

**FINANCIAL PLANNING AND CONTROL  
FOR GROUP INSURANCE**

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I. GENERAL

**W**HILE operating gain is often used for judging an insurance company's financial performance, it is basically a short-term measure. Over the long run, the financial soundness of a company is measured by its ability to withstand fluctuations in its surplus caused by changing values of assets or liabilities. In view of the importance of a company's financial soundness, it is clear that some measuring rods are needed to judge whether the surplus is adequate. Such judgment can be made only when surplus is compared with some measures of risk, that is, to the things that are likely to cause adversity.<sup>1</sup> Attaining and maintaining a particular ratio of surplus to some benchmark should be an integral part of the planning process. While it is true that the total company surplus stands behind all the company's obligations, different lines of business present different types of potential risks, and fund accounting techniques generally in use show how much of a company's surplus is attributable to each of its lines of business. Therefore, in developing a surplus-ratio objective for the company, it is appropriate to consider each line of business separately. In this way, a planning tool appropriate to the needs of each line can be developed.

The group insurance lines, like other lines of business in an insurance company, need a specific measuring rod to judge their financial soundness. Actuarial literature deals in terms of ratios of surplus to liabilities for the individual lines and at least the general account part of the group pension line. These are reasonable indicators for those lines of business with their long-term guarantees and their significant reserves, where surplus is subject to dramatic shifts caused by fluctuations in asset values. However, because of their yearly renewable term nature, the more serious risks for the group insurance lines are short-term fluctuations in claim or expense levels. For this purpose, in-force premium of some type is a reasonable measure of risk. One crude indicator of financial soundness, then, is the simple ratio of surplus to net premiums

<sup>1</sup> A thorough discussion of surplus needs and purposes is found in Charles L. Trowbridge, "Theory of Surplus in a Mutual Insurance Organization," *TSA*, XIX, 216, and the discussion thereof.

(premiums less dividends, a good enough approximation to claims plus expenses), or  $S \div NP$ .

In establishing any particular level of this surplus ratio as being good or bad for group insurance, a company would have to take into consideration many aspects of its business beyond simply the size of the group insurance surplus and the amount of net premiums. Thus the need for a company to attain a particular surplus ratio for group insurance must recognize at least the following additional factors:

1. The size of the company, the other product lines written, and the surplus position of those lines.
2. The size of the mandatory securities valuation reserve and group contingency reserves.
3. The company's underwriting philosophy in writing experimental or highly fluctuating kinds of coverages, including the relative sizes of the group life and group accident and health lines and the product mix within these separate lines.
4. The margins for experience fluctuations included in rate levels.
5. The extent of any special reserves or retrospective rating plans.

The purpose of this paper is not to develop the mathematics for determining whether some specific surplus ratio, such as 5 or 15 percent, is appropriate. Such a subject would be worthy of a detailed study by itself. Rather, the purpose of this paper is to discuss for the group insurance lines the effect of a specific ratio on growth rates and operating gain requirements, that is, the long-range operating plans for the lines. For all purposes in this paper, group life insurance and group accident and health insurance are considered together, because of the relative frequency with which they are both written on the same case.

It may be stated as a generality that, in order to maintain any particular ratio of surplus to premium, the change in surplus as a percentage of itself must be equal to the growth rate of the premium. Stated another way, if premium for the line is growing 15 percent per year, then the change in surplus must be 15 percent of the surplus in order to maintain the surplus ratio intact. This means that the operating gain plus any nonoperating gains must be at least 15 percent of surplus. This simple relationship among surplus, growth, and operating gain gives a crude but nevertheless useful starting point for planning. A few specific illustrations may be of assistance. For this purpose, nonoperating gains are assumed to be zero, and thus the entire change in surplus is caused by operating gain.

Table 1 shows a maintenance situation. If the actual surplus ratio is below the desired level, it will reach that level eventually if the company continues to grow and to generate the required operating gains indicated

in the table. However, it may take a long time to reach the objective, and moving to a more conservative set of coordinates may be a necessary short-term step.

Crude as this approach may be, it reflects the truisms that (a) the faster a company expects to grow, the more severe the operating gain requirements become to maintain surplus-ratio stability; (b) an operating gain that is acceptable as reasonable in itself, at least by historical standards, may be completely inadequate when a company is expecting high rates of growth; and (c) if a company grows faster than it can generate the needed operating gain, the surplus ratio will fall until it has dropped to the level that can be supported by the particular combination of growth rate and operating gain.

TABLE 1  
RELATIONSHIP AMONG SURPLUS, GROWTH,  
AND OPERATING GAIN  
(All Figures Are Percentages of Net Premium)

GROWTH RATE	OPERATING GAIN NEEDED TO MAINTAIN SURPLUS RATIO OF:			
	5%	10%	15%	20%
5%.....	0.2%	0.5%	0.7%	1.0%
10%.....	0.5	0.9	1.4	1.8
15%.....	0.7	1.3	2.0	2.6
20%.....	0.8	1.7	2.5	3.3
25%.....	1.0	2.0	3.0	4.0

This simple formula for surplus ratio would have been a reasonable planning tool five or more years ago because the "additional" factors and assumptions listed above (i.e., size of the company, other product lines, etc.) were reasonably stable for long periods of time. Some of them continue to be so, but others are changing rapidly. The major changes are coming in rate margins, whether these are simply the normal margins included in rate structures or the special reserves or retrospective rating arrangements that are now quite common. These risk-sharing devices are changing rapidly, and it is quite appropriate that they be built specifically into the surplus formula. Since protection other than surplus is now involved, one might modify the initial ratio and call it a surplus/protection ratio. A formula for such a surplus/protection ratio might look like this:

$$S/PR = \frac{S + f_1(\text{rate margins})}{NP - \Sigma f_2 PP}$$

In this kind of formula, surplus plus a portion ( $f_1$ ) of the rate margins is related to the net premium reduced by a portion ( $f_2$ ) of what may be called protected premium. The latter is premium backed by special reserves or retrospective rating arrangements; it is determined case by case and then aggregated. The factors  $f_1$  and  $f_2$  become highly judgmental within the following philosophical constraints:

1. Neither  $f_1$  nor  $f_2$  should be as high as 100 percent. Margins on one case generally are not available in full to offset losses on other cases; errors of calculation sometimes take place; and retrospective rating arrangements sometimes cannot be enforced.
2. Rate margins and special reserves or other arrangements for obtaining additional premium do take the place of some of the surplus need. In fact, these normally provide the first line of protection, being used before surplus is invaded. Thus  $f_1$  and  $f_2$  are not of insignificant value.
3. The larger the margin or risk-sharing feature present on a case, the more it is worth as a surplus alternative.
4. The larger the case, the less likely it will have chance fluctuations beyond a given level. Expressed another way, a given percentage of premium margin becomes more valuable as the case becomes larger.

Somewhat empirically, one might arrive at the following:

1. For  $f_1$ , use a constant such as 0.5, that is, one-half of the rate margins. This recognizes that a company might attempt to build into its rating structure a uniform percentage of premium for fluctuations, and perhaps case size can be ignored here as a practical expedient. A simple numerical approximation is to take a year's dividend times 0.5, the aggregate dividends being a reasonable approximation to the total margins developed in the rating process. The dividends automatically will self-adjust downward if claims increase and will do so before surplus is invaded, but only to the extent that there are margins on the case that has the increased losses.
2. Values of  $f_2$  might be obtained from a table such as Table 2.

These factors would be applied and the results aggregated. Administrative services only (ASO) arrangements are largely, but not completely, risk-free; arguments can be made for excluding such cases from the total net premiums, including only the administrative fees as risk bearing, or adding in equivalent premiums with maximum offsets from the right-hand column of Table 2. Special adjustments are needed also for minimum premium plans. It will be recognized that many alternatives exist for the factors  $f_1$  and  $f_2$ ; in fact, the illustrative surplus/protection formula itself is but one of a range of possibilities that exist. However, the general concept of this type of formula is far more important than its details.

Using this kind of formula, one could calculate positions of stability,

that is, how the variables would have to change in relationship to each other in order to maintain certain surplus/protection ratios. For any surplus/protection level there now would be three variables—operating gain needs, growth rate, and changes in the proportion of protected premiums or rate margins. How these three variables interrelate would determine the company's surplus/protection ratio.

While many possible illustrations could be given, it is probable that the following illustrations are representative of the likely ranges of these numbers. Rate margins are assumed to be measured in the aggregate by dividends at an overall rate of 5 percent of net premium, and  $f_1 = 0.5$ . Extra protection is assumed to be included in 50 percent of the premiums, with  $f_2$  averaging 0.7. Thus our surplus/protection ratio would be  $(S + 0.025.NP) \div (NP - 0.35.NP)$ . On this basis, Table 3 displays operating

TABLE 2  
VALUES OF  $f_2$  FOR CALCULATING SURPLUS/PROTECTION RATIOS

ILLUSTRATIVE CASE SIZE	EXTRA PROTECTION AS A PERCENTAGE OF PREMIUM				
	10%-20%	20%-30%	30%-50%	50%-100%	Over 100%
1.....	0%	5%	15%	40%	70%
2.....	0	10	25	50	75
3.....	0	15	35	60	80
4.....	0	20	40	70	85
5.....	0	25	50	80	90

TABLE 3  
OPERATING GAIN NEEDED FOR SURPLUS/PROTECTION RATIO STABILITY  
(All Figures Are Percentages of Net Premium)

GROWTH RATE	INCREASE IN PROTECTED PREMIUM				GROWTH RATE	INCREASE IN PROTECTED PREMIUM			
	5%	10%	15%	20%		5%	10%	15%	20%
	15% Ratio					25% Ratio			
5%.....	0.4%	0.1%	*	*	5%.....	0.7%	0.2%	*	*
10%.....	0.9	0.7	0.4%	0.2%	10%.....	1.6	1.3	0.9%	0.5%
15%.....	1.4	1.2	0.9	0.7	15%.....	2.6	2.2	1.8	1.4
20%.....	1.9	1.6	1.4	1.2	20%.....	3.4	3.0	2.7	2.3
25%.....	2.3	2.1	1.9	1.7	25%.....	4.2	3.8	3.5	3.1

\* Negative gains allowable.

gains needed for selected rates of growth in net premium and protected premium.

Implicit in these calculations are pure surplus ratios of  $7\frac{1}{4}$  and  $13\frac{3}{4}$  percent, respectively, in the 15 and 25 percent surplus/protection ratios. In theory, if one were satisfied with the overall protection funds and devices, the surplus portion thereof would be of no consequence. However, some surplus is needed for reasons other than fluctuation absorption, such as for working capital, and a company using this surplus/protection formula tool presumably would want to set some separate limit, however modest, on the pure surplus component.

As was true of the surplus ratio itself, under the surplus/protection mechanism higher growth requires higher operating gains to support a particular surplus/protection level, and if a company grows too fast the surplus/protection level will fall until it reaches a self-sustaining level. In addition, it will be noted that the inability to keep protected premium offsets growing as fast as the growth rate itself has a significant leverage effect in requiring higher operating gains.

The values illustrated in Table 3 are part of a family of values that are necessary to do the calculations with precision. Since they assume that the protected premium offset is  $0.5 \times 0.7$ , or 0.35, of net premium, these values would not be valid a year later if, for example, a company had a 25 percent growth rate coupled with only a 5 percent increase in protected premium. In that circumstance, protected premium would be only 0.29 of net premium, and a higher surplus ratio would be present, so a new Table 3 constructed on those assumptions would be needed. Over a short period of time, the Table 3 values illustrated are close enough to the correct values to be a good guide for planning purposes, especially if the rates of growth of the net premiums and the offsets are not greatly different.

Having established that a particular surplus ratio or surplus/protection ratio is desired, a company is then in a position to set down a plan for controlling the variables so as to achieve the desired goal. The plan must include, then, consideration of (a) how one controls growth rates, (b) how one controls operating gains, and (c) how one controls additions to protected premium status. Each of these topics will now be considered in sequence, and the discussion will finally come back to the question of the options that a company has when the variables do not fit neatly together to produce the desired surplus/protection ratio. Finally, the discussion will deal briefly with tracking the results against the plan and with the assignment of responsibility for successful implementation of the plan.

## II. THE MATTER OF GROWTH

Growth, positive or negative, can be classified by source in a number of ways, but for the purposes of this paper the following classification will be used:

1. *New issue* is growth by either (a) the acquisition of a new case or (b) an improvement in benefits or acquisition of new lives on an existing case by circumstances such that the company classifies it as new business for annual statement purposes. Growth from this source is, in general, a reflection of a company's aggressiveness in the market, although to some extent insuring a growth-oriented business will tend to produce additional new business through acquisitions.
2. *Net payroll change* is growth by natural increase in the number of people insured or by automatic changes in coverage in cases where schedules are directly wage-related. Growth from this source is, in general, a reflection of both the economy and the rate of inflation. Again, certain types of businesses and industries tend to produce more additional business from this source than others. Subtracted from this source of growth would be normal terminations of employee coverage under continuing policies, by death, disability, surrender, or termination of employment.
3. *Rate increases* are the net of increases on some cases and reductions on others. These are a reflection of inflation in claim costs, changing frequencies, and other trends that operate over time, as well as a reflection of the adequacy of the new-business rate structure.
4. *Lapses* reflect the loss of cases that terminate their relationship with the company. This negative growth source reflects, in general, (a) the company's ability to retain business in the face of competitive pressures, (b) its service capability, and (c) the effect of merger situations (i.e., whether the company's customers are likely to be "acquired" or "acquiring" companies).

It would be helpful to have some general measure of the relative sizes of these sources of growth. Such figures, as they pertain to premium from both group life and group accident and health, are not published. Indeed, even the total premium growth of a company's business is difficult to measure. Minimum premium plans result in "unnatural" premiums being reported in the annual statement in the light of the company's liability; the provision of ASO agreements results in only the service fees being booked as premium, and perhaps even the fees are not so shown. Thus, reasonable "industry" data do not exist. For discussion purposes, a set of numbers will be hypothesized that is felt to be reasonable, under current economic conditions, for a company that is moderately aggressive in its pursuit of new business and appropriately attentive to retaining its old customers. These represent annual growth rates, by source, when

related to, say, the annual statement premiums of the prior year; they are as follows:

New business.....	+13
New payroll change.....	+ 6
Rate increases.....	+ 7
Lapses.....	- 6
Total.....	+20%

These numbers may be high or low for a particular company, depending on its aggressiveness in the market. The new-business levels suggested are likely to be those of the leading group writers, as are the lapses. But the two do tend to go somewhat hand in hand, so that the net may not be too different for the less aggressive companies. Payroll changes are economic reflections and actually may be negative during recessions and depressions. However, rates of inflation such as those of 1974 and 1975 could cause premiums per life, particularly on group life, to increase more than enough to offset a reduction in the number of lives, and to make net payroll changes highly positive, at least for group life. Rate increases clearly are influenced heavily by medical care inflation rates; the immediate pre-price freeze period and the 1975-76 period showed relatively high rates of inflation, so that, even when dampened by the less volatile group life insurance rate adjustments, the total of 7 percent suggested may be too low.

If one were inclined to be somewhat more (or less, depending on one's viewpoint) conservative about these rates of growth, one might say that, if inflation were to abate and the economy become more normal, rate increases and net payroll changes might well be reduced. Such may well be true, but the author has difficulty believing that assuming less than a 17½ percent growth rate for the foreseeable future would be realistic for an aggressive company operating in the 1976 economic environment. In any event, our function is not to forecast a precise growth rate but rather to agree upon a figure that can be used to plan a growth-operating gain strategy that is consistent with a desired surplus ratio or surplus/protection ratio objective. It would seem that one should focus attention on the three bottom lines of Table 1, in which case the operating gain options are narrowed. Suppose for the moment that the operating gains called for are beyond expectations; in that event, one would have to reduce growth. What are some of the ways one might consider?

1. Sales could be slowed down. This obvious possibility probably has more appeal to actuaries than to salesmen but under some circumstances both will agree. Bear in mind, however, that slowing new-case acquisition is one



thing but discouraging improvements in in-force cases, or not wanting to extend coverage to new divisions that the policyholder has acquired, is quite a different thing. At least for the larger group insurance operations, upwards of half the sales probably come from extensions to in-force customers, often under circumstances where the policyholder or its employees, rather than the insurance company, is the prime mover in bringing them about. Furthermore, unless one wants to curtail brokerage connections severely and trim the sales organization, the reduction in new-case sales is not accomplished easily. As a practical matter, reducing the 13 percent new-business figure shown above by one or two percentage points may be the limit, and a tough one to reach.

2. Payroll changes happen; the insurance company does not cause them. In theory, one might control growth by writing insurance on nonexpanding kinds of customers. From a practical standpoint, however, this source of growth is almost uncontrollable.
3. Rate increases are needed to offset claim increases, and whatever growth they cause is necessary because the company would otherwise incur substantial losses. One might concentrate on writing inflation-resistant coverages, such as scheduled accident and health plans. However, even if this were salable, the likely result would be more policyholder requests or bargaining demands for plan liberalizations via the new-business route.
4. Lapses become helpful in the sense that they hold down growth. Actuaries and salesmen together work long and hard to acquire a new case, and the suggestion that losing it may be good is difficult to accept. If a case were marginal financially, it might not be a difficult decision, but otherwise the concept is hard to accept. As a company loses cases, it loses the expense amortization and operating gain that those cases would have produced. Finally, a plan to encourage lapses to hold business down may well have a snowball effect and cause more lapses if the company's actions are misunderstood.

There are not many good ways to slow down growth. However, this is only part of the story because improved operating gains, at least in part, may be the appropriate solution to a growth-operating gain imbalance. Clearly, those steps needed to improve operating gain will result in some negative impact on growth.

Before leaving growth for now, the following two special items merit brief mention:

1. Reinsurance offers the possibility of removing a fraction of a case's risk from the books. One can obtain some of the risk-removal "benefits" of a lapse, since the reinsurer must provide the surplus to back up the reinsured part of the risk. The prime company does indeed have to give up a share of the operating gain, but it keeps its people working and keeps its expense amortization abilities.

2. Legislative proposals, state and federal, that require improved health benefits cause risk and surplus needs to increase. Quite apart from whether the improvements are rated properly, the risk exposure goes up, by non-controllable causes, and so does the surplus need. Each company must then wrestle with the problem of whether its surplus-ratio requirements permit it to continue to operate in the group accident and health market. The impact of some of the legislation may well increase risk exposure by 25–50 percent in one step; once a surplus ratio is depressed below an acceptable level, the operating gain standards needed to get it back up are very onerous.

### III. THE MATTER OF OPERATING GAINS

Broadly speaking, operating gains can arise from only two sources, namely, the relative adequacy of the premium to cover the charges (for claims, expenses, and risk) made against it, and the relative adequacy of the charges themselves. Whether premiums are adequate will depend on whether the company's rate levels and its underwriting practices are such that, following the usual experience-rated pattern of determining group insurance dividends, the premiums are adequate to cover the charges levied via the dividend formula. Whether charges are adequate will depend on whether claim pooling practices are appropriate; whether expenses are kept within the bounds of dividend formula charges for expenses; whether risk charge levels are consistent with rate and underwriting practices and with lapse rates; and whether a negative type of charge, an interest credit, is in line with net interest earnings. What we have then is a situation in which the rate policies, the dividend formula policies, the underwriting standards, the lapse results, and the expense rates must be balanced. To control these multiple effects, even to discuss them, requires some subdividing and grouping. The reader may wish to refer to the paper entitled "Gain and Loss Analysis and Related Concepts for Group Insurance" (*TSA*, XIII, 412) for a fuller discussion of the categories employed, but in summary the sources of gains and losses are grouped as follows:

#### 1. *Underwriting elements.*

- a) *Deficit component:* A deficit is assumed to occur if the premium is inadequate to cover the charges made against it. Similarly, a deficit recovery takes place if, in an ensuing year, such losses can be charged back and sufficient margins in the rates exist to recover the extra charges. The net of deficit increases on some cases and deficit recoveries on others will, in general, be a source of loss, although it is possible to show temporary gains from this source in periods of heavy rating following a sharp loss period that has abated. However, since business in force usually is growing, and since some cases lapse in a loss position before the loss can be recovered, deficit components generally will produce an operating loss.

- b) *Risk component*: Most companies employ some degree of pooling in their dividend formulas because of small case size and/or large risk exposure relative to the number of lives, as in high-limit group life or catastrophic group major medical coverage. In either event, instead of the dividend formula charging a case for its actual claims, it would charge an average or assumed rate of claim for all or some part of the coverage, depending upon the size of the case. If such a charge is large enough in the aggregate, a gain results; if not, a loss.

With respect to the nonpooled portions of coverage, if a dividend formula were to pay back as dividends all apparent gains on good-experience cases, the company would suffer losses from deficits on poor cases and would be running a decidedly unprofitable operation. For this reason, a company makes a specific extra charge in its dividend formula for the purpose of holding back enough of the apparent gains on the favorable-experience cases to pay for the losses on the loss-position cases that cannot be made up by other means. This is called a risk charge. To the extent that the charge is designed to offset losses and produce a specific additional source of operating gain, the charge could be called a risk-and-profit charge.

2. *Expense elements*. Each case is charged for expenses (including taxes and commissions), on the basis of a formula of some type. The important matter for analytical purposes, of course, is whether, overall, a company is charging off its total expenses. Stated another way, perhaps more pointedly, the issue is whether it is able to run its business within the constraints of the expenses that its competitors and customers will allow it to charge.
3. *Interest elements*. The group lines receive interest income from their share of company assets, and credit portions thereof to individual cases. Again the matter becomes one of whether the company is passing on to its customers more or less than it receives out of the company total.

Taken together, operating gains over a long period of time come from these sources. Individual years can show aberrations based on annual statement accounting techniques.

Now it is appropriate to address the matter of control of these sources of gain. The reader is cautioned not to assume that each source is a self-contained compartment or must, per se, be self-supporting. There is no reason why risk charges cannot be used to offset expense losses, if we assume that this can be arranged in an equitable manner. Similarly, higher risk charges can offset more liberal underwriting standards that produce deficits, but only within limits. For planning purposes, the question is that of how, starting from its current position, the company could improve its operating gain if that were necessary.

1. *Underwriting control*.

- a) *Deficit control*: As a practical matter, the largest "swing" item, that is, the biggest one that can be turned around in a hurry, is a deficit, probably

one arising from the group accident and health component. The following can be done:

- i) Rate levels for new cases can be increased.
- ii) Rate levels for in-force cases can be increased at renewal.
- iii) Underwriting standards can be tightened so as to be more selective as to which cases are accepted within the given rate structure.
- iv) Increased efforts, not capable of being implemented quite so rapidly, can be made to retain "loss" cases until they repay their losses.

None of these are easy actions to take. As a practical matter, for most companies new-case rate levels have little total dollar effect; the larger new cases, and even many of the smaller ones, are experience-rated at issue, and the non-experience-rated new-case premium is quite small. Also, retaining "loss" cases is a risky business, one that is good within limits but cannot be counted on as a major source of financial gain. The most effective control comes from preventing the case from going into a loss position in the first place. That means more selective case acceptance or more conservatism in renewal practices (or new-case experience-rating practices). In the final analysis, the ability to avoid a deficit situation depends upon the adequacy of the assumptions for trend and for experience fluctuations in the renewal rating pattern. In some circumstances earlier or more frequent rerating may be of some help. The past few years have given adequate proof of just how quickly claim trends can change in the medical care field. Rates of increase that were 5-10 percent not too many years ago are now 20-25 percent. It is easy to get behind, difficult to catch up, and almost impossible to get ahead; customers simply will not believe the needs. Simple inflationary pressures have given way to a combination of inflation, additional utilization, malpractice prevention, and generally defensive medicine—the total effect is significant. In addition, the situation is so extremely uncertain that rate levels also should contain increasing margins for fluctuation. If an extra 5-10 percent fluctuation margin was used a few years ago, perhaps 10-15 percent is needed now to reflect the extra risks and reduce the odds of loss. Thus, a company is faced with a double-barreled need for larger rate increases, and in the end the question is whether the customer will pay what is required.

Another deficit protection device available is the use of special reserves or retrospective rating plans. They offer extra protection, which can take the place of some of the surplus needs, but, in addition, for short-term protection, they are tantamount to extra rate margins. Some of the contingency margins in the rates can be lowered by obtaining the needed protection by one of these methods.

In summary, however, deficit control requires case selection, appropriate rates for new cases and renewals, and conservation talents. It also requires the combined good efforts of actuaries, underwriters, and salesmen.

- b) *Risk-charge control*: If the charges for pooling still result in dividends being paid, an increase in such charges permits improvement in operating gain. Alternatively, better case selection or increased rates will lower actual pool losses in relation to the assumed pool charge level, thus improving the picture. While for many companies the pooled part of the business is relatively small, well under 10 percent of the business and probably closer to 5 percent, it is not an insignificant factor. A general increase in rate margins on larger cases produces about a one-in-four return, since the other three out of four cases are probably earning a dividend and little benefit is derived from the more conservative rate. On the fully pooled cases, however, there is a one-out-of-one return, and almost every dollar of higher charges or lower claims is a dollar of operating gain.

For the typical group insurance carrier the other risk element, the specific risk-spread charge, probably accounts for the bulk of the risk-oriented charges and gains. It is often expressed as a percentage of premium graded by case size and perhaps duration. Sometimes it reflects special risk characteristics of a case, such as its rate contingency margin, its dividend history, or its inherent risks (e.g., coverage levels, persistency, and claim frequency).

Included within the risk charge may be a specific charge to produce operating gain; that is, the charge is partially to offset risks and partially to produce a profit or operating gain. In its simplest terms, the way to increase the operating gain is simply to increase the risk charges, taking a little more out of the indicated gains on the cases with good experience. Clearly there are limits. At some point, the load on the good cases becomes too onerous, and they will lapse. Also, as a practical matter, the largest cases are the ones most closely governed by competitors' practices and buyers' demands. It would not be surprising to see a lower operating gain, as a percentage of premium, result on these cases. This has two significant meanings: first, even a relatively small increase in charges on a large case may be difficult to implement without significant loss of business; second, shifting the mix of business toward smaller cases may well afford a means of improving overall operating gain ratios without changing the relative operating gain on any part of the business.

To the extent that case selection and rating practices affect pooling gains, the actuary and the underwriter share the responsibility for this source of gain. Risk charges, however, are basically within the actuary's field of expertise and responsibility.

2. *Expense control*. Expense control is an area in which everyone has a role to play. In a sense, everyone would like more and better employees, tools, and statistics, but these all cost money and reduce operating gain. If one tries to compensate by increasing the dividend formula charges, the competitive situation is worsened.

If the dividend scale does not charge off full expenses in the early years,

but rather amortizes them, a reduction in growth rate will improve the financial results. This is but a temporary phenomenon, however.

The actuary, who sets the dividend formula expense charge levels, exercises control over this source of gain in the planning stage and would want to be sure that adequate monitoring systems are in place; but, as the year unfolds and budgets are replaced by actual expenses, everyone has a share of this important responsibility. A dollar of lower expense improves operating results by a full dollar, but a dollar of higher charges has a smaller effect, since it is collected only on those cases that are not in a loss position.

3. *Interest controls.* Over a short planning cycle, relatively little can be done to improve investment income. The item is basically determined by forces operating over many years, although to some extent the investment generation techniques used in interline accounting permit some improvement if growth rates are high and new-money rates exceed average rates. Changes in group's share of the assets, or in the rate of return the investment people can realize, are generally slow to emerge. Over the long haul, more demanding standards can be set for expected rate of return. One might expect, however, that similar and probably more severe pressures would be brought to bear by representatives of the individual and group pension lines. One can exercise some control over interest credits; however, this is a highly visible item, and if one's competitors are all crediting high interest rates on reserves, it is difficult to count on this source for operating gain improvement.

As in the case of growth, control mechanisms are possible but difficult to implement. It is clear that isolating the problem must be a first step in any operating gain control action. Across-the-board actions should not be used where one can be precise as to problem cells. If the big cases are not rated conservatively enough, additional rate increases on the little cases are inappropriate. Therefore, let us assume first that the kinds of cases that are causing losses can be identified with respect to those items that vary by case; for interest gain it is logical to assume little case-to-case variation.

The control mechanisms referred to above consist in general of (a) more conservative underwriting, (b) more conservative rates, (c) more conservative dividend formula charges, (d) more conservative expense control, and (e) better conservation techniques. None of these is without its side effects on growth, however. In general, *a-c* will lower growth rates; *d* may or may not affect growth depending on how expenses are held down; and *e* will be counterproductive for controlling growth, but clearly, if exercised on "loss" position cases that are recovering their losses, it must be viewed as desirable.

The question will arise as to the appropriate action if all the sources of operating gain are at appropriate levels and operating gain in total is

satisfactory by historical standards. In such a case, improvements may not be needed. However, this would be a non sequitur unless expected growth were also satisfactory by historical standards. Thus, "satisfactory" operating gain means satisfactory in the light of the company's expected growth rate and its desired surplus ratio, not just in the light of historical or competitive standards. Over a relatively long period, operating gains for the larger group writers were about 1.5 percent of net premiums, satisfactory by one standard but a potential problem when viewed in the context of Table 1. It follows, then, that a company that has a good surplus position can well afford to define "satisfactory" operating gains at a lower level than a company with a somewhat lower surplus ratio, which would have a difficult time competing.

#### IV. THE MATTER OF PROTECTED PREMIUM

This source of semisurplus is a relatively recent innovation in the group insurance field. As policyholders have become more interested in keeping the maximum cash flow in their own accounts, they have been more willing to agree contractually to extra premiums at year-end, if necessary, to avoid either large deficits or large dividends. This willingness has resulted in an expansion of retrospective rating arrangements to levels in excess of those required merely to restore what would otherwise have been normal premium margins. In addition, since reduced risk charges are appropriate with large retrospective rating guarantees, the larger customers are willing to agree to significant retrospective amendment plans; these customers are ready, willing, and able to pay their own way in any event, through an insurance company or a self-insured arrangement. For associations or other groups where minimum cash flow is not critical, but where rate increases are not easy to obtain or implement, a rate stabilization fund mechanism may be important; from the insurer's viewpoint, it is another device for providing extra protection against losses.

It is easy to overlook the traditional protected premium source, the normal contingency or fluctuation margin in the premium. This may be the normal source of fluctuation protection for the medium or smaller case. It is the first line of defense, an automatically adjusted buffer against claim fluctuations.

There are delicate trade-offs to be considered here. A normal dividend margin of some percent is associated with a particular normal level of risk charge. As one moves to retrospective premium plans and/or special reserves, one has to be sure to have equivalent protection for any normal premium fluctuation margin given up, and has to be sure that the premium actually charged is expected to be self-supporting. In addition,

reductions in risk charges, that is, reductions in current operating gains, must be consistent with the size of the special retrospective rating plans or special reserves. Even though these items are valuable as partial substitutes for surplus or as supplements to surplus, at some point the trade-off of reduced current operating gain becomes too large.

Increasing these sources of protected premium may be quite difficult. They are a large-case phenomenon, by and large. In addition, when inflation rates and trends change rapidly, customers become wary of these arrangements, especially those with higher limits. Indeed, the larger customer, who in the past really wanted the insurer's claim-paying facility and not its risk-taking facility, has seen such rapid cost escalation that he may well be moving back into the market for a risk coverage.

From the point of view of risk, ASO is not unlike a case with an unlimited retrospective rating feature. For the larger case, it offers an alternative to holding the insurer's risk-bearing premium in a reasonable relationship to the protection funds available. ASO is not without its risks, however, and this fact must enter the calculations in some fashion. Inclusion of the ASO fees as "premiums" is one expedient way to accomplish this result.

#### V. COORDINATION OF VARIABLES

By this point the reader may have concluded that group insurance is in a difficult time period. Growth rates may be too high and not readily controllable, operating gains may be too low and cannot be increased sufficiently, and securing policyholder acceptance for retrospective rating plans may be becoming almost a thing of the past.

To be sure, the rapid escalation in medical care costs has created many difficult problems. According to some, the only solution, if indeed there is one at all, will be found when government controls of some type are imposed on levels of charges and rates of utilization of services. This eventuality may be years away; meanwhile the problems are not easing, and a company must take action now to control its own destiny.

The planning cycle that ties the variables together, using a pure surplus-ratio standard for simplicity of illustration, would seem to go like this:

1. A desired surplus ratio is set for a point a few years in the future.
2. Expected operating gain levels are forecast.
3. Acceptable growth rates are calculated as balancing items.
4. Reinsurance and ASO are explored, and rate increases and payroll changes are estimated, leaving new business and lapses as the balancing items of growth. Normal lapses are estimated, and new-business goals (or limits) become the final balancing growth items.



5. Staffing needs are set, recognizing new business and other sources of growth, and budgets are calculated and checked for consistency with operating gain assumptions.

It would be convenient if the problem ended here, but it rarely does. It is likely that the new-business limits calculated initially will be out of line with one's ability to hold to them. It is also likely that budgets will be out of line with one's ability to cope with them in terms of charges to our customers; that is, they will be out of line with operating gain assumptions. So the process has to be repeated several times, starting at step 2—one plans a higher operating gain requirement and repeats the calculation. The steps taken to improve operating gain probably will increase lapses and reduce new-business opportunities, thereby slowing the growth rate. This should reduce the need for staff, but will also affect expense recovery assumptions. Again the testing is repeated, until one has matched (*a*) operating gain versus growth and (*b*) expense charges versus budgets, in such a way that each seems reasonable of attainment. Then one has a viable plan.

The question arises, of course, as to what one does if a viable plan cannot be designed. If one forecasts high, uncontrollable growth for a few years, the situation is not impossible, since the customer simply may refuse to pay the costs the company charges to produce the needed operating gains. One answer, obviously, is to go out of the group insurance business. This is not an irrational choice for some of the smaller companies for whom group insurance is an incidental line, or a line set up primarily to help the agent round out a portfolio made up chiefly of individual products. For the bigger companies, group insurance is important in its own right; it may well contribute 50 percent or more of the company's premium. Dropping out parts of group insurance lines for such companies is a very serious matter. One might consider dropping the group accident and health line only, the principal contributor to both high growth and low operating gains. However, many feel that, if a company were to drop its group accident and health lines, it could not remain a viable force for group life insurance.

What other alternatives are there? One choice is to accept lower surplus standards for the line. This may sound like a 180-degree reversal of position, because the whole strategy starts with a stated need for a particular level of surplus. Such a reassessment of surplus standards might be made periodically as conditions change; the advent of retrospective rating plans clearly changed the nature of the risk, and a reassessment a few years ago would have been quite appropriate. The real

problem, of course, is to avoid reassessing periodically for the basic purpose of altering a control mechanism that is doing precisely what it should do—acting as a control. There may not be a good rationale for lowering the surplus-ratio goal at the time; in that case, what can be done?

In the author's opinion, there has to be a solution to the dilemma, and it is to increase operating gain standards to the point where growth rates come down enough to meet the balanced need. The growth rate may be much lower than one would like, some policyholders may not be satisfied, and self-insurance may increase. However, in the end one has to be willing to forgo business opportunities that could be underwritten, and which may be profitable, because one cannot afford too much of a good thing. These admittedly are difficult concepts to accept, especially for a service business that sees customers needing the service. Certain kinds of cases may be good or profitable, but, given the other forces at work, especially growth problems, the cases just do not meet the balanced needs.

One other possible solution exists. The author does not believe it is appropriate, but others may disagree. The company surplus is not segregated by line—the surplus of the individual line does indeed support a group insurance loss. So why not build up the surplus of the individual line faster as group insurance surplus drops? The answer is that this is not equitable to the individual policyholders. The individual surplus is there if group insurance has a catastrophe, and that seems proper; however, it is a very different matter to allow group insurance to plan its operations in a way that requires protection from the individual lines in an amount that exceeds the surplus needs of those lines. There is room for considerable difference of opinion as to how to handle the situations where group insurance temporarily goes below its own standards, with the expectation of recovering later in an orderly fashion. If the steps needed for group insurance to recover ground very rapidly were to involve serious sales or financial problems, some arguments could be made for using the surplus of the individual line as a temporary source of protection. This could be justified on the basis that it constituted an "investment" for the benefit of the company and all its policyholders, in which case the individual policyholders should be entitled to some interest credits or return on this additional surplus. Such a situation might present itself for some companies upon enactment of some form of national health insurance.

#### VI. THE MATTER OF CONTROL AND ACCOUNTABILITY

Any planning operation must contain a method for tracking results against expectations. The kinds of controls needed will vary from com-

pany to company, but the basic data required are common to all companies; these are the following:

1. Growth rate
  - a) Sales results
  - b) Lapse results
  - c) Rate changes
  - d) Payroll changes
  - e) Premium in force
2. Operating gain
  - a) Deficit changes
  - b) Pooling gains
  - c) Actual expense versus budgeted

Regarding the matter of growth, most companies generate for other purposes each of items 1, *a-e*. The net results can be accumulated each month and added to the prior December 31 premium in force, thereby producing a reasonable approximation to each month's earned premium. This figure can be checked each month against a total in-force, if it is generated by other means, almost as a precaution. These numbers may not be accurate down to the last percent, but for "during the year" tracking they can tell us whether the company is growing at 10, 15, or 20 percent, and are good enough as broad estimates.

As to operating gain, the situation is more difficult. The data on deficits and pooling may well be gathered only for closed policy years, and we need a calendar-year figure. This problem can be solved by having underwriters or others forecast, say every three months, calendar-year results for each case of significant size, working from the closed policy-year data plus experience thereafter. Smaller cases may be forecast en masse. In each case, one is trying to be alert to a change in operating gain derived from these sources. Similarly, expenses are tracked, because they vary during the year and are quite controllable. The assumption is made that the budget was set appropriately from an operating gain viewpoint at the start of the year, and all that needs to be checked during the year is the relationship between actual and budgeted expenses.

No mention has been made of tracking risk charges, expense charges, or interest credits or debits. These do not tend to vary enough during the year to warrant tracking, and, as a practical matter, little opportunity exists for corrective action during the year. It should also be noted that some overall adjustment in the operating gain forecast must be made if growth rates vary from expected.

There is one other serious problem in attempting to track operating gain during the year, and that is the imprecise nature of annual statement

reserves for dividends and claims. Thus, operating gain tracking during the year can disclose no problem from the standpoint of inherent earning power, but the annual statement results could be quite different. Such fluctuations are to be expected, however, and within limits the effect is merely to move surplus accruals from one year to another.

If analysis during the year shows that the results are departing from plan in an intolerable fashion, some adjustments in practice must be made. Clearly, this is not always possible, but one should bear in mind that adjustments in practice may have to be made in, say, July in order to straighten out the following year's results, even if it is too late to correct this year's. Many of the corrective actions take months to become effective, especially if they apply only to policy years that are then commencing, such as increases in renewal rate factor assumptions.

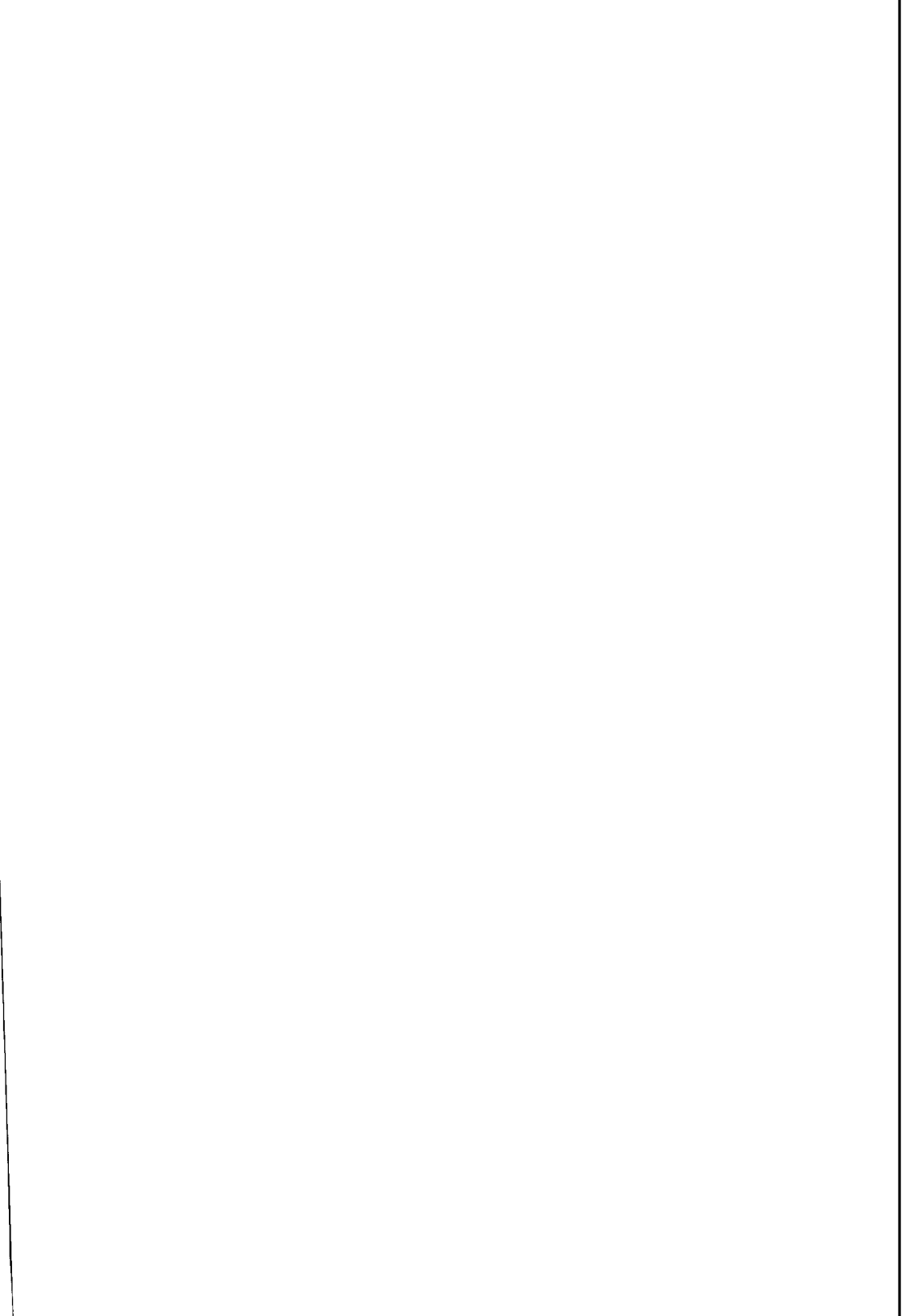
Finally, there arises eventually the need to understand why a plan has not worked out as expected. The cause may have been outside influences, inability to detect and react quickly enough to outside influences, or, unfortunately, errors of commission or omission. In any event, losses or departures from the plan have to be assigned to some causal factors, and assignments of accountability must be made. This is not an easy job. It is one thing to talk of actuarial theory, policies, strategies, and other technical functions, and we all enjoy that. However, it is quite another matter to focus on whether rate levels were set improperly or whether underwriters made poor case selections. In that case, one is dealing with performance assessment and compensation, and the tone of the memoranda and conversations is quite different.

The kind of problem to be explored is illustrated by the following questions: (1) What is the renewal rate policy, how well is it understood, and is it correct? (2) Was the policy applied correctly in the specific case? These should be easy questions to answer, and they lead us directly into identifying separate responsibilities for *selling* policies as compared with *applying* policies. Unfortunately, the matter is not that simple, since a renewal rate policy is correct or incorrect only when taken in conjunction with dividend formula risk charge levels and conservation success. Furthermore, most operating policies leave much to the underwriter's judgment: for example, evaluation of the meaning of past experience fluctuations, the likelihood of lapse, and the effect of a recent growth in the case. Underwriting is an art, not a science. The result is that the maker of policy and the implementer of policy each can feel that the other did not perform well; no precise standards exist to prove that either of them was wrong, unless there was a flagrant violation of standard practices. Nevertheless, these judgments must be made, perhaps by reviewing

a large number of actual case files rather than by using any precise statistical measuring rod.

#### VII. CONCLUSION

This paper was not designed to produce specific answers to specific questions. Rather, it was designed to describe a planning process, and at the same time to highlight some of the difficulties of running a group insurance business in these times. It is hoped that each reader will formulate his or her own rationale for overcoming these difficulties, since the problems are quite different for different companies. In addition, the general nature of the problem may be quite different for stock companies. Because of the possibility of issuing additional stock at specific points in time, these companies have a source of surplus that is not available to mutual companies, which must rely on internally generated sources.



## DISCUSSION OF PRECEDING PAPER

HARVEY S. GALLOWAY, JR.:

### *Level of Needed Surplus*

There may be some danger in using a percentage of premium as an indication of needed surplus. Although the author has explained very carefully the necessity of making the determination in terms of the elements of risk, there is some propensity for people to look for easily remembered rules of thumb to use in making judgments. The "written premium/surplus ratio" used in the casualty industry is such an example. A casualty company with a ratio in excess of 3.0 is thought to bear watching. If the ratio gets to 4.0 or 5.0, the company is thought to be in trouble. This is apparently without regard for the differences in risk.

The primary purpose of group reinsurance should be to protect the product line from momentary adverse results from coverages or schedules of insurance with potential for a high degree of fluctuation. Therefore, reinsurance of this type should be considered in the determination of surplus needs. This will affect both the unprotected premium and the surplus/unprotected premium ratio. Additionally, the possibility of reinsuring lines subject to great fluctuation may be one of the alternatives available when one is faced with a theoretical shortage of surplus, because of the reduction in surplus requirements that will result.

### *Stock Companies—Capital and Surplus*

The need to consider the rate of return on stockholders' equity and the growth of this rate of return is an additional complication for group actuaries working for stock companies. The relationships among premiums, surplus, dividends to stockholders, investment income earned on surplus funds, rate of growth needed, and rate of increase desired in the rate of return on stockholders' equity should be included in the planning parameters for a stock company. Additionally, excessive amounts of retained surplus charged to the group lines make it more difficult to earn a desirable rate of return on stockholders' equity if the investment income that can be earned on the assets representing excess surplus is less than the targeted rate of stockholder return. Therefore, although adequate surplus is necessary, excess surplus may become a type of liability if it is not used to generate levels of income beyond normally available rates of investment return.

*Operating Gains*

In the stock company environment, much of the mutual company's reliance on the dividend formula is directed toward the renewal underwriting process and, for larger groups, also toward the retention formula.

*Control and Accountability*

Moderate-sized group operations well may have significant deviations between budgeted expenses and the amounts that actually become available as margins for expenses during the year. For this size of operation it is more important to monitor actual-to-expected expenses, with expected expenses related to in-force business. Spending levels may have to be adjusted during the year to handle properly either unexpected decreases in business or failure to meet production goals.

The smaller group operation may have an advantage in attempting to correlate operating gain from the individual cases with financial statement results. The smaller number of groups makes it possible to relate case reserves fairly closely to statement reserves.

The author has done an exceptional job of capturing the essence of the current scene and the challenges available for those involved in planning, managing, and controlling profitable group operations.

(AUTHOR'S REVIEW OF DISCUSSION)

BERTRAM N. PIKE:

Mr. Galloway's comments, especially in the perspective of a stock company, are valuable additions to the thoughts expressed in the paper. I believe his comments about adequate versus excessive surplus are particularly helpful. To a lesser extent, the mutual company has a similar problem, faced with a choice of either retaining operating gains and surplus or returning them to its customers for their own investment.

While it is true that specific ratios of surplus to premium should be used only after adequate review of their propriety for a particular set of risk characteristics, it does seem that we are badly in need of some practical benchmarks. Perhaps Society committees working in this general area will produce such benchmarks some time in the future. Many companies now are working individually on this problem.

At the author's company, given the nature of its business and its own characteristics, including significant amounts of protection in addition to surplus per se, it was decided that a surplus ratio approaching 10 percent should be considered a warning signal. This was to be regarded not as a "ruin" or insolvency level but as one that signaled the need to reexamine,



and probably redirect, plans in order to improve the surplus ratio or at least halt its decline. It was also concluded, again for the author's company, that, if surplus were the only significant form of protection available, a ratio of about 25 percent would be far more realistic. In actual practice, the protection-ratio concept is the main control and planning mechanism, although surplus ratios per se are also reviewed.

