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REINSURANCE

A. What criteria apply in setting the acceptance and retention limits of a smaller company? Is catastrophe coverage, in addition, desirable? Why is retention adjusted by age, substandard rating or otherwise? Have there been any recent developments or trends affecting retention limits?
B. Is it advantageous to divide risks between two or more reinsurers? What are comparative costs of yearly renewable term and coinsurance?
C. Are margins adequate to reinsure special plans with high minimum amount and low premium? Should commissions be adjusted where reinsurance is required?
D. What reinsurance does a smaller company need on group insurance or on individual accident and sickness insurance?

MR. J. F. MACLEAN stated that, in his opinion, the criteria for acceptance limits are basic company policy factors such as (1) market of the company—city or rural; small, median or large income clientele; proportion of juvenile, young marrieds, business, females; pension trust, franchise, baby group; and (2) the present development and future objectives of the field force—geographical coverage and diversity; degree of sophistication in modern merchandising techniques. The use of reinsurance facilities gives company officials a free hand in determining the optimum program.

After the acceptance limits are established, the next step is to decide the retention limits. To some extent this is an emotional problem, that is, how much of a chance surplus fluctuation can be allowed without disturbing the Board of Trustees and management. If management is willing to retain more of the program, knowing that there is a possibility that individual years may be affected substantially by variations in experience, the company should be overly aggressive on retention. In his company, with a surplus of over $10,000,000, keeping in mind Irving Rosenthal's classic paper on chance fluctuation funds (*RAIA* XXXVI), retention limits are treated as a function of reinsurance itself. As a guide, they do not feel they should reinsure more than five percent of their issue as a maximum.

To be more specific, their determination of limits of retention on standard business is reviewed each year. A frequency distribution of the previous year's issue by size and mortality classification is run off. The theoretical retention limit is at the point where 98% of the issue would have been retained on standard business. They extend the standard limit through 250% because they feel that the extra margins in the rate more than overcome the possible chance fluctuations. They grade their basic

retention of $100,000 to $75,000 at ages 56 to 65 and $50,000 at ages 66 to 70 because amounts in excess are rarely placed in their company at those ages. They also grade substandard over Table F to $50,000 for the same reasons.

The Bankers Life of Nebraska considers it advantageous to divide their reinsurance between two reinsurers. On cases which are difficult to evaluate, within their retention, they find it important to get more than one underwriting opinion for educational purposes. On these cases they reinsure a minimal amount to partially cover the reinsurance company's costs, but keep most of the case. They are not interested in competitive bidding on substandard cases; since they are keeping a substantial amount they want a realistic evaluation.

As far as yearly renewable term and coinsurance are concerned, over a long period there should not be too much difference in reinsurance costs. However, they feel that yearly renewable term is less expensive to handle, largely because the clerical help does not have to be as sophisticated. They also feel that they can earn a higher rate of interest on the reserves than their reinsurers can.

Their specials have ample margins for necessary reinsurance because they are designed for their over-all program. Modern reinsurance programs with participation clauses have cut reinsurance margins well within those in which they operate.

The Bankers Life does not feel that commissions to writing agents should ever be adjusted where reinsurance is required. Cutting commissions is a self-defeating program. The reinsurance facility is used to enable smaller companies to compete with the larger companies—they should not charge the agent for the service. In the area of general agents' allowances, some modification of the components may be considered, although at this time they have made no changes nor do they plan any.

Although his company is not in the Group insurance field, they have been underwriting Accident and Sickness insurance for almost four years. In both areas they feel that their limit of acceptance should not exceed their retention. In other words, at this stage, they do not feel they should underwrite any coverage which they do not expect to finance and retain.

MR. H. A. WINTERS remarked that everyone interested in the theory behind acceptance and retention limits should study the paper on the subject presented by Mr. Edward A. Dougherty in Volume V of the *Transactions*. In actual practice both limits are usually determined by practical rather than theoretical considerations, particularly in the case of small companies. In a very small company the question of an issue limit seldom arises, because competition usually results in large policies being

placed in large companies. In the exceptional case where an application for a large amount is presented to a small company, the hunger for new business is usually sufficient to rationalize its acceptance. One practical danger of writing a very large case and reinsuring the major portion of it lies in the settlement options where the direct writing company usually assumes the entire risk and the reinsurance company is relieved of further loss after paying its portion of the claim in cash.

Retention limits must be determined with due regard to the amount of available surplus. The volume of business exposed is also an important factor in the determination of retention limits if fluctuations of the mortality experience from year to year are to remain within reasonable limits. The importance of both factors decreases with the growth of the company. Most small companies tend to be ultraconservative in the matter of retention limits. It is not uncommon for a rapidly growing company to suddenly find itself with too small a retention limit and too large a percentage of its business in force reinsured. Generally speaking, the company's retention limit should be high enough so as to avoid reinsurance on the bulk of its business, but at the lowest figure which will accomplish this result.

In regard to the question of catastrophe coverage, Mr. Winters believed every company represented at the meeting would welcome a reinsurance arrangement under which it would be protected against claims in excess of a fixed percentage of its expected mortality. So far as he knew, such coverage is not available at the present time. If, in the absence of such coverage, companies are forced to establish retention limits and reinsure individual policies above such limits, it seemed to Mr. Winters that catastrophe reinsurance is unnecessary.

The use of reduced retention for certain age and substandard groups is undoubtedly due to the persistence of the theory that, where few policies are issued in a class, the limit of retention must be reduced so that the chances of mortality fluctuations within the group will be minimized. A strong argument can be made, however, for the theory that we are interested only in avoiding chance mortality fluctuations on the business as a whole, and that each group need not necessarily be considered as a unit. Mr. Dougherty argued this very convincingly in his paper referred to previously. It is customary, nevertheless, to use a scale of retention limits graded downward at advanced ages and higher ratings, and there is some justification for this because of the less accurate underwriting appraisal of the risks in these groups.

Mr. Winters said that he has noticed no particular trend toward increasing retention limits during recent years. Reinsurance companies are probably particularly conscious of the natural increases in retention of

newly established companies, of which there have recently been a great many. New companies organized in the last few years, particularly since the demise of the limited capital law in Texas, have usually started with large surpluses, often with a surplus of a million dollars or more. Such companies retain larger amounts than companies which started out with small surpluses. Furthermore, as statistics have become available covering the mortality of substandard groups, the underwriting of substandard risks has become more scientific, and the newer companies are inclined o retain a greater portion of their substandard business than was formerly the case.

Skipping to section D, Mr. Winters said that it has always seemed to him that there is very little justification for reinsurance of group policies; however, some small companies, not normally in the group insurance business, may occasionally be faced with the problem of having a controlled case on which they may be sorely tempted to grant on a few lives a maximum amount of insurance out of proportion to the size of the group. If this is done, reinsurance of such risks may be indicated, but the reinsurance company would require some portion of the insurance on the other lives in the group. Excess loss reinsurance is now available for group policies from Lloyd's and at least one insurer in the United States. A company with a large volume of group insurance conservatively underwritten and without geographic concentration would consider such protection unnecessary, but the Texas City disaster illustrated what might happen to a small company with comparatively few group policies in force. Such a company might consider the premium paid for excess loss reinsurance well worth while.

With regard to accident and sickness insurance, a small company needs protection against an excessive loss on a single claim, just as it does on life insurance. The retention limits on principal sum benefits should be the same as on the double indemnity benefit written in connection with life insurance policies. On weekly indemnity policies with periods of not more than two years no reinsurance is indicated, but on long term weekly or monthly indemnity benefits the retention limits should be determined by the maximum potential loss. Reinsurance of both principal sum and weekly indemnity benefits above reasonable limits is available on a coinsurance basis.

In regard to the question of whether it is advantageous to divide risks between two or more reinsurers, Mr. Winters stated that a lot has been said about the benefits of competition but he, personally, liked to give business to one source. He felt that if all of the company's reinsurance goes to one reinsurer that reinsurer will have a valuable account and will make every effort to give excellent service. He had heard it said, on the

other hand, that if a company is too closely tied with one reinsurer the reinsurer may become complacent and in order to keep them "on their toes" it is best to divide the business between two reinsurers, each of which will try to outdo the other in service. He disagreed with this theory because if one reinsurer stopped rendering proper service they know that all of the business can promptly be taken elsewhere.

A major item in the selection of a reinsurer is cost. Fortunately, the reinsurance business has not suffered from the cutthroat competition of some other lines, and the net cost of reinsurance is fairly standardized. Under present experience refund arrangements, however, we cannot lose sight of the fact that a company's ultimate reinsurance cost is determined by the mortality experience on the business it cedes. While most experience refund formulas drop negative carry-overs after a limited number of years, a company could very easily find itself facing a period of no experience refunds after a year in which unusually heavy claims were incurred. The argument has been advanced with some force that by dividing its reinsurance between two reinsurers the original company does protect itself to a certain extent, because if one account showed a severe loss the other might still be profitable. The company would thus continue to receive experience refunds on half of its reinsurance, although no refunds might be available on the other half for three or four years.

With regard to the comparative cost of yearly renewable term reinsurance and coinsurance, Mr. Winters observed that the reinsurers have competent actuaries and adequate statistics available to them, so he has always assumed that in the long run the profit derived by the reinsurer will be approximately the same on either basis. There is no question, however, but that the incidence of cost to the original company or profit to the reinsurer is entirely different. When a policy is coinsured, the reinsurer makes the initial investment in the business, represented by the negative asset share, and its profits are deferred until later years, hence the necessity for a restriction upon recapture of coinsurance in the event of an increase in retention limits. Coinsurance is, therefore, an exceedingly valuable tool for the small company writing such a large volume of business that its surplus is suffering by the investment in such business. Such a company might be very glad to forgo recapture privileges and coinsure its excess risks in order to alleviate the immediate surplus strain. This is a partial solution for the small company which is faced with deficiency reserves on its preferred risk policies. Presumably the policies written for largest amounts and therefore most often requiring reinsurance will be written on preferred risk plans, and by coinsuring its excess risks on such policies the company transfers the deficiency reserve problem to its reinsurer.

With regard to the question of whether margins are adequate to rein-

sure special plans with high minimum amount and low premium, Mr. Winters stated that it is a simple matter to prepare calculations of the asset share type, deducting reinsurance premiums instead of mortality premiums, and thus determine whether the remaining funds are sufficient to accumulate the necessary reserves at representative ages. Assuming an average distribution of business, we can then determine whether it is advantageous for a company to reinsure its business as a whole upon the yearly renewable term plan. We must bear in mind, however, that the conclusion is based upon averages and these are misleading. A small company faced with the possibility of writing a $250,000 preferred risk policy on a man 50 years of age would face a substantial loss if that particular policy were reinsured on the yearly renewable term plan. Fortunately, the reinsurers are usually willing to coinsure such a policy, provided, of course, the commissions are not excessive.

With regard to the question, "Should the commissions be adjusted?" Mr. Winters said the answer is unequivocally "No." Agency organizations are very much concerned about loss of income resulting from excessive amounts of group insurance, the double dollar plan, and other types of mass selling which deprive them of commissions. The idea of reduced commissions in order to obtain competitive rates is repugnant to them, and they are particularly sensitive to further cuts in commission based upon the necessity for reinsurance. It is the company's obligation to arrange reinsurance facilities for amounts above its own limits of retention up to reasonable issue limits on a basis such that no adjustment of agents' commissions is necessary.

MR. W. R. MULLENS observed that in connection with monthly indemnity accident and sickness business the writing company will be interested in (1) avoiding what it defines as an unduly large charge against surplus for one loss in any one year, (2) avoiding unduly large fluctuations in its losses from year to year, and (3) obtaining the counsel of a reinsurer which presumably knows more than the writing company does about accident and sickness underwriting and claims administration.

Unlike the life insurance loss, the exact extent of the monthly indemnity loss is not apparent in the year in which it is incurred. From the point of view of that year's financial statement, the loss consists of the amount paid during the year plus the claim reserve required on the date of the statement. The claim reserve generally constitutes the much more telling blow as far as surplus is concerned.

Naturally the writing company does not want to cede more potentially profitable business than it needs to. Hence those monthly indemnity policies providing for aggregate indemnities of one year at reasonable levels

of indemnity might well be retained in their entirety. For benefit periods of more than one year, reinsurance would be required covering the period from the end of the first year of disability to the end of the indemnity period. Such reinsurance would cover the major portion of the indemnity.

This one year waiting period reinsurance has proved to be reasonably successful in the cases in which it has been used. It must be considered to be still in the experimental stage as far as premium rates are concerned, but it does have the advantages of (1) tending to meet the problem of a large charge against surplus for a specific claim in one year and the problem of loss fluctuation, (2) relatively low premium rate with a wide applicability to policies varying in detail, (3) avoiding duplication of claim administration expenses on the multiplicity of claims of short duration, and (4) a minimum of expense in connection with reinsurance accounting and administration.

MR. A. L. BUCKMAN pointed out that additional criteria to those already mentioned for determining retention limits of a small company are quality of the agency force and the ability of the home office underwriting staff. Where the agency force writes a large volume of very small policies and only an occasional large policy, retention limits should be set at a low level to take care of the great majority of policies being written. Where the underwriting department is not competently staffed with an experienced underwriter and medical director, heavy reliance must be made upon a reinsurer for guidance in underwriting. It is for these reasons as much as for any other that new companies start with low retention limits and gradually increase them as both the agency force and the home office underwriting staff become more experienced. The cost for this reinsurance service can be quite high.

Mr. Buckman declared that the Beneficial Standard Life entered the ordinary insurance business in 1944 and in 13 years has increased its retention limit a number of times from an original $1,000 to a current $25,000 retention and is considering increasing the present retention to $50,000. This is because the agency force is now producing a good volume of large size policies and more particularly because the home office underwriting staff, including senior underwriters and a full time medical director, has obtained a great deal of competence. The cost of the reinsurance during these 13 years when measured as the gross profit made by its reinsurers (this does not include home office costs of maintaining reinsurance records in his company) has been $276,490. During that same time his company suffered an accumulated drain on surplus from life underwriting of $200,000.

Mr. Buckman then reported on the relative costs of yearly renewable

term reinsurance and coinsurance as they relate to special plans with high minimum amount and low premium. Profit margins for ages 20, 35, 50 and 65 were calculated on his company's $10,000 minimum low premium endowment at age 90 plan. The Y.R.T. rates used in these calculations were the reinsurer's nonparticipating rates to eliminate the effect of possible dividends. Table 1 shows the year by year margins per $1,000 of insurance reinsured on a Y.R.T. basis. The margins were obtained by deducting from the gross premiums the following items only: (1) the nonparticipating Y.R.T. premium for the amount at risk, (2) the commissions paid on the general agents' contract, (3) the amount set aside for increase in reserve after allowing $3\frac{1}{4}\%$ interest credit to the previous year's reserve, and (4) $2\frac{1}{2}\%$ premium tax on gross premium less Y.R.T. premium (since the reinsurer pays premium tax only on the Y.R.T. premiums).

TABLE 1

MARGINS TO CEDING COMPANY PER $1,000 REINSURANCE ON Y.R.T. BASIS ON $10,000 MINIMUM POLICY

Year	Age at Issue			
	20	35	50	65
1	−$7.68	−$13.37	−$21.17	−$34.01
2	− 1.90	− 1.50	− 3.68	− 2.50
3	− .20	− .01	.44	4.96
4	.12	.36	.82	4.67
5	.46	− .43	1.19	6.14
6	− .16	.14	1.54	5.49
7	1.19	1.50	1.88	5.71
8	.58	.87	2.23	4.95
9	.98	.29	2.58	5.17
10	.40	1.63	3.90	5.41

Note that the Company suffers a drain on surplus during the first two policy years at all ages at issue and that the margins fluctuate around the zero point from the third through the sixth policy years at ages 20 and 35 at issue.

Table 1 is based on assumed perfect persistency. This is unrealistic. A persistency table was calculated for each of the four ages at issue, 20, 35, 50 and 65 based on the Beneficial Standard's withdrawal rates and 1946–1949 intercompany mortality rates. The margins of Table 1 were then adjusted by the factors of the persistency tables and by the release to surplus of the difference between reserves and cash values on the policies withdrawn. The resulting margins are shown in Table 2*a* after discounting the margins of each year to the first year at $3\frac{1}{4}\%$ interest.

Note that the accumulated margins (Table 2*b*) are negative for more than 10 years at ages at issue 35 and up; since most of the reinsurance is required at these older ages, indications are that it may take as long as 15 years to recover the drain on surplus the company would suffer on reinsurance made on the Y.R.T. basis.

As opposed to this Y.R.T. reinsurance his company suffers no drain on surplus on business reinsured on a modified coinsurance basis whereby the reinsurer allows certain expense margins both first year and renewal. The expense margins in the first year serve as a contribution to surplus as opposed to the Y.R.T. drain on surplus and, for this reason, it is necessary

TABLE 2*a*

PRESENT VALUE OF MARGINS OF TABLE 1 AFTER ALLOWANCE FOR TERMINATIONS AND INTEREST AT $3\frac{1}{4}\%$

YEAR	AGE AT ISSUE			
	20	35	50	65
1	−$5.68	−$9.97	−$15.95	−$28.81
2	.47	1.07	− .52	.29
3	1.39	1.51	1.87	4.67
4	1.18	1.32	1.61	3.67
5	1.08	.63	1.47	3.70
6	.58	.71	1.30	2.84
7	.94	1.06	1.21	2.48
8	.58	.68	1.15	1.88
9	.61	.39	1.11	1.67
10	.35	.62	1.33	1.49

TABLE 2*b*

ACCUMULATIONS OF MARGINS IN TABLE 2*a*, TO DATE

YEAR	AGE AT ISSUE			
	20	35	50	65
1	−$5.68	−$9.97	−$15.95	−$28.81
2	− 5.21	− 8.90	− 16.47	− 28.52
3	− 3.82	− 7.39	− 14.60	− 23.85
4	− 2.64	− 6.07	− 12.99	− 20.18
5	− 1.56	− 5.44	− 11.52	− 16.48
6	− .98	− 4.73	− 10.22	− 13.64
7	− .04	− 3.67	− 9.01	− 11.16
8	.54	− 2.99	− 7.86	− 9.28
9	1.15	− 2.60	− 6.75	− 7.61
10	1.50	− 1.88	− 5.42	− 6.12

that this special plan of high minimum amount and low premium be reinsured on the modified coinsurance basis. Furthermore, since most of the policies requiring reinsurance are on special plans, it is most important for a small company to reinsure on a modified coinsurance basis rather than upon a Y.R.T. basis.

One drawback with reinsurance on a modified coinsurance basis is that reinsurance companies are reluctant to grant recapture provisions on this type of reinsurance, whereas recapture of Y.R.T. reinsurance is generally permitted after 5 years. From the reinsurer's point of view the drain on surplus that it suffers on the modified coinsurance basis can be recovered only if the reinsurance policies stay in force sufficiently long. Some reinsurers on some policy forms do grant recapture rights, but even when offered these recapture rights generally are available only after 10 or more years.

MR. J. C. WOODDY said that the previous speakers had discussed the question of setting acceptance limits and retention limits by a new company. A more common problem than that of *setting* retention limits is the one of *changing* retention limits. Here the criteria which should be studied are the amount of reinsurance compared to the total amount of insurance in force, the average size of policies issued and of policies reinsured, and the amount and number of cases ceded facultatively because they exceed automatic limits. In this connection it might be pointed out, parenthetically, that it is desirable to provide that retention limits can be exceeded by $\$x$ to avoid ceding trivial amounts of insurance, and that risks less than $\$(x - k)$ will be canceled, x and k being chosen so as to avoid very short periods of reinsurance.

As far as the comparative costs of yearly renewable term and coinsurance are concerned, it depends to a certain extent upon the reason for using coinsurance rather than term reinsurance. If the reason for using coinsurance is that it relieves the ceding company of an early strain on surplus, then coinsurance should cost more in the long run because the reinsuring company must be paid for this service. However, if the primary reason for using coinsurance is that the direct company wishes the reinsurer to assume the risk of excessive lapses as well as the mortality risk, coinsurance may turn out to be more or less expensive than term reinsurance, depending upon the lapse experience.

The margin on many specials certainly is very thin. For some plans the margin is plainly inadequate. Adjusting commissions where reinsurance is required seems to a certain extent to defeat the purpose of having an issue limit higher than the retention limit.

Some of the reasons for smaller companies seeking group reinsurance are the following:

1. They are probably quoting on the difficult cases and they can certainly use some underwriting help from the reinsurer.
2. These groups may well call for amounts on individual lives in excess of the direct company's Ordinary retention, hence there is an obvious need for reinsurance. Such amounts may be with or without evidence of insurability.
3. A small company just entering the group field may wish to limit its risk in an unknown area to a much lower amount than it is willing to assume in the Ordinary field. Here the reinsurer is assisting the direct company to "get its feet wet."
4. The direct company may have no particular interest in entering the group field, but for prestige reasons may wish to write certain groups—say, its own home office employees or employees of a company owned by a director. In that case most or all of the risk can be transferred to the reinsurer.

These reasons, to a certain extent, apply to accident and health insurance also. The purpose of the reinsurer is to assist the direct company to get started in the business and also to get an independent underwriting opinion on the more difficult cases.

The answer to the question for both group insurance and individual accident and health insurance can probably be summed up by saying that these coverages generate problems and where there is a problem the reinsurer is bound to try to find a solution.

MR. G. A. MacLEAN observed that he found it very difficult to make a comparison of the cost of reinsurance on the Y.R.T. and coinsurance bases because Y.R.T. is usually on a participating basis and coinsurance is usually on a basis where there is an expense allowance slightly in excess of the commission being paid the agent. However, he is convinced that if the company introduces a low rate, high premium policy with premiums and values that are competitive as in the case of the Standard Life's $15,000 minimum policy, then it is necessary to have reinsurance on the coinsurance basis, at least for certain ages. This introduced complications in their reinsurance procedure which had previously all been on the Y.R.T. basis.

His company has found it wise to make this change because it has turned their agents' attention to larger policies, resulting in a larger average sized policy for the company, and it has helped build agents' morale. It also has enabled them to contract agents his company might not otherwise have been able to obtain.

Mr. MacLean said that unless a company has a very large retention limit he doesn't believe that it is either possible or desirable to reduce commission when reinsurance is required. It would certainly not put the company in a very good position to compete for agents with companies which

have a larger retention. For most smaller companies the number of large applications is not large enough to make any saving by reduction in commissions worth the adverse effect on agency morale.

Mr. MacLean said that they found reinsurance of a fair sized group case very useful in placing this case which involved $40,000 of insurance on the 3 top men of the group even though on their issue formula the maximum amount of insurance on any one life in a group of this size should have been $18,000. They were able to accommodate the group by having all lives over $15,000 of insurance medically examined and reinsuring the excess. Because of the reinsurance there was a reduction in the premium refund or dividend formula, but this was handled by frankly explaining to the employer that the cost of reinsurance had to be taken into account in determining the premium refund or dividend.

MR. F. J. ONSTINE referred to several different ways in which a reinsurance account can be divided between two or more reinsurers:

1. The primary reinsurer has an automatic exclusive agreement and the secondary reinsurer has a facultative agreement. Tricky cases, substandard cases and very large cases may be sent to both companies facultatively.
2. The automatic reinsurance may be divided equally between reinsurers by means of an alphabetic split. Tricky cases and very large cases may be submitted facultatively to both companies.
3. All standard business may be submitted to one reinsurance company and all business appearing to be substandard may be submitted to the other reinsurance company. This would be done in cases where the ceding company felt that the underwriting know-how of the second company was substantially superior to that of the first.

The advisability of splitting a reinsurance account depends upon the scope of operation of the ceding company, the volume of its reinsurance business, the services it expects from its reinsurers and such miscellaneous items as the geographical proximity to the insurance company.

Where a ceding company is satisfied that its primary reinsurer can provide the same services and facilities as any of its competitors, there are distinct advantages in sending the bulk of the reinsurance to that primary reinsurer. By "giving its all," so to speak, the ceding company feels in a better position to expect the reinsurer to "give its all" in the way of backbreaking service, special favors and the like. The reinsurer having the entire account instead of only half can afford to spend twice as much to provide the service.