**TRANSACTIONS OF SOCIETY OF ACTUARIES**
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# DIGEST OF DISCUSSION OF SUBJECTS OF SPECIAL INTEREST

## ORDINARY INSURANCE AND ANNUITIES

*Guaranteed Insurability Riders*

A. What are the important considerations in the development of benefit structures, premium levels and underwriting rules?
B. What are the problems in connection with reserves?
C. What procedures have been developed to notify policyholders of their rights at the option dates?

*New York Regional Meeting*

MR. HAROLD G. ALLEN expressed the view that it is important for the guaranteed insurability benefit to have a small premium which is reasonable in relation to the cost of immediate protection. These considerations led the Bankers Life to restrict the option period to ages below 40 and to introduce persistency as an alternative to nonforfeiture benefits. Some control of antiselection is gained by restricting election to purchase a new policy to specific dates at three year intervals from ages 25 to 40. A maximum of $10,000 may be purchased at each option date without evidence of insurability.

In determining premiums for the rider, single premium costs at the various option dates were discounted at assumed rates of mortality, interest, persistency, and rate of option election. The single premium costs themselves were determined by discounting the extra mortality expected, taking persistency into account.

The Bankers reserve calculation for the rider involves an accumulation of the net option premiums on the assumptions made in calculating those premiums, the accumulation being charged with the cost of the option on each option date. The small variation by age at issue permitted the economy of plan and issue age valuation groupings. The single premium cost of the extra mortality expected on policies purchased under the option is established as a reserve on the option date of purchase and amortized over the following 15 year period, without regard to lapses or deaths.

To complete the second part of the Gain and Loss Exhibit of the Annual Statement, the reserves at the beginning and end of the year are determined by the methods indicated, tabular interest is calculated directly, and the difference is forced into "reserves released by other terminations."

The Bankers plan to notify the insured and the appropriate agency office shortly before each option date and to pay regular commissions on policies purchased under the option. One state requires such notification as a condition of approval of the policy form. The Bankers experience for the first year has shown an election rate of slightly more than 10%.

MR. HARRY WALKER stated that the Equitable calculated experience premiums that would be sufficient to provide the cost of extra mortality on policies purchased under the option. These experience premiums, which served as a maximum guide to the level of gross premiums, assumed that the extra mortality was measured by the difference between select and ultimate mortality, assuming a 100% election rate and that death was the only decrement. He stated that the resulting premiums were considered to be conservative in that they took no account of expense savings on new policies not requiring underwriting, of nonelection by impaired lives, or of funds released on terminations prior to the option date.

The Equitable allows purchase at standard rates between option dates, provided the insured is not so substandard as to require a premium for the Ordinary Life plan greater than 150% of standard (over 300% mortality). This alternative option is granted at no extra premium, in lieu of election on the next option date.

Mr. Walker stated that, consistent with the premium calculation, the rider should have no cash values. Allowing such values would, to a substantial degree, mean reliance only on premiums paid by those electing the option with the result that premiums would become prohibitive.

The Equitable hopes to use a form to notify the insured before each option date that would also serve as an application for the new policy. Mr. Walker pointed out that such a form should probably refer to the original application so that the company could include the original application in a new policy issued within the contestible period of the original policy.

MR. F. RUSSELL SCHNEIDER stated that the benefit offered by the Connecticut General differs from the general pattern in that option dates occur quinquennially from ages 25 through 40, and the maximum amount of any new policy is $25,000.

Premiums for the benefit, he stated, must allow for the extent to which initial selection has worn off and also for antiselection. In determining the cost of selection having worn off, it is unnecessary to take into account the percentage electing the option since it may be assumed that those not electing are select lives whose election would not increase the total

cost of the option. It was felt that some safety margin should be included in the premiums to take account of such uncertain factors as the probable poorer persistency among better risks. Mr. Schneider pointed out that the experience of term conversions would be used as a guide.

The underwriting of the rider on medically examined business, he stated, presented no particular problems except that some additional care must be exercised because of the ultimate amounts involved. On nonmedical business, he felt that the amounts available should be quite modest.

In mentioning that the rider is generally available only to standard lives, Mr. Schneider pointed out that for many impairments the extra mortality increases with duration and is difficult to measure. There is, he asserted, no reason the benefit cannot be made available on policies with flat extra premiums, provided the rider allows the extra to be added to any policies purchased under it. Only a minimum of underwriting would be necessary for including waiver of premium and accidental death benefits in any new policy issued under the option.

Mr. Schneider referred to the New Jersey Insurance Department's interpretation of the Standard Nonforfeiture Law, which has the effect of limiting his Company's issuance of the rider in New Jersey to participating plans only.

He stated that the guaranteed insurability rider seemed clearly to be a benefit "additional to life insurance," and therefore specifically excluded from the provisions of the Standard Nonforfeiture Law. This view, however, has not been accepted by the New Jersey Department.

MR. JOHN M. BOERMEESTER agreed with Mr. Schneider to the extent that he believed that the position of the New Jersey Department appeared strained. He stated further, however, that this had not caused a problem for the John Hancock since their values were sufficient even under the interpretation placed on the Standard Nonforfeiture Law by New Jersey.

MR. ELMER R. BENEDICT stated that the objectives of the guaranteed insurability rider seemed to be met by the pattern most prevalent in the industry. His company had, therefore, adopted the general pattern, except that for issue ages 38–40 the option date occurs three years after issue instead of at age 40. He listed as factors affecting the premiums: with regard to the rider, the lapse rate, the election rate, the commission rate, the extra underwriting expense; and with regard to policies issued under the rider, the savings in selection costs and the lapse rates. In determining premium rates, the John Hancock assumed maximum utilization of the option. A separate and similar study justified issuing preferred

underwriting policies pursuant to a guaranteed insurability rider attached to such a policy at the same level of premium rates for the rider.

In determining the extra underwriting expense and nonmedical underwriting rules, the option was considered to be equivalent to an additional amount of insurance of twice the option amount, except when issued with only one option when it was considered to be equivalent to the option amount. As a result, only policies of $5,000 issued at ages not exceeding 35 will be considered nonmedically. In addition, the financial prospects of the insured must warrant a reasonable amount of the additional insurance to which he will be entitled under the option. The John Hancock adds the rider only at issue to standard policies. It is not allowed on policies with aviation exclusion clauses, nor is it sold to servicemen who are not commissioned officers.

Mr. Benedict mentioned the analogy with the conversion privilege in term policies. While his company does not carry special reserves for the term conversion privilege, it does plan to carry reserves for the guaranteed insurability rider. Under their system, an amount of pure endowment will be released on each option date and credited to an excess mortality reserve for policies written under the option, this reserve to be written down by policy duration.

MR. IRWIN T. VANDERHOOF pointed out that the premium calculation for the guaranteed insurability rider was not dissimilar from that employed to calculate the cost of allowing conversion of term insurance.

He pointed out that most companies do not set up a special reserve for the cost of term conversions but allow the charge for this privilege to find its way into the company's surplus. He stated that under the proposed federal income tax law, continuing such a practice would be tantamount to a company's receiving only three quarters of the term conversion charge since additions to surplus would be taxed at the corporate rate. He suggested that companies consider a special reserve item for the cost of converting term insurance.

MR. W. HAROLD BITTEL noted that two of the speakers had referred to difficulties in obtaining authorization to issue guaranteed insurability riders for delivery in New Jersey and had implied that the New Jersey Department is using a technical interpretation of the Standard Nonforfeiture Law in this connection; they had contended that these benefits should be ignored in the calculation of minimum values under this law because they are "benefits payable as other policy benefits additional to life insurance and endowment benefits" which, together with the premiums therefor, are to be excluded from such calculations.

Mr. Bittel countered that this type of benefit obviously was not con-

templated at the time this law was drafted and it could therefore be argued that the word "payable" should not be strictly construed in considering such riders. However, the exclusion in question could not be considered to be applicable to these benefits because they *do* relate to life insurance and are *not* benefits additional to life insurance. A change in this law is therefore needed if these benefits and their premiums are to be disregarded in the calculation of minimum nonforfeiture values.

The difficulty from a supervisory standpoint in permitting broad exemptions of this kind, either by interpretation or by amendment of the statute, is that once the exemption is recognized there would be no authority under the statute to regulate the practices followed by companies in making this benefit available, either from the standpoint of the premium charged or in the matter of the extent of the benefits offered. It is not sufficient, in the opinion of the New Jersey Department, to rely on competition to keep such practices under control, because of the great variety of policy forms currently available, many of which already have built-in supplementary benefits that make comparisons with other policies extremely difficult; there is need in an exemption of this kind for a provision giving the Commissioner the right to disapprove the exclusion of any rider if, in his opinion, such exclusion would be inequitable.

Mr. Bittel expressed the belief of the Department that the present New Jersey requirement that the premium for the guaranteed insurability rider must be taken into account in the calculation of minimum nonforfeiture values for the policy to which the rider is attached is proper and necessary under the present statute regardless of what other states may permit under similar laws. While the inclusion of the benefits under the rider in this calculation probably would produce even higher minimum values if the deferred nature of these benefits is properly taken into account, they do not feel this is essential under the statute for a number of reasons. The only companies which have had problems in this connection are those which use in their policies minimum nonforfeiture values or values which are only slightly higher than the minimum.

*Omaha Regional Meeting*

MR. CHARLES D. SILLETTO outlined a method of calculating rider premiums which is based on the theory of select and ultimate mortality tables and can be used in lieu of actual experience on which to base the premiums. Basically, the method assumes that each issue age—duration group as it reaches an option date is experiencing combined mortality at the rate shown in the select and ultimate table. The method further assumes that in each such group some lives on the option date

would be subject to the mortality rate for newly selected lives and that any excess of the combined mortality rate over this first-year select rate is contributed entirely by impaired lives in the group. Accumulated option premiums must provide for the cost of this excess mortality assuming all of the impaired lives will exercise the option. It then becomes immaterial how many select lives exercise the option since these lives do not contribute to the total excess mortality cost of the group.

Under this method an expression is needed such that, when it is multiplied by the number of units of insurance eligible for purchase on an option date, it will be adequate to cover the extra mortality for the resulting group of new issues on that option date, assuming all impaired lives purchase the insurance. One such expression for an option date $t$ years after an original issue age $x$ is as follows:

$$\frac{1{,}000}{l'_{[x+t]}} \sum_{r=0}^{14} v^{r+1} l'_{[x+t]+r} \left(q_{[x]+t+r} - q_{[x+t]+r}\right) \left(1 + \frac{i}{2} - {}_{r+1}CV_{x+t}\right) .$$

Mr. Silletto reported that this approach was used by the Lincoln National with the mortality rates taken from the 1946–49 Basic Tables (*TSA* II). Values of $l'_{[x+t]+r}$ were determined for each option age $[x+t]$ by using $l'_{[x+t]}$ as a radix and applying low lapse rates and select mortality rates. An interest rate of $3\frac{1}{2}\%$ was used and cash values were assumed to be those on the Ordinary Life plan. The net single premium option date costs were easily converted to gross annual premiums by the usual Jenkins-type formula.

Two possible approaches were described by Mr. Silletto for handling reinsurance on policies issued as a result of option elections. One approach is for the issuing company to pay the reinsurer an additional single premium at the time the elected option policy is issued and reinsured. This approach has the advantage that reinsurance is acquired only when the elected option policy together with other insurance already in force actually exceeds the issuing company's retention limit. A disadvantage of this approach is that reinsurance costs may exceed the issuing company's fund of accumulated option premiums if reinsurance is frequently required and the actual rate of option election exceeds the assumed rate.

A second approach is that of coinsuring the original option rider at the time it is issued. The issuing company decides what portion of the rider is to be coinsured and remits that portion of its rider premium, net after commissions, to the reinsurance company. When options are exercised, the same proportion of each option issue is automatically reinsured at standard rates. This approach has the advantage of guaranteeing that reinsurance costs cannot jeopardize the adequacy of the option

premium. It has the disadvantage of possibly putting the issuing company in the position either of obtaining reinsurance it does not need or of having issues in excess of its retention which it cannot reinsure because it has no evidence of insurability.

There are numerous variations and combinations of these two approaches. One variation of the single premium approach is for the issuing company to pay the reinsurer annual premiums rather than a single premium, the annual premium usually being payable for a temporary period such as five years. Companies with large retention limits may well decide to ignore reinsurance of the benefit, while companies with relatively small retention limits will probably consider the rider coinsurance approach. Between these two extremes the single premium type of approach may present the most desirable solution.

MR. ROBERT N. HOUSER described the factors considered by the Bankers Life Company in designing a benefit of this type, as outlined by Mr. Harold G. Allen at the New York regional meeting.

Mr. Houser indicated that expense considerations were important in determining the method of computing reserves. The small sums involved justify use of reasonable approximations. Reserve factors for the rider itself are simply the accumulation of net annual rider premiums on the same assumptions used in the premium calculations. To obtain annual statement reserves these factors are applied in the usual way to a tabulation of option riders by amount, plan, age at issue, and duration. This calculation is simplified by the fact that most plans of insurance have the same reserve factors. A grouping by age at issue can also be justified in the reserve calculations. The additional reserve for extra mortality on insurance resulting from an option election is based on the option age and is the same net single premium cost used in the premium calculations. As a practical device, once this reserve has been set up for all option elections in a particular calendar year, it is then carried in a memorandum account and written off over a period of 15 years without regard to actual persistency of the business.

Mr. Houser reported that the Bankers Life Company notifies each policyholder of his option rights before each option date. The agency office is also notified and regular commissions are paid on any business resulting from exercise of the option. For those relatively few policies which have already reached an option date only one year after issue the experience to date has been that slightly more than 10% have exercised the right to purchase additional insurance. This percentage does not include business resulting from an option election but on which some evidence of insurability was obtained either because of an increase in the amount of insurance or because of the addition of supplemental benefits.