**TRANSACTIONS OF SOCIETY OF ACTUARIES**
**1962 VOL. 14 PT 2**

# 1958 CSO TABLE

A. What changes are occurring as a result of adoption of the new table with respect to:
   1. Level of gross premiums—participating and nonparticipating?
   2. Policy dividend patterns?
   3. Interest assumptions for reserves and nonforfeiture benefits?
   4. Reserve modification methods, if any?
   5. Level and incidence of cash values and relationship to reserve?

B. What other changes are being made simultaneously with adoption of the 1958 CSO Table, such as in:
   1. Policy format?
   2. Benefit provisions?
   3. Settlement options?

C. What are the advantages and disadvantages of early adoption of the 1958 CSO Table for:
   1. Participating policies?
   2. Nonparticipating policies?

MR. RICHARD G. RINK: For our Company, the Midland Mutual, the gross premiums are generally lower in the 1958 CSO series than in the 1941 CSO series. The factors that affect the level of the gross premiums are as follows:

*a*) Interest Rates: More optimistic interest projections are now possible than were conceivable in 1947, which tends to lower rates today as compared to then.

*b*) Expense Rates: The influence of higher expense levels raises the premium rates unless companies have been able to overcome inflationary costs satisfactorily with improved methods and better equipment. Also one should observe that increasing the average size of policy no longer has the effect of lowering the cost per thousand dollars of insurance upon the adoption of the grading of premiums by size of policy.

*c*) Mortality: Mortality is slightly better than it was 15 years ago, which might bring the rates down a little. However, mortality experience seems to have leveled off in recent years.

*d*) Termination Rates: Termination rates are higher industry-wide than they were 10 or 15 years ago. This tends to make premiums somewhat higher, assuming that the early cash values are larger than the asset shares.

*e*) Female Rate Reduction: Upon recognizing female discounts for better mortality for the first time, it would seem that the male rates would have to be raised a bit over the composite rate that was being charged heretofore.

*f*) Early Cash Values: There has been a greater tendency in recent years to adopt cash values that are above the minimum at the outset and merge with the reserve in 10 or 20 years. These higher early values tend to raise the gross premium level.

*g*) Later Cash Values: The higher these later cash values are, the higher are the premiums. Cash values in the 10th to 20th years are dependent on a number of things.

(1) Whether or not the values are equal to the net level premium reserve or are at a lower cash value level.

(2) Whether or not there is included the benefit of return of premium from the end of the month of death or the assumption of immediate payment of claims.

(3) What interest level is chosen: The lower the interest rate selected, the more conservative will be the basis for the future, but the higher the gross premiums will have to be to cover the resultant higher values.

(4) In the case of single premium insurance and limited payment life insurance the lower net single premiums of the 1958 CSO Table are responsible for considerably lowering the required premium so long as the other basic assumptions are the same.

*h*) Extended Insurance: If the 1958 CSO Table is used rather than the CET Table for extended insurance, the benefit granted is somewhat larger.

*i*) The philosophy of the Company regarding "high premium, high dividend" basis versus a "low premium, low dividend" basis will influence the final decision on premium levels.

*j*) Competition: Last, but not least, premiums are affected by what other companies are doing. In our case, after adjusting for the difference in cash values, our gross premiums differ very little from the gross premium levels of many of the leading companies which have established their premiums in the last few years.

I believe that policy dividend patterns are more a function of company philosophy than anything else. In most instances a dividend is declared before the duration at which a theoretical justification for it exists. Hence there is plenty of room for company philosophy to influence the slope of the dividend scale. We were influenced a great deal by the pattern of dividends of some of the leading companies.

One must weigh the advantages and the disadvantages of a steep slope in the dividend scale versus a flat scale. If a scale is steep, the early net cost results are generally unfavorable and the later net costs are favorable. A flat scale produces the opposite effect.

In setting gross premium rates, as well as in establishing what interest basis to use with the 1958 CSO Table, one must bear in mind that in a participating structure the premiums will be charged over a long period of time and that desired equity cannot be maintained in the future unless there are sufficient premium margins for the most unfavorable period in the future. Our choice of a $2\frac{1}{2}\%$ interest basis was geared to the idea that it is quite possible that paid-up insurance on a higher interest assumption could not be self-supporting if interest rates should drop in the future.

Our approach to the cash values question was to illustrate what the premiums and net costs would be for various levels of cash values and then to choose that pattern of cash values that we thought would be most acceptable saleswise. We ended up with a pattern that grants higher than minimum values initially and grades to the net level premium reserves in 20 years.

We have adopted a provision in our regular line of policies that grants the right to apply a lump sum payment under the settlement options, along with the surrender value of the policy, to buy additional income. We require a specified expense charge to be paid in addition to the amount applied under the settlement options.

Additional monthly income may be bought up to the maximum of $20 monthly income per $1,000 of face amount. We decided to do this in preference to offering an annual premium rider which grants an "option to purchase an annuity." Our reasons for doing this are:

(1) Only those exercising the option would pay for it.
(2) No reserve problems or record-keeping expenses are necessary with respect to the benefit.
(3) The expense charges at the time of exercising the option are intended to provide adequate margins.
(4) The exercise of an option to purchase an additional annuity has the implication in it that a substantial sum must be made available at the time of such purchase. Whether this sum is increased a small percentage for an expense charge or not does not seem to disturb the general idea of purchasing an additional annuity at a rate guaranteed at the time of the sale.

An objection to this clause might be that we are offering benefits paid for by premiums on which no commission is paid. However, under the annual premium rider the amount of commission related to the money applied under the settlement options is really quite low. It is only the commission on the *expense charge* in effect that is being eliminated by this approach.

We decided to use age last birthday instead of age nearest birthday mainly for field reasons—its simplicity and acceptability by the field as a progressive step were the deciding factors.

We did not use the apportionable premium concept because we didn't think it would have enough sales impact. We felt that it would cost too much for the amount of good that we could get out of it saleswise.

For our settlement options we have adopted a method of recognizing the secular trend in mortality by adjusting the age at which you enter the settlement option table downward as the time between the date of issue and the date of applying proceeds under the settlement option lengthens.

We have used a policy format $8\frac{1}{2}''$ by $14''$ with a short front page so that all fill-in information is located on the lower portion of the first insert sheet. We have accomplished three major objectives in this form.

(1) No riders require fill-ins.

(2) Standard and substandard issues are on the same form.

(3) Juvenile and adult policies as well as all applicant-owned and insured-owned policies are issued on the same form. This is accomplished by naming an owner and an insured.

MR. GORDON H. LEAVITT: Our organization, the Savings Banks Life Insurance system of New York, has life income settlement options that will be participating on a level dividend basis, a device mentioned several times in actuarial literature (Maclean and Marshall: *Distribution of Surplus*, pp. 98 *ff*.) but not often used in practice.

The total income initially payable is the policy proceeds divided by an annuity on the dividend basis. The dividend remains constant until the scale itself is changed. When this happens, the new total income is the present value of the total future income on the prior dividend basis divided by the attained age annuity value on the new basis.

Under this method some of the surplus earned in the early contract years is retained in order to be able to pay a level income over future years. Decreases in the income payable are possible if future dividend scales involve less favorable interest and mortality assumptions, but since credit is given for the surplus retained the annual income can never fall to the guaranteed rates as long as the guaranteed interest and mortality assumptions can be met.

Other advantages to this system are that an equitable, attractive and fairly constant income can be paid to each beneficiary without the necessity of making shaky interest and mortality guarantees.

The mortality and interest bases will be:

Guaranteed: Interest, $2\frac{1}{2}\%$
Mortality, 1960 (Sternhell-Page) modification and projection of $a$-1949; direct projection for 20 years combined with generation projection from age 50.

Dividend: Interest, $4\%$
Mortality, B Generation projection of $a$-1949 from age 65.

MONTHLY INCOME PER $1,000 OF PROCEEDS
10 YEARS CERTAIN AND LIFE

| Age | Female | | Male | |
|---|---|---|---|---|
| | Guaranteed | Guaranteed + Dividend | Guaranteed | Guaranteed + Dividend |
| 60 | $4.50 | $5.62 | $4.97 | $6.19 |
| 65 | 5.11 | 6.27 | 5.63 | 6.88 |
| 70 | 5.88 | 7.10 | 6.43 | 7.68 |
| 75 | 6.79 | 8.07 | 7.30 | 8.55 |
| 80 | 7.72 | 9.02 | 8.10 | 9.32 |

As might be expected, the resulting monthly income rates are below practically all published figures on the guaranteed basis and considerably higher on the dividend basis. We have had some negative reaction to the low guaranteed rates. We also are using the level dividend approach on our fixed period supplementary contracts without life contingencies.

MR. ELGIN R. BATHO: A survey of the 1962 edition of *Who Writes What* lists 22 companies as having changed to the 1958 CSO Table, as compared with only six companies in the 1961 issue. Two of these companies in making a change increased their interest assumption from $2\frac{1}{2}\%$ to 3% but, as far as I can determine, most of the others made no change in interest assumptions. However, even though the interest assumption remains unchanged, the reduction in the mortality rate, unless offset by an increase in the loading, would result in a lower level of gross premiums for participating business. I think it is safe to assume that the adoption of the new table is resulting, in general, in a slightly lower level of gross premiums.

With the reduction in tabular mortality rates and either the same or less excess interest available, the natural result is a lower dividend pattern.

When the Berkshire changed over to the 1958 CSO Table last year we made several simultaneous improvements in our policy forms. The wording was streamlined, and all of the fill-in information was transferred to the first page. This page therefore shows not only the usual information about the basic policy, but also the details as to amount of coverage, premium, benefit period, etc., of all the riders and special benefits attached to and made a part of the policy.

We also made certain liberalizations and improvements in benefit provisions, including the "Change of Plan" clause. In our new series of policies, we have limited the period in which difference of premiums is charged to the first two policy years, and thereafter we are charging the difference in cash values plus 5% thereof.

We also changed the basis of our settlement options involving life contingencies from the 1937 Standard Annuity Table with $2\frac{1}{2}\%$ interest, to Mr. McCarter's 1955 American Annuity Table with $2\frac{3}{4}\%$ interest. This resulted in somewhat lower rates at young ages and somewhat higher rates at the older ages.

MR. JOHN G. SELIG: Congressional Life Insurance Company will issue nonparticipating contracts entirely. The contracts will be on the 1958 CSO $3\frac{1}{2}\%$, with minimum cash values. The reserves will be on the commissioners reserve valuation method with continuous functions.

We have adopted a modified policy fee. We are allowing a four percent discount for premiums in excess of $90 annually. This works out to a policy fee of $3.60. Of course, this is not adequate but we are able to compete very well in the small policy market by applying a policy fee in this manner.

MR. JACK E. WOOD: Our staff has been doing work on changes to the 1958 CSO Table for a number of companies, including our regular clients as well as some other companies which have retained us to assist them in this specific job.

Among our clients, the interest rates adopted both for reserves and for nonforfeiture values have been, almost without exception, $2\frac{1}{2}\%$ for participating business and 3% for nonparticipating business.

There appears to be no inclination on the part of these companies to change from the commissioners reserve valuation method.

With regard to cash values, most of our clients were previously on the minimum basis. Now most are using values which grade into the reserve at the end of the 20th year or (less frequently) the 15th year. For extended insurance, all are using the CET Table, although very few of them had employed the 130% modification of the 1941 CSO Table.

The general level of premiums for both participating and nonparticipating lines, and of dividends, is a little lower than before. For nonparticipating companies, the size of the reduction seems to depend upon the length of time since the last revision of their rate structure.

To date, all of our clients have included a quantity discount in their rate structure, and have done it with a policy fee or modification of that method, rather than by use of the band method.

No trend has developed with respect to female rates. It seems most likely that those companies which elect to differentiate between male and female rates will choose to have different rate scales but keep the same policy values for males and females, instead of using an age setback for female rates and nonforfeiture values.

There has been very little concern among our clients over the question of modernizing the basis of settlement options. Up to now they have continued to use the 1937 Standard Annuity Table, with perhaps an increase in the age setback. Not one has elected to change to a more modern mortality table as the basis for the life income options.

MR. THOMAS K. PENNINGTON: We at George V. Stennes and Associates have noted a trend toward the 1958 CSO age last birthday basis among some of our clients for ordinary issues. For settlement options two of our clients have tentatively adopted the $a$-1949 table with a 30-year projection.