

Expense

- A. For some time expenses in general have tended to increase, being somewhat offset by increase in amounts of insurance, simplified procedures, greater mechanization, etc. What is the outlook for the future?
- B. When developing a premium structure graded by policy size, what methods are used to allocate agency expenses (including remuneration of managers or general agents)? What considerations are taken into account when selecting a level per policy expense? In that connection, of what significance are the following:
- (i) Recent extensions of nonmedical limits and underwriting practices,
 - (ii) Wider use of "guaranteed issue" underwriting, especially on pension and profit-sharing trust business,
 - (iii) Insurance to be issued under the terms of insurability agreements,
 - (iv) Application of electronic data processing methods to company procedures.
- C. When determining upon a level of gross premiums, what are the important considerations in relation to:
- (i) Agents' income,
 - (ii) Relations with the insuring public,
 - (iii) Dividends and dividend options (including the so-called fifth dividend option)?

MR. NORMAN BRODIE: If such factors as increases in amounts of insurance, simplified procedures, and greater mechanization have not been sufficient to offset the effect of increasing expenses on unit expense rates in the past, as implied by the question, is it not logical and reasonable to expect higher expense rates in the future? Are there any factors pending which will have a more powerful effect in the future?

The significance on future renewal expense rates of continued upgrading in the size of policies being written will vary from company to company, depending on the extent to which newer issues are merged with the outstanding issues for expense rate purposes. Even if the company develops for premium and dividend purposes one set of renewal expense rates for all outstanding renewal business, we know that the beneficial effect on such rates of an increase in the average size new issue can, at best, emerge only gradually because of the heavy weight of the outstanding business.

Companies that have stratified their business in bands according to policy size are faced with the fact that the average size policy within each band will tend to remain relatively stable, regardless of the changes in the distribution of new issues among the several size bands. If the unit expense rate of each band is recognized in establishing the premiums and dividends for the band, then an increase in expenses of the per policy

type will mean an increase in expense rates per \$1,000 of insurance for each band.

Also, the increase in the unit expense rates for smaller policies will be significantly larger than the increase for the larger policies. This should be recognized in considering the margins to be provided for in a new premium scale for a band premium system. Where a policy fee system is used, or a graded premium system which does not contemplate dividends varying by band, the fact that unit expense rates will tend to increase at a rate varying inversely with the size of policy might be taken into account in establishing the fixed differentials between the cost for policies of different sizes.

As for simplified procedures, such as higher nonmedical limits, one should recognize that while they sometimes result in reduced expense rates there is often an associated increase in insurance costs in some other area.

As for mechanization, the Equitable is one company that is already realizing substantial savings because of electronic data processing and we expect further significant savings in the future. At prior meetings of the Society, several representatives of other companies seemed to indicate that their companies had not as yet realized significant savings associated with mechanization, but they generally agreed that such savings would emerge. Since the magnitude of these future savings cannot be pinned down and since there is a large area of expense not amenable to mechanization but subject to all of the influences of increasing salary and price levels, it might be best not to attempt to allow for these uncertain savings in current premium and dividend tests. Further, we must recognize that the existence of electronic data processing machines has the effect of creating new jobs as well as simplifying old jobs. For example, the Equitable is planning to furnish the agency officers with much more detailed and frequent reports on the characteristics of the business being issued, returned not-taken, and lapsed. The additional expense is of a marginal nature generally, but not always.

MR. J. STANLEY HILL: Although the concept of a policy fee is relatively simple, its ramifications can be perplexing. This is particularly true when we consider the interplay of certain current trends. One of these is the trend toward higher unit expenses in areas usually considered to be covered by the policy fee. Another is the decline in the number of new ordinary policies written. A corollary trend is the decline in the rate of growth of the number of ordinary policies in force.

Let us consider, for example, the effect of these trends on the unit expense of underwriting and issue. When the head of the underwriting

department first observes a decline in the number of issues it is natural for him to assume that it is temporary. After this "temporary" phenomenon has continued for six or seven years, the alternatives become rather harsh: either the underwriting and policy issue staff must be reduced or the company must countenance an increase in underwriting and issue costs of startling magnitude, entirely disproportionate to the relatively modest increase in living costs or the change in salary levels. Meanwhile the staff has become accustomed to issuing fewer policies and the general output level has declined. During the same period a gratifying increase in average policy amount has taken place; but this is little comfort under the policy fee plan, since virtually all savings from this source have been immediately credited to the policyholder in the form of lower premiums per thousand of insurance.

Although the problem is not so severe in administrative and renewal areas, it is still there. The percentage increase in number of policies in force has in recent years been much lower in most companies than the percentage increase in salary levels. In most of these companies the policy fee was justified by the assumption that the major portion of home office salaries would vary in proportion to the number of policies in force. Again the same harsh choice is faced: smaller staffs or higher unit costs.

Mechanization and simplification furnish welcome offsets in the areas to which they can be applied. Their effect is apt to be limited, however, to a net saving in the range of 5% to 10% of total home office payroll.

Unless the trends originally described are soon reversed, there is strong likelihood that unit expenses will continue to increase.

MR. WILLIAM K. KRISHER: My discussion of section B is from the point of view of a company on the general agency system. Although the Connecticut Mutual has a formula for determining expense allowances for each agency, it does not cover all agency expenses and does not directly yield unit expense factors useful in premium and dividend work. Since the agency expense allowance item represents about 25% of our Exhibit 5 general expenses paid, proper translation to unit expense factors is important. The general approach used is to assign such expenses to the usual categories of rent, salaries, postage, etc., by utilizing the judgment of the agency comptroller's staff.

Grading of premiums by policy size will probably lead to greater refinements in expense allocation with more emphasis on the per policy element, especially among companies whose premium rates now recognize only a moderate policy charge. It does not seem advisable, however, to incorporate an extremely high policy charge in the premiums since, to the extent that a portion of per policy expense is shifted to the base

rate per thousand, there is a hedge against rising expenses if the average size policy increases concurrently.

In setting the proper degree of gradation by size, weight should be given to other factors such as the company's competitive position in its chosen market, producing an acceptable change in average premium per thousand and yielding a satisfactory rate for small policies.

As to the practices of nonmedical and guaranteed issue underwriting and the guaranteed insurability option, each results in a shift of costs from expense to mortality. Other factors being constant, the extension of these practices will result in a trend toward a lower per policy unit expense if these policies are left in the base over which all expenses are spread. Since this could destroy the balance between assumed expense saving and extra mortality cost, it seems preferable to determine unit expenses as if these policies were actually processed as regular medical issues. If this is done, no specific recognition of these practices seems necessary in determining a company's general gross premium structure.

The application of electronic data processing differs, since expense savings are not offset by extra mortality costs. Since Connecticut Mutual is not yet operating a large computer system and since anticipated savings may well be offset by continued inflation, no specific recognition of any hoped-for savings in this area will be made in setting premium rates in the near future.

MR. HARRY D. GARBER: I intend to describe the methods which we use in developing expense rates for our asset share tests of the premiums, dividends and nonforfeiture values of the Equitable's graded premium issues.

The Equitable's graded premium system is based on the premise that the costs for each size band will, to the extent feasible, reflect the experience of the policies in that band. Consistent with this approach, our expense allocation methods have been designed to subdivide our aggregate expenses among our bands. Under this approach, the resulting unit expense rates represent the *average* cost for the policies included in the band.

The expense allocation procedures described are applied to all of our expenses other than soliciting agents' commissions and welfare benefits, premium taxes and the federal income tax. In computing the percentage of premium rates used in our asset share test for a particular plan of insurance, we take into account directly the soliciting agents' commission rate applicable, along with the probability that the commission will be paid. The cost for agents' welfare benefits (group insurance and retirement plan) are assessed as a percentage of the charge for soliciting agents'

commissions. The federal income tax is, for the most part, treated as a deduction in determining the interest rate to be used.

In setting up expense allocation procedures we found it convenient to subdivide our expenses, other than those referred to above, into three broad groupings. These were:

1. Home Office and field expenses which are attributable, directly or indirectly, to the underwriting, issue and administration of insurance policies. (In 1960 these expenses accounted for approximately 50% of the expenses to be allocated.)
2. Agency expenses. This category consists of the costs of our agency managers' offices, including managers' salaries, the cost of our agency department, the costs of financing new agents, etc. (In 1960 this group of expenses accounted for about 40% of the total expenses to be allocated.)
3. Advertising and other general institutional expenses such as contributions, executive salaries, etc. (In 1960 these expenses accounted for about 10% of the total.)

The expenses included in the first grouping can be associated, at least theoretically, with work done on particular policies or on groups of policies. Because of this, more refined allocation techniques are possible in this area than in the other two and we have concentrated our efforts here.

We allocate the expenses included in the first group among our size bands on the basis of ratios developed by combining (a) the distribution of new issues or policies in force by size and (b) weights reflecting the relative levels of expense for policies in the several size bands. Distinct sets of ratios are developed for each major area of expense and within each of these major areas separate sets of ratios are developed for first year expenses and for renewal expenses. (I might mention that a major area of expense could involve the salary and related expenses of a home office department, or a portion thereof, or a major item of expense such as printing and stationery.) In the case of the first policy year, expenses are subdivided among (i) policies for less than \$5,000, (ii) policies for \$5,000 to \$9,999 and (iii) policies for \$10,000 and over. Renewal expenses were subdivided among the following groupings: (i) premium paying policies for less than \$5,000, (ii) premium paying policies for \$5,000 to \$9,999, (iii) premium paying policies for \$10,000 and over, (iv) paid-up participating policies and (v) paid-up nonparticipating policies.

Let us take an example to see how this technique works out in practice. Currently we assume that the relative first year costs per *paid* policy for the salary and related expenses of our underwriting department are

$4\frac{1}{2}$ for policies of \$10,000 or more, $1\frac{1}{2}$ for policies of \$5,000 to \$9,999 and 1 for policies of less than \$5,000. Let us assume further that during the year 20,000 policies were paid for in each of the two larger size bands and 30,000 policies were paid for in the smallest size band. Combining the relative weights with the distribution of paid policies, we would allocate 60% of the expense to policies for \$10,000 or more and 20% to policies in each of the two smaller bands.

The relative weights used in arriving at these allocation ratios are based on detailed analysis carried out at the time we developed our graded premium system. The weights for any area reflect (i) the variation by policy size in the average number of times that a policy will be handled in the area during a year and (ii) the variation by policy size in the average cost of each such handling. The latter differences may result from higher paid personnel working on larger policies or from the longer time required on the average to process transactions on larger policies. The relative weights are reviewed at periodic intervals.

As for agency expenses, the allocation methods which we use rest, to a large extent, on judgment. Specifically, we charge as a percentage of first year commissions the expense of sales promotion activities and the first year portion of those elements of our agency and unit managers' compensation which are a function of soliciting agents' commissions; the renewal portion of these elements of our managers' compensation is assessed as a percentage of renewal premiums. In the case of each of the other major areas of agency expense, however, a specific portion of the expense involved is assessed on a constant per policy basis.

The third general grouping of expenses included advertising and other general institutional expenses. The first year portion of our advertising expense is charged as a percentage of our first year commissions, the renewal portion as a percentage of weighted premiums. The other general institutional expense is considered as per premium expenses in both the first and renewal policy years.

The use of the weighted contract approach, which I have described in allocating the per policy expenses among our various size bands, has proved quite successful. It is flexible to handle and it permits us to compute expense rates based on a year's activities shortly after the close of the year.

The approach can be adjusted readily to handle the types of problems described in the latter part of the question, *i.e.*, changes in nonmedical limits, the effect of the application of electronic data processing methods, etc. For instance, our relative weights for medical field expenses take

into account the probability that a policy in a particular size band was issued on a nonmedical basis.

In the case of functions being shifted to data processing equipment, there will be a decrease in salary expense in the area involved, possibly accompanied by some increase in machine costs. In cases where the change does not affect the relative weights used, this type of change will be automatically adjusted for under our expense allocation approach, since a separate set of weights is used for machine costs.

MR. PETER W. PLUMLEY: The Travelers gross premium structure uses the policy fee method, with a policy fee charge on annual premium policies of \$7.50 subject to certain adjustments.

In developing this charge we encountered several problems. In the first place a large part of the per policy expense is incurred at issue. However, the policy fee is an annual charge and thus if it is set at a level which is adequate for an ordinary life policy it will be inadequate for policies with limited premium payment periods. At The Travelers we allow for this by including the per policy expenses in our asset share calculations. The premium before addition of the policy fee then is calculated by subtracting from the gross premium developed by the asset share calculation an amount equal to the policy fee divided by the assumed average size. The result is that the Company receives sufficient premium income in total, but of course there is some unavoidable inequity between large and small policyholders.

Very small size policies create another problem because of the extremely high premium per \$1,000 which would result if the policy fee method were applied without modification. Our solution to this problem is to make a charge of \$3.00 per \$1,000 for policies under \$2,500 in place of the policy fee of \$7.50.

Another refinement which we have found desirable to make is to vary our policy fee by mode of premium payment in order to reflect differences in billing expenses.

A development which may tend to reduce the importance of the policy fee method is the trend towards issuing policies with limited or no individual underwriting. Examples of this are the increase in non-medical business, guaranteed issue business, and issues arising from guaranteed insurability business. In all three cases the effect is twofold. First, underwriting expenses are reduced or eliminated. Second, there is less variation of amounts of insurance. The first of these factors tends to reduce the amount of the policy fee which should be charged, while the second tends to reduce the need for the policy fee method. I think the increasing importance of limited underwriting may tend to force

more and more companies into establishing a policy fee method which differentiates between medically issued policies and those issued with limited or no individual underwriting.

MR. HARRY W. JONES: When the Mutual Benefit adopted pricing by size, it followed generally the approach that had been laid out so well by Mr. Elgin G. Fassel in his paper on the subject.

Thus far we have made no adjustments that would give special recognition to nonmedical business, but we recognize the possibility that a new scale of premiums might logically reflect these practices in the lower amount brackets. Neither have we made any special adjustment with respect to reduced underwriting costs on guaranteed issue business. These cost savings were actually offset in our minds against the higher mortality that might be involved on such business, and any further mortality adjustment that was necessary was made through the medium of the dividend scale.

Over the three years since we have had pricing by size, the per policy costs have increased slightly, but there is the possibility which we must contemplate that electronic data processing may so influence the level of total per policy costs that the present spreads between premiums for the different size groups may actually be reduced.

MR. DARREL J. CROOT: I am going to limit my discussion to the effects of EDP on recurring administrative expenses incurred in the routine handling of policies such as premium billing, premium collection, valuation, etc.

I feel that EDP can produce significant savings in money and time in the daily processing of policies. However, data processing is not a panacea. There are several pitfalls that I believe can lead to an ultimately higher level of expenses through the use of such equipment. Because much more information is readily available with data processing equipment, there is a tendency to obtain interesting but nonessential information. While the cost of obtaining any small bit of information may be relatively small, unless stringent methods are used to control such requests the sum total of these expenses in the course of a year could be significant.

A second factor which can lead to increased expenses because of EDP is a recent tendency to write plans with unusual benefits or premiums. While it is true that a data processing system can handle almost any conceivable type of benefit, it can be rather expensive. A significant part of the cost of any EDP system is the programming and conversion for the system. Programming these "odd-ball" policies can be a real nightmare.

Correspondingly, they use up an inordinate amount of available memory which might be used otherwise to design a more efficient system. The programming time and memory requirements for simple ordinary life policies which might constitute close to 50 percent of the business of a company may be much smaller than these "gimmick" policies or riders which represent only a very small percentage of the business. Therefore, before issuing such policies, we should carefully consider whether our expense assumptions are adequate to cover the higher costs in handling these policies. If we do not properly price these policies, then the standard policies must bear the additional cost of these others.

An additional advantage to EDP is the ability to isolate various types of expenses. With the volume of data available, we can quickly isolate expenses on a more accurate basis than before. Of course, we have to be careful not to fall into the first pitfall of spending so much money analysing expenses that the savings resulting from such an analysis are nowhere near as great as the cost of it.

MR. E. J. MOORHEAD: The New England Life has acquired some experience on the question in section C (i) as a result of adoption of grading-by-size in November 1957. We retained our existing scale of gross premiums and graded the dividends, the primary purpose being not so much to protect agents' earnings as to retain a flexibility of subsequent action, which we have already availed ourselves of once and may again.

However, the effect of this method was to keep our gross premiums at a higher level than if we had graded them by either a band method or a policy fee method. Since that time we have repeatedly received field requests to lower gross premium levels for competitive reasons. In three instances we have done so, namely by decreasing premiums on term insurance, on one permanent plan used mainly for pension trust business, and on policies issued to women.

All of this suggests that maintenance of a level of gross premiums in the upper rather than the lower part of the permissible range may not in the long run prove to be a decision for which your field organization will unanimously be grateful.

MR. GEORGE H. DAVIS: There is one point I would like to make on relations with the insuring public in connection with the introduction of new Ordinary premium rates. This is that the public should not be led to believe that any reduction in cost of insurance which results is due to change to the 1958 CSO Table as a basis for reserves and nonforfeiture values. We all know that the reserve basis (except for the difficulty involved in the problem of deficiency reserves) has virtually no effect upon the cost of life insurance. The premiums charged, or the premiums

less dividends in the case of participating insurance, depend upon the actual mortality, interest and expenses expected to be experienced or upon actual experience. It is important that the public understand this. If it is led to believe that the mortality rates of the reserve basis determine the actual mortality cost of life insurance, it is going to be deceived as to how life insurance actually operates. One result of this will be increased difficulty in getting sensible and uniform statutory regulation of reserves and nonforfeiture values in the different states.

MR. CARROLL H. BROWN: Usually when a new level of participating gross premiums is being set, a change in the dividend scale is made at the same time. When a final scale of premiums is chosen, one of the reasons for its choice is that it is a scale which, upon application of the final dividend formula, results in a satisfactory dividend scale.

Some of the factors concerning dividends and dividend options which should be taken into consideration in setting the level of gross premiums if the resultant dividend scale is to be satisfactory are as follows:

1. Dividends represent the margins of safety in the premiums. The lower the dividend level provided for by the premium, the smaller the margin of safety in the premium.
2. The higher the level of dividends, the poorer the net payment picture may look, since, in order to provide an additional dollar of dividend, more than a dollar of premium is required, because of percentage-of-premium expenses.
3. A company with a relatively high dividend accumulation interest rate, or a company for which the dividend accumulation option has proven to be the most popular dividend option, may prefer a high level of dividends because of the more favorable results which can be shown over the longer durations.
4. If the paid-up additions option has been a popular option, higher dividends may be desirable, since they will have the advantage of providing larger amounts of additional insurance protection at net rates. Actually, if increased dividends are provided by means of increased premiums, there may be some question as to how truly "net" the rates are.
5. If a company offers the so-called fifth dividend option, with the cost of one-year term insurance for the amount of the policy cash value being taken out of a dividend accumulation account, the higher the level of dividends, the longer the dividend accumulation account will be sufficient to provide term insurance in the amount of the full cash value.

According to the experience of the Massachusetts Mutual the fifth dividend option should not be an important consideration in determining a level of gross premiums, since in 1960 it was elected on less than 10% of our new issues. Also, about 70% of all policies with the option are not leaving any balance of dividend to accumulate, and thus a higher dividend

level would have no effect for them in increasing the dividend accumulation balance.

MR. HENRY S. HUNTINGTON: Several years ago my company reduced premiums and dividends by comparable amounts. In fact, for some important offerings the two reductions were almost identical. Since we pay no first year dividend, this move cut our net costs by roughly the amount of the reduction in the first year premium. Some of our agents were quick to point out that half of our net cost reduction was coming out of their pockets.

While agents' morale may be adversely affected under such conditions, we can, of course, point out the competitive advantages of lower rates and stress selling on the basis of the amount of premium rather than the face amount.

Looking to the ultimate impact of premium rate levels on agents' income, we may anticipate some such picture as this:

Let us assume rate levels tend to be strongly influenced by competition, and then consider the question whether purchases and total coverage tend to be related to face amounts or to premiums. If face amounts tend to control it is clear that agents' income will tend to be directly related to premium rate levels. On the other hand, if amounts of premium tend to control, agents' income will tend to be independent of rate levels.

My own guess is that both premium amounts and face amounts influence purchases and total coverage, so that agents' income may be moderately affected by premium rate levels (although in the very long run it seems likely that competition with other industries for salesmen will tend to compensate for the shorter-term effects of premium rate levels on agents' income).

In general it seems obvious that the higher the levels of premiums and dividends the more room there is for the ingenuity of the actuary and agent in working out ways to use those high dividends.

Finally, it is only when we come to the insuring public that I find a real stake in lower premium levels.