**TRANSACTIONS OF SOCIETY OF ACTUARIES
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1958 CSO Mortality Table

A. What is the current status of permissive legislation, monetary values, new policies, etc.?

B. What considerations cause companies previously using Commissioners' Reserve Valuation Method reserves to change to the net level premium basis?

C. What possible changes in pattern of cash values are being considered? In view of the effect of the new table on nonforfeiture values, what are the advantages and disadvantages of assuming a lower interest rate in computing such values?

D. Is consideration being given to changes in the mortality basis of substandard premiums as a result of recent experience on such business? In recent years there has been a tendency to issue standard and substandard policies in broader classifications and to extend the substandard classes to higher ratings. How is this trend likely to be affected by the adoption of the 1958 CSO Tables? Is it likely that extended insurance will be issued to higher ratings than heretofore?

MR. ALFRED N. GUERTIN: I would like to report on what is probably one of the finest cooperative enterprises in the field of legislation that we have ever seen in the field of life insurance. When the Insurance Commissioners approved the 1958 CSO Table in 1958, following representations made by the business, it was anticipated that it would probably take up to five years to have such legislation enacted in all the states. I am happy to report that legislation has now progressed to where the new table will be available for use in nearly all jurisdictions very soon, and I will be glad to give the current legislative situation in detail upon request.

At their June 1960 meeting, the Commissioners also approved model legislation setting up new tables for valuing annuities, for disability, and for double indemnity. Certain other technical changes, particularly in connection with the treatment of term insurance riders, were also included. This legislation is also making good progress, and I will be pleased to give details with respect to any jurisdiction to anyone who may be interested.

MR. ANDREW DELANEY: All told there are about 11,500 pages in the 44 separate volumes that comprise the 1958 CSO Monetary Tables. Because of the size of the job the publication of the volumes has taken longer than was originally anticipated, but we have now reached the point where the contents of Volume I in all of its variations are complete. The volumes are being bound, and the printer has stated that shipment of Volume I will start on March 24th. Because of the delay, the Committee thought it advisable to get Volume I into the hands of the companies even though the other volumes are not yet ready for distribution. Volume I contains the basic functions.

No date can be given for the release of Volumes II, III and IV, but the preparation of these volumes is being pushed. About 80% of Volume II and about 55% of Volume III have now been printed through the final stage; the remaining pages are at the final step. Volume IV has lagged a bit, but proofs have now been received on all of the pages and about 40% of the proofs have been OK'd for final printing.

The orders received to date appear to be slightly in excess of the costs incurred and to be incurred in the preparation and distribution of the volumes. Those companies which were prepublication subscribers for an amount in excess of their actual orders will therefore be entitled to a refund. It is expected that a refund will be made at about the time of the distribution of Volume I.

Along with the monetary tables themselves, a specifications booklet is now being printed setting forth the details of the calculation of the monetary values and the formulas which were used for checking in the machine process. Copies of this booklet will be distributed without charge to purchasers of the 1958 CSO Monetary Tables volumes and additional copies will be made available at a price of $2.00 per book.

Disability and Accidental Death Benefit Tables. Under Vice-Chairman Garabedian's leadership, a special subcommittee recruited from outside the ranks of the main committee has been hard at work on the Committee's next project, the compilation of monetary tables for disability and accidental death benefits in combination with the 1958 CSO Table. Members of this subcommittee are Messrs. John Bevan, Manuel Cueto, George Hill, James Morton and William Taylor. These men are largely from the New England area, the thought being to transfer the burden of putting together the disability and accidental death benefit volumes to the companies in that section of the country. The companies in the New York area have performed valiant service in the compilation of the 1958 CSO Monetary Tables and are entitled to relief as regards the next project.

Preliminary agreement has been reached on the contents of these volumes and a notice and questionnaire will shortly be sent to companies which bought the 1958 CSO volumes in order to make known the present plans of the Committee and to solicit information which will assist the Committee in the final determination of the scope and content of the volumes to be published. The present thinking is to confine the additional volumes to $2\frac{1}{2}\%$, 3% and $3\frac{1}{2}\%$ interest rates, and it is hoped that the essential needs of the industry can be met with the publication of perhaps four volumes (three for disability and one for ADB).

MR. DALE R. GUSTAFSON: We intend to prepare basic functions—what is called the "basic values table," commutation functions, single premiums and nonforfeiture functions on the 1958 CSO Mortality Table, age last birthday basis, with provision for immediate payment of claims. We have not quite decided whether we will print it based on $2\frac{1}{2}\%$ and 3% interest but certainly on 3% interest. We will send a copy to anyone who wants one.

MR. ALFRED L. BUCKMAN: On January 1, 1961, the Beneficial Standard Life adopted the 1958 CSO Mortality Table as a reserve basis for all of its life policy forms in those states where legislation permitted the adoption of this table. A new ratebook was prepared, new policy forms were printed and submitted for approval to all of the 44 states in which we are licensed.

In Colorado, where permissive legislation is not yet enacted, it was necessary for the Company to send a model office calculation of reserves based on the 1958 CSO Mortality Table with 3% interest (the basis of our reserves) and to show that such reserves in the aggregate are in excess of the minimum reserves permitted by statute in Colorado. Since the minimum reserves permitted in Colorado are full preliminary term under the American Experience Table of Mortality with $3\frac{1}{2}\%$ interest, it was not difficult to show from our model office calculations that our reserves (partly CRV, partly full net level) in the aggregate will always be in excess of the minimum reserve requirements of Colorado.

In the states where the 1958 CSO Mortality Table has not yet been approved we are continuing to use the old ratebook and policy forms based on the 1941 CSO Mortality Table. This places an added burden on our policy issue department, but we believe that this is only a temporary burden which will be relieved as soon as the remaining states approve the new CSO Mortality Table.

At the time the policy forms were revised our Company adopted a three-year setback in age for female lives. This required the creation of special policy forms on policies on which premiums are paid to a stated age such as Life Paid-up at 65, Endowment at Age 65, Term to Age 65, etc. We now have three types of policy forms: one which may be used for both males and females such as ordinary life, 10, 15, 20 premium life, 10, 15, 20 year endowment, where the three-year setback in age is easily applied; a second set which applies to male lives only such as male life paid-up at 65, male term to age 65, and male endowment at age 65; a third set which applies to female lives only, such as the female life paid-up at 65 and female endowment at age 65.

In the set of policy forms which applies to both males and females, rates and values are the same for males and females ages 0 to 15 at issue. For female ages 16, 17 and 18 at issue, the rates and values are the same as for males age 15 at issue. For female ages at issue 19 and over, rates and values are the same as for males three years younger.

MR. RALPH P. WALKER: In the Wisconsin National, we have completed the switch to the 1958 CSO Mortality Table. We changed in May of 1960 in all the states in which we operate except Michigan and we used the old rates there until July 1960.

We decided to leave the interest rate at $2\frac{1}{2}\%$. The new mortality table has the effect of reducing cash values. When you couple this with an increase in the interest rate, it causes a further reduction in cash values. We felt that this would put us in a noncompetitive position during the period most other companies are on the 1941 CSO Mortality Table. We were using minimum values under the 1941 CSO Mortality Table, and in developing the values under the new table we graded into the net level premium reserves at the end of the twentieth year. As a result, our cash values are not very much different from our previous values except on the limited premium life plans. Because of lower cash values in our limited premium life policies, we could justify lower premiums so that net costs were still competitive.

When we changed, we used net level premium reserves for income tax purposes. In our case, we are paying Phase 2 tax. By going to the net level basis, we are deferring a substantial amount of taxes. The effect of net level premium reserves on new business is to give you a substantial increase in reserves. By exercising an option, you can get the effect of net level premium reserves for tax purposes without actually using them for statement purposes; but we deferred making the election of using the approximate basis because it gives us a greater benefit to use the actual net level premium reserves than to use the approximate. Once you elect the approximate, you have lost all the advantage of getting the increase in reserve from the modified basis to the net level basis. If we had adequate surplus to strengthen on the old business and then elect on the new business, it would be the most beneficial election. However, in our case we thought it might be rather hard to sell to our stockholders and also to the directors. So we elected to take this other basis, which would give us the next best benefit.

MR. ALFRED L. BUCKMAN: The cash values on the 1958 CSO Mortality Table are considerably lower than the cash values on the 1941 CSO

Mortality Table. In addition our reserve and nonforfeiture value interest rate was changed from $2\frac{1}{2}\%$ to 3%. This further decreased the cash values of the policy forms as compared to the cash values of our previous ratebook. The greatest reduction in cash values is found in the limited premium life plans such as the 10, 15 and 20 premium life.

In our previous ratebook we had used minimum nonforfeiture values during the first 19 years, with a step up to Commissioners Reserve Valuation reserves in the 20th year and thereafter on a number of plans with premium payment period of more than 20 years. The minimum cash values on the 1958 CSO 3% Mortality Table were greatly reduced from those of the previous ratebook. Therefore, we decided to use graded cash values, moving gradually from minimum values in the first year to CRV reserves at the end of the 20th year instead of having a big step up at the end of the 20th year. This decision was influenced in large measure because of the availability of the values on this basis by a consulting actuarial service.

The move from $2\frac{1}{2}\%$ interest to 3% interest was made because of the substantial increase in interest earnings on investments during the last decade. This increase, according to our investment department, may be regarded as permanent enough to justify the $\frac{1}{2}\%$ increase even though the Federal Income Tax rate has been increased.

Our premium rates were calculated on the basis of desired profit margins on the method outlined in Harwood Rosser's paper appearing in Volume III, page 187, of the *Transactions*. The new premium rates were calculated to produce profit margins comparable to those on the old premium rates after allowing for changes in the expense factors including allowance for Phase 1 of the income tax. On most forms our premium rates have been substantially reduced. This is particularly true of our limited premium life plans.

MR. WILLIAM S. CONNELL: In recent years a few companies have adopted lower multiple table substandard extra premium rates. Perhaps at this time several others are deferring changes in such rates until they can revise all rates as they adopt the 1958 CSO Mortality Table. Therefore, in North American Reassurance we expect further changes in such rates, but not because of any cause and effect relationship between substandard rates and the new table.

With the usual substandard classes varying 25% of assumed standard mortality at the lower ratings and with as many as a dozen classifications through 500%, the differentials in terms of differences in extra premiums seem unduly small for the lower ages at issue. However, they are fairly substantial for the higher ages, and it is, of course, at these ages that the bulk of substandard insurance is written. Broader classifications at the higher ages create competitive difficulties. Therefore, the maintenance of the narrow classifications seems the lesser of the evils. Perhaps the proper choice of just how narrow is not the same for all companies. Some companies have found a partial solution of the problem of small differences in extras at the lower ages by increasing the upper limit of the standard classification at these ages, with, perhaps, corresponding changes in the first one or two substandard classes.

The principal elements of substandard extra premiums are mortality and expense; interest has little effect. There is considerable additional expense in connection with substandard insurance, with the expense rate tending to increase as the mortality classification increases. One important item of additional expense is in connection with the selection process due to the tendency for the not-taken rate to increase with the mortality classification. In the past, I believe, the direct assessment of this additional expense against the substandard classifications may have been carried out to a greater extent than is the case with companies which have recently adopted new schedules of substandard extra premiums.

Until fairly recently the general upper limit for substandard mortality was 500% of standard. Now we see a decided trend toward offering insurance at higher classifications. For such seriously impaired risks, the mortality we can anticipate, based upon clinical observation and other evidence, is more a function of the impairment itself than of the age of the insured. This has led to the greater use of flat extra premiums. Also, because the present value of the first year premium is so large in relation to all premiums, it seems prudent to consider some modification of first year commissions. The view in our Company is that first year commissions at these very high ratings should be at reduced rates and certainly should not exceed those for the 500% classification. It remains to be seen, however, if companies will be able to maintain such a position.

Consideration also might be given in connection with highly rated cases to the adequacy of fractional premium loadings if coupled with nondeduction of deferred fractional premiums, with a similar problem arising with unearned premium refunds.

MR. ROBERT B. GOODE: The first part of the question is a difficult one for me to answer because it asks if we have changed the mortality basis in our substandard premiums because of recent experience on such business. Early in 1961 we introduced new, lower substandard extra premiums replacing the scale which had been in effect since 1948. I don't know whether I can say it is recent experience or not, but our experience has been satisfactory on the substandard classifications.

We base our substandard extra premiums on our own mortality table which, of course, is based on the Connecticut General's experience. What we did in connection with this change was to change from our older to our more up-to-date experience table. The new extra premiums are ten to twenty percent lower than our old substandard extra premiums and, as you might expect, the greatest reductions are at the older ages. The substandard extras are based on percentage multiples of our experience mortality table. We load for expenses and use a sliding contingency margin. This margin varies both by age and by extent of the substandard rating.

In regard to the tendency to have broader standard and substandard classifications, the lesser of the two evils is to continue to have a great number of relatively small substandard classes. Connecticut General elected to do so for their direct business. We feel it is somewhat easier for our underwriting people to have a number of classifications, even though it may not make much theoretical sense at the younger ages where the number of deaths is relatively small.

The next part of the question is with regard to the 1958 CSO Mortality Table. This has no effect for a company such as Connecticut General, because substandard premiums are based on our own mortality experience.

Connecticut General has a practice wherein extended term insurance is not offered on substandard policies except those that have a flat extra premium of $2.50 or less. We are at the present time seriously considering the 1958 CET Table for our extended term values when we go over to the new table and do not anticipate changing our practice in regard to the availability of extended term insurance on substandard contracts.[1]

[1] On a show of hands requested by the chairman of the meeting, about 20% of the companies which have done extensive planning in connection with 1958 CSO policies expect to use the 1958 CET Table for extended insurance and 6% do not plan to use it.