ACTUARIAL NOTE

COMPUTER PROGRAM FOR PRIMARY INSURANCE AMOUNT

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The primary insurance amount for every possible value of average monthly wage is shown in a benefit table contained in the Social Security Act. While the benefit table is sometimes described in terms of a benefit formula, the approximate formula so used will not reproduce the amounts that appear in the table.

In order to reproduce the exact amounts in the benefit table through a computer routine, the formula shown in Table 1 was derived and was used to develop the computer program shown in Table 2.

Table 1

A PRECISE FORMULA FOR PRIMARY INSURANCE AMOUNT
UNDER BENEFIT TABLE
March 17, 1971

Average monthly wage	First computation	Adjustment	Successive multipliers
$76 or under	$ 70.40	—	1.00
77– 94	7.45 + .55 w	Round	1.13, 1.15, 1.10
95–110	.5885 w	Round	1.07, 1.13, 1.15, 1.10
111–403	41.195 + .214 w	Round	1.07, 1.13, 1.15, 1.10
404–552	50.195 + .214 w	Round	1.13, 1.15, 1.10
553	240.30	—	1.00
554–651	33.233 + .2843 w	Round	1.15, 1.10
652	275.80	—	1.00
653–656	276.60	—	1.00
657–750	145.40 + .2 w	Round; Add $.40	1.00

Legend: w = average monthly wage.

"Round" denotes that the preceding value is rounded to the nearest multiple of $1.00 if it is not a multiple of $1.00.

The successive multipliers are applied to the adjusted amount (or product of adjusted amount and ratio) in the order shown. Each product is raised, before the next ratio is applied, to the next higher multiple of $.10 if it is not a multiple of $.10 (for example, $.105 is raised to $.20). For an AMW of $84, the calculations are as follows:

(1) $7.45 + .55 × 84.00 = 53.65, rounded to 54.
(2) $54.00 × 1.13 = 61.020, rounded to 61.10.
(3) $61.10 × 1.15 = 70.265, rounded to 70.30.
(4) $70.30 × 1.10 = 77.330, rounded to 77.40.