather than to the earlier select situation.

Plan AC-6 - Table I

PROGRESS OF RESERVE UNDER PRESENT TITLE II WITH AGE 65 AMENDMENT^{a/}
AND NEW SCALE OF TAXES UNDER TITLE VIII INCLUDING
EQUAL FEDERAL CONTRIBUTIONS^{b/}

(All figures in millions of dollars)

Calendar Year	Appropriation from		Total Benefit Payments	Interest on Reserve	Balance in Reserve	Cumulative	
	Employer and Employee Taxes	Federal Government				Appropri- ations	Benefit Payments
1937	528	0	5	0	523	528	5
1938	535	0	14	16	1,060	1,063	19
1939	542	0	24	32	1,610	1,605	43
1940	559	279	35	48	2,461	2,443	78
1941	565	282	46	74	3,336	3,290	124
1942	547	273	301	100	3,955	4,110	425
1943	553	276	326	119	4,577	4,939	751
1944	558	279	366	137	5,185	5,776	1,117
1945	564	282	395	156	5,792	6,622	1,512
1950	594	297	669	238	8,377	10,987	4,325
1955	623	312	1,028	291	9,892	15,576	8,762
1960	997	498	1,526	293	10,044	20,901	15,424
1965	1,387	693	1,975	309	10,724	29,095	24,476
1970	1,443	722	2,490	348	11,612	39,750	35,927
1975	1,501	750	3,051	323	10,296	50,832	50,018
1980	2,259	1,130	3,668	279	9,316	65,497	67,087

a/ Wages after 65 are credited under Title II and taxed under Title VIII. First annuity payments in 1942.

b/ Schedule of taxes, Federal contributions, and expense allowances in arriving at appropriations:

Period	Employer and Employee Tax	Federal Contribution*	Expense as % of Taxes
1937-39	2%	-	8 1/3%
1940-59	2	1%	6 2/3
1960-64	3	1 1/2	5
1965-77	4	2	5
1978-	6	3	5

* As percent of taxable payroll.

ACTUARIAL COMPUTATIONS FOR PLAN AC-7

"Linton plan. Plan as discussed at last meeting of Council and described in Mr. Linton's, "Elaboration of remarks" on the structure of the Old Age Benefit System, distributed following the meeting. Mr. Linton has prepared a more detailed plan in consultation with Mr. Williamson. Plan to include widow's benefits."

Under this plan a new benefit formula is used such that the average basic annuity will be \$25 per month. The benefit formula is so devised as to vary to a small extent with average wage but with no effect being given to period of coverage. No specific formula has been developed, the cost estimates all being based on this average benefit.

An annuitant with wife over 60 who is not an annuitant in her own right receives an additional 60% of his basic annuity, or \$15 per month. The widow of an annuitant receives 100% of her husband's basic annuity, or \$25 per month, after she has attained age 60 if she is not an annuitant in her own right.

Dependent children (children under 16 or under 18 if attending school) of deceased individuals receive a monthly annuity of \$25 for one child, \$40 for two children, and \$50 for three or more children in the family. This benefit thus takes into account some allowance for the mother who is the surviving wife. After the children have

attained the age limit, the benefit ceases.

A flat death benefit of \$250 is paid for every death in the family (including children under 18) of annuitants and covered individuals.

The specifications and computations for this plan are given in the following tables.

Plan AC-7 - Table I

ESTIMATED DISBURSEMENTS UNDER PLAN AC-7

(All figures in millions of dollars)

Calendar Year	Total Taxable Payroll	Estimated Disbursements			Disbursements as % of Payroll		
		Death	Annuity	Total	Death	Annuity	Total
1937	28,820	101	0	101	.35%	--	.35%
1938	29,180	104	0	104	.36	--	.36
1939	29,540	109	0	109	.37	--	.37
1940	29,540	117	395	512	.40	1.54%	1.74
1945	30,210	142	791	933	.47	2.62	3.09
1950	31,810	171	1,172	1,343	.54	3.68	4.22
1955	33,390	198	1,502	1,700	.59	4.50	5.09
1960	34,980	231	1,846	2,077	.66	5.28	5.94
1965	36,480	256	2,097	2,353	.70	5.75	6.45
1970	37,990	283	2,341	2,624	.74	6.16	6.90
1975	39,490	310	2,573	2,883	.79	6.52	7.31
1980	39,630	329	2,764	3,093	.83	6.97	7.80

DESCRIPTION OF PLAN:

I. Monthly Annuity Benefits (First Payments in 1940)

- A. Annuitants - \$25 per month.
- B. Wives of Annuitants - \$15 per month when over age 60 and not annuitants in own right.
- C. Widows of Annuitants - \$25 per month when over age 60 and not annuitants in own right.
- D. Dependent Children of Deceased Covered Individuals or Annuitants - \$25 per month for one child, \$40 per month for two children, and \$50 per month for three or more children. Children must be under 16 (under 18 if attending school).

II. Death Benefits (First Payments in 1937)

- A. Annuitants - \$250 for death of annuitant or wife (regardless of age).
- B. Widows of Annuitants - \$250 (regardless of age).
- C. Covered Individuals - \$250 for each death in family (including children under 18).
- D. Dependent Children Receiving Annuity Benefits - \$250 for each death of a child under 18 or for death of mother.

Plan AC-7 - Table II

PROGRESS OF RESERVE UNDER PLAN AC-7 WITH PRESENT SCALE OF TAXES

(All figures in millions of dollars)

<u>Calendar Year</u>	<u>Appropriation</u>	<u>Benefit Payments</u>	<u>Interest on Reserve</u>	<u>Federal Subsidy^{a/}</u>	<u>Balance in Reserve</u>	<u>Cumulative</u>	
						<u>Appropriations</u>	<u>Benefit Payments</u>
1937	528	101	0	0	427	528	101
1938	535	104	13	0	871	1,063	205
1939	542	109	26	0	1,330	1,605	314
1940	827	512	40	0	1,685	2,432	826
1941	829	624	51	0	1,941	3,261	1,450
1942	829	707	58	0	2,121	4,090	2,157
1943	1,125	783	64	0	2,527	5,215	2,940
1944	1,137	869	76	0	2,871	6,352	3,809
1945	1,148	933	86	0	3,172	7,500	4,742
1950	1,813	1,343	156	0	5,836	15,507	10,706
1955	1,904	1,700	238	0	8,363	24,847	18,556
1960	1,994	2,077	288	0	9,815	34,638	28,249
1965	2,080	2,353	307	0	10,251	44,868	39,550
1970	2,165	2,624	300	159	10,000	55,525	52,184
1975	2,251	2,883	300	332	10,000	66,608	66,095
1980	2,259	3,093	300	534	10,000	77,887	81,151

^{a/} A Federal subsidy is introduced when the reserve falls below 10 billion dollars. This first occurs in 1969 when the subsidy necessary is 47 million dollars.

Plan AC-7 - Table III

ESTIMATED NUMBER OF PERSONS RECEIVING MONTHLY ANNUITY BENEFITS UNDER PLAN AC-7

(All figures in thousands of persons)

Calendar Year	Male Annuitants		Female Annuitants	Total Primary Annuitants	Eligible Widows ^{a/}	Dependent Children	Total Receiving Annuities ^{b/}
	With Allow- ance for Wife	Without Allow- ance for Wife					
1940	398	484	124	1006	13	89	1536
1945	587	752	222	1561	186	800	3401
1950	793	1070	342	2205	416	1214	5033
1955	941	1385	517	2843	677	1381	6302
1960	1096	1783	738	3617	949	1393	7519
1965	1170	2059	922	4151	1203	1382	8367
1970	1225	2353	1130	4708	1444	1373	9208
1975	1221	2641	1429	5291	1642	1365	9974
1980	1084	2942	1886	5912	1759	1338	10539

^{a/} Includes all widows of annuitants who are receiving benefits. Does not include those under age 60 who will receive benefits when they attain age 60, or those over 65 who are receiving benefits in their own right.

^{b/} Includes all annuitants, wives of annuitants for whom allowance is received, eligible widows, dependent children, and mothers of dependent children (there is roughly one such mother for every three dependent children).

ACTUARIAL COMPUTATIONS FOR PLAN AC-8

Plan AC-8 is based upon the following specifications:

- (1) In 1940 and thereafter the cost will be shared equally by the employees, employers, and the government.
- (2) The reserve should be a contingency reserve only. In other words, it should be limited to be between 10 and 15 billion dollars.
- (3) The formula should be adjusted so that the ultimate benefits could be financed by a 2% tax on the employees, a 2% tax on the employers, and a contribution of 2% of taxable payroll from the Federal government and interest on the contingency reserve.
- (4) All employees should be guaranteed that they will receive at least 3% compound interest on their taxes.

In regard to criterion #4, by limiting the ultimate employee tax to 2%, the present 3½% death benefit guarantees at least 3% interest to all individuals with less than 37 years of continuous coverage. It would probably be necessary to increase the death benefit to 4% if criterion #4 was strictly adhered to. However, the present 3½% death benefit was retained since for all practical purposes everybody will get a return of 3% on their money with almost all individuals getting a lot more, particularly those who become annuitants.

In order to hold down the ultimate cost so that it equals the appropriation based on a 6% tax rate (2.2 billion dollars) plus the small amount of interest on the contingency reserve (.3 billion

dollars), it is necessary to reduce the benefit formula drastically. The following formula was, therefore, used: 6% of the first \$3000 plus 1% of the next \$12,000 plus $\frac{1}{4}$ % of the excess over \$15,000. From this it can be seen that \$15,000 of total wages produces a monthly annuity of \$25.

Plan AC-8 - Table I

ILLUSTRATIVE MONTHLY BENEFITS UNDER PLAN AC-8^{a/}

<u>Years of Coverage</u>	<u>Present Formula</u>	<u>Proposed Formula</u>	<u>Ratio</u>	<u>Present Formula</u>	<u>Proposed Formula</u>	<u>Ratio</u>
Average Monthly Wage of \$25				Average Monthly Wage of \$50		
5	*	*	-	\$15.00	\$15.00	100%
15	\$16.25	\$16.25	100%	20.00	20.00	100
25	18.75	18.75	100	25.00	25.00	100
35	21.25	21.25	100	30.00	26.25	88
45	23.75	23.75	100	35.00	27.50	79
Average Monthly Wage of \$100				Average Monthly Wage of \$150		
5	17.50	17.50	100	20.00	20.00	100
15	27.50	25.62	93	35.00	27.50	79
25	37.50	28.12	75	50.00	31.25	62
35	47.50	30.62	64	57.50	35.00	61
45	53.75	33.12	62	65.00	38.75	60
Average Monthly Wage of \$200				Average Monthly Wage of \$250		
5	22.50	22.50	100	25.00	25.00	100
15	42.50	29.38	69	50.00	31.25	62
25	56.25	34.38	61	62.50	37.50	60
35	66.25	39.38	59	75.00	43.75	58
45	76.25	44.38	58	85.00	50.00	59

* Not eligible.

^{a/} 6% of first \$3000 plus 1% of next \$12,000 plus ½% of excess over \$15,000.

Plan AC-8 - Table II

COMPARISON OF TOTAL BENEFIT PAYMENTS AND AVERAGE MONTHLY ANNUITIES
UNDER PRESENT TITLE II, AGE 65 AMENDMENT, AND PROPOSED PLAN

<u>Calendar Year</u>	<u>Present Title II</u>	<u>Age 65 Amendment</u>	<u>Proposed Plan</u>	<u>As % of Present Title II</u>	
				<u>Age 65</u>	<u>Proposed</u>
Total Benefit Payments^{a/}					
1942	82	301	301	367	367
1945	218	395	395	181	181
1950	538	669	669	124	124
1955	921	1,028	996	112	108
1960	1,430	1,526	1,357	107	95
1965	1,875	1,975	1,648	105	88
1970	2,355	2,490	1,945	106	83
1975	2,934	3,051	2,266	104	77
1980	3,576	3,668	2,603	103	73
Average Monthly Annuity					
1942	\$16.70	\$16.70	\$16.70	100	100
1945	18.20	17.60	17.60	97	97
1950	20.80	20.80	20.80	100	100
1955	23.90	24.80	23.90	104	100
1960	28.10	29.50	25.50	105	91
1965	31.60	33.30	26.60	105	84
1970	35.20	37.40	27.50	106	78
1975	39.40	41.10	28.40	104	72
1980	43.50	44.70	29.20	103	67

^{a/} In millions of dollars.

Plan AC-3 - Table III

PROGRESS OF RESERVE UNDER NEW FORMULA^{a/} AND NEW SCALE OF TAXES UNDER TITLE VIII
INCLUDING EQUAL FEDERAL CONTRIBUTIONS^{b/}

(All figures in millions of dollars)

Calendar Year	Appropriation from		Total Benefit Payments	Interest on Reserve	Balance in Reserve	Cumulative	
	Employer and Employee Taxes	Federal Government				Appropri- ations	Benefit Payments
1937	352	176	5	0	523	528	5
1938	357	178	14	16	1,060	1,063	19
1939	361	181	24	32	1,610	1,605	43
1940	559	279	35	48	2,461	2,443	78
1941	565	282	46	74	3,336	3,290	124
1942	547	273	301	100	3,955	4,110	425
1943	553	276	326	119	4,577	4,939	751
1944	558	279	366	137	5,185	5,776	1,117
1945	564	282	395	156	5,792	6,622	1,512
1950	594	297	669	238	8,377	10,987	4,325
1955	623	312	996	293	9,987	15,576	8,672
1960	997	498	1,357	309	10,732	20,901	14,782
1965	1,040	520	1,648	364	12,393	28,575	22,515
1970	1,083	541	1,945	392	13,135	36,568	31,680
1975	1,125	563	2,266	388	12,744	44,879	42,345
1980	1,506	753	2,603	338	11,260	53,902	54,665

^{a/} 6% of the first \$3000 plus 1% of next \$12,000 plus $\frac{1}{4}$ % of excess. Wages after 65 are credited under Title II and taxed under Title VIII. First annuity payments in 1942. Death benefits are the same as in the present Act.

^{b/} Schedule of taxes, Federal contributions, and expense allowances in arriving at appropriations:

Period	Employer and Employee Tax	Federal Contribution*	Expense as % of Taxes
1937-39	2%	-	8 $\frac{1}{3}$ %
1940-59	2	1%	6 $\frac{2}{3}$
1960-79	3	1 $\frac{1}{2}$	5
1980-	4	2	5

* As percent of taxable payroll.

ACTUARIAL COMPUTATIONS FOR PLAN AC-9

"Hohaus Formula No. 1, as explained on page 10 in his memorandum presented at December 10th meeting of Council and subsequently distributed. Annual benefit to be 40% on first \$600 of average annual earnings, plus 20% on second \$600, plus 10% on excess above \$1,200 up to \$3,000.

Computations to show cost of supplementing plan by a benefit to (a) aged wives and widows of beneficiaries and (b) widows of contributors. Mr. Hohaus has conferred with Mr. Williamson, Actuary of the Social Security Board, as to the details of plan."

Under this plan an annuitant with a wife over 65 who is not an annuitant in her own right receives an additional 50% of his basic annuity. The widow of an annuitant receives 75% of her husband's basic annuity after she has attained age 65 if she is not an annuitant in her own right.

Dependent children (children under 16 or under 18 if attending school) of deceased individuals receive annuities of almost 75% of that arising under Formula 1 (denoted by Formula A hereafter). Where there are more than two children in the family, larger annuities are paid (up to 100% of that arising under Formula A where there are four or more children). This benefit thus takes into account some allowance for the mother who is the surviving wife. After the children have attained the age limit, the benefit ceases.

The widow of a man dying before age 65 receives an annuity of almost 75% of that arising under Formula A when she attains age 65 if she is not an annuitant in her own right.

There are no death benefits other than the annuity for dependent children and the deferred annuity at 65 for the widow.

The progress of reserve under Formula A is given for a tax schedule of 2% for 8 years, increasing by 1% every 5 years thereafter to a maximum of 5%.

In addition to the computations for Formula A, data is presented for Formula B (Formula No. 2 on Page 11 of Mr. Hohaus' memorandum). The formula has been translated from being on the basis of taxes paid by the employee to a "total wage" basis by assuming that the employee tax is level at 2%.

The allowances for the wives and widows of annuitants are 50% and 75% of the basic annuity, respectively. There are no annuities for dependent children and widows of men dying before age 65 as under Formula A, but instead the same death benefit as under the present Title II.

The progress of reserve under Formula B is given for the present tax scale, but it is assumed that the employee tax never exceeds 2%.

Plan AC-9 - Table I

ILLUSTRATIVE MONTHLY ANNUITIES UNDER PROPOSED FORMULAS^{a/}

<u>Years of Coverage</u>	<u>Present Formula</u>	<u>Formula</u>		<u>As % of Present Formula</u>	
		<u>A</u>	<u>B</u>	<u>A</u>	<u>B</u>
Average Monthly Wage of \$25					
5	*	\$10.00	*	-	-
15	\$16.25	10.00	\$26.50	62%	163%
25	18.75	10.00	27.50	53	147
35	21.25	10.00	28.50	47	134
45	23.75	10.00	29.50	42	124
Average Monthly Wage of \$50					
5	15.00	20.00	26.00	133	173
15	20.00	20.00	28.00	100	140
25	25.00	20.00	30.00	80	120
35	30.00	20.00	32.00	67	107
45	35.00	20.00	33.67	57	96
Average Monthly Wage of \$100					
5	17.50	30.00	27.00	171	154
15	27.50	30.00	31.00	109	113
25	37.50	30.00	34.17	80	91
35	47.50	30.00	36.17	63	76
45	53.75	30.00	37.83	56	70
Average Monthly Wage of \$150					
5	20.00	35.00	28.00	175	140
15	35.00	35.00	33.67	100	96
25	50.00	35.00	36.67	70	73
35	57.50	35.00	38.58	61	67
45	65.00	35.00	40.08	54	62
Average Monthly Wage of \$250					
5	25.00	45.00	30.00	180	120
15	50.00	45.00	36.67	90	73
25	62.50	45.00	39.58	72	63
35	75.00	45.00	42.08	60	56
45	85.00	45.00	44.58	53	52

* Not eligible because total wages are less than \$2000.

^{a/} Formula A: 40% of the first \$600 of average wage plus 20% of the next \$600 plus 10% of the next \$1800. \$540 maximum.
 Formula B: \$300 plus .4% of first \$25,000 plus .2% of next \$25,000 plus .1% of excess.

Plan AC-9 - Table II

ESTIMATED NUMBER OF PERSONS RECEIVING MONTHLY ANNUITY BENEFITS UNDER FORMULA A OF PLAN AC-9

(All figures in thousands of persons)

Calendar Year	Male Annuitants		Female Annuitants	Eligible Widows of		Dependent Children	Total Receiving Annuities ^{c/}
	With Allow- ance for Wife	Without Allow- ance for Wife		Annui- tants ^{a/}	Covered ^{b/}		
1940	266	616	124	7	1	89	1399
1945	387	952	222	132	23	800	3170
1950	514	1349	342	321	85	1214	4744
1955	592	1734	517	539	192	1381	6007
1960	664	2215	738	698	315	1393	7151
1965	685	2544	922	825	432	1382	7936
1970	688	2890	1130	913	520	1373	8660
1975	641	3221	1429	965	548	1365	9265
1980	480	3546	1886	949	508	1338	9633

^{a/} Includes all widows of annuitants who are receiving benefits. Does not include those under age 65 who will receive benefits when they attain age 65, or those over 65 who are receiving benefits in their own right.

^{b/} Includes all widows aged 65 and over of covered individuals who died before age 65. Does not include those under age 65 who will receive benefits when they attain age 65, or those over 65 who are receiving benefits in their own right.

^{c/} Includes all annuitants, wives of annuitants for whom allowance is received, eligible widows, dependent children, and mothers of dependent children (there is roughly one such mother for every three dependent children).

Plan AC-9 - Table III

ESTIMATED DISBURSEMENTS UNDER FORMULA A OF PLAN AC-9

(All figures in millions of dollars)

Calendar Year	Annuitants In Own Right	Allowances For Wives	Eligible Annuitants	Widows of Covered	Dependent Children	Total Benefits
1940	302	40	2	0	9	353
1945	468	58	30	5	80	641
1950	661	77	72	17	121	948
1955	852	89	121	38	138	1,238
1960	1,085	100	157	63	139	1,544
1965	1,245	103	186	86	138	1,758
1970	1,413	103	205	104	137	1,962
1975	1,587	96	217	110	136	2,146
1980	1,774	72	214	102	134	2,296

As Percentage of Payroll

1940	1.02%	.14%	.01%	----	.03%	1.20%
1945	1.55	.19	.10	.02%	.26	2.12
1950	2.08	.24	.23	.05	.38	2.98
1955	2.55	.27	.36	.11	.41	3.70
1960	3.10	.29	.45	.18	.40	4.42
1965	3.41	.28	.51	.24	.38	4.82
1970	3.72	.27	.54	.27	.36	5.16
1975	4.02	.24	.55	.28	.34	5.43
1980	4.48	.18	.54	.26	.34	5.80

DESCRIPTION OF PLAN:

I. Benefit Formula (Annual Amount of Annuity)

	Percentage to Apply to Average Wage		
	First \$600	Next \$600	Next \$1800
Annuitant	40%	20%	10%
Allowance for Wife	20	10	5
Widow of Annuitant	30	15	7½
Widow of Covered	30	10	5
Dependent Children (2 or less)	30	10	5
Dependent Children (3)	35	15	5
Dependent Children (4 or more)	40	20	10

II. Eligibility: Wife's allowance and widow's annuity are payable after attainment of age 65 if not an annuitant in own right.

Plan AC-9 - Table IV

AVERAGE ANNUAL ANNUITIES^{a/} UNDER FORMULAS A AND B OF PLAN AC-9 COMPARED WITH THOSE UNDER THE EXISTING FEDERAL OLD-AGE INSURANCE PLAN

Calendar Year	Males with Allowance for Wife ^{a/}		Females and Other Males		Widows of Annuitants ^{b/}		Present Title II
	Formula A	Formula B	Formula A	Formula B	Formula A	Formula B	
1940	\$450	\$473	\$300	\$315	\$225	\$236	-
1945	450	488	300	325	225	239	\$218
1950	450	515	300	343	225	244	250
1955	450	546	300	364	225	252	287
1960	450	582	300	388	225	261	337
1965	450	603	300	402	225	273	379
1970	450	620	300	414	225	287	422
1975	450	636	300	424	225	299	473
1980	450	648	300	432	225	310	522

^{a/} Under Plan A dependent children of deceased covered individuals receive annuities as do also widows of men dying before age 65 when they attain age 65. The average annual benefit per family for dependent children is \$225 or about \$100 per child. The average annual benefit for widows of men dying before age 65 is \$200 upon attainment of age 65.

^{b/} Under Formula A wives and widows of annuitants are eligible for benefits at age 65, whereas under Formula B they are eligible at age 60.

Plan AC-9 - Table V

PROGRESS OF RESERVE UNDER TITLE II WITH REVISED FORMULA A
AND WITH NEW SCALE OF TAXES^{a/}

(All figures in millions of dollars)

Calendar Year	Appropri- ation	Benefit Payments	Interest on Reserve	Federal Subsidy ^{b/}	Balance in Reserve	Cumulative	
						Appropri- ations	Benefit Payments
1937	528	0	0	0	528	528	0
1938	535	0	16	0	1,079	1,063	0
1939	542	0	32	0	1,653	1,605	0
1940	542	353	50	0	1,892	2,147	353
1941	542	434	57	0	2,057	2,689	787
1942	542	487	62	0	2,174	3,231	1,274
1943	542	540	65	0	2,241	3,773	1,814
1944	548	598	67	0	2,258	4,321	2,412
1945	846	641	68	0	2,531	5,167	3,053
1950	1,209	948	93	0	3,459	9,850	7,237
1955	1,587	1,238	133	0	4,930	16,393	12,908
1960	1,662	1,544	194	0	6,774	24,553	20,084
1965	1,733	1,758	232	0	7,941	33,078	28,533
1970	1,804	1,962	255	0	8,598	41,959	37,993
1975	1,876	2,146	263	0	8,764	51,194	48,368
1980	1,882	2,296	261	153 ^{b/}	8,700	60,593	59,555

a/ Schedule of taxes and expense allowances in arriving at appropriations:

<u>Period</u>	<u>Tax Rate</u>	<u>Expense as % of Taxes</u>
1937-44	2%	8 1/3%
1945-49	3	6 2/3
1950-54	4	5
1955-	5	5

b/ A Federal subsidy is introduced when the reserve falls below 8.7 billion dol-
lars. This first occurs in 1977 when the subsidy is 37 million dollars. The
reserve reaches a maximum of 8,771 million dollars in 1974.

Plan AC-9 - Table VI

PROGRESS OF RESERVE UNDER TITLE II WITH REVISED FORMULA ^{a/}
AND WITH PRESENT SCALE OF TAXES

(All figures in millions of dollars)

Calendar Year	Appropri- ation	Benefit Payments	Interest on Reserve	Federal Subsidy ^{b/}	Balance in Reserve	Cumulative	
						Appropri- ations	Benefit Payments
1937	528	4	0	0	524	528	4
1938	535	11	16	0	1,064	1,063	15
1939	542	18	32	0	1,620	1,605	33
1940	827	387	49	0	2,109	2,432	420
1941	829	464	63	0	2,537	3,261	884
1942	829	509	76	0	2,933	4,090	1,393
1943	1,125	560	88	0	3,586	5,215	1,953
1944	1,137	619	108	0	4,212	6,352	2,572
1945	1,148	663	126	0	4,823	7,500	3,235
1950	1,813	1,027	250	0	9,365	15,507	7,678
1955	1,904	1,427	394	0	14,020	24,847	14,057
1960	1,994	1,905	507	0	17,500	34,638	22,696
1965	2,080	2,270	582	0	19,780	44,868	33,419
1970	2,165	2,627	626	0	21,014	55,525	45,895
1975	2,251	2,975	635	0	21,092	66,608	60,071
1980	2,259	3,285	603	0 ^{b/}	19,666 ^{b/}	77,887	75,875

^{a/} Annual annuity equals \$300 plus .4% of first \$25,000 plus .2% of next \$25,000 plus .1% of excess. Wages after 65 are credited under Title II and taxed under Title VIII.

Death benefit before 65 is same as present Title II; no death benefit after 65. Annuity is increased 50% for married man with wife over 65. Widow of annuitant receives 75% of husband's basic annuity when she is over 65. Allowance for wife and annuity for widow are not available if she is receiving an annuity in her own right.

^{b/} A Federal subsidy is introduced when the reserve falls below 10 billion dollars. This will not occur until many years after 1980. An annual Federal subsidy of 436 million dollars in each year after 1980 is necessary to maintain the reserve at the 1980 level.