

# TRANSACTIONS

OCTOBER, 1957

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## ADDRESS OF THE PRESIDENT, MALVIN E. DAVIS

### THE CURRENT POSITION OF THE AMERICAN ACTUARY

ONE of the valued privileges of being President of the Society is that of addressing the membership attending the annual meeting. Of course, any member may communicate pertinent information to the membership in a paper. But think of the obstacles he must overcome. First, he must have the paper approved by our Committee on Papers—not an easy task. Then, in having his paper discussed, he runs the gantlet of criticism by the entire membership who—with varying degrees of politeness and compassion—can point out publicly any gaps in his knowledge or weaknesses in his reasoning. The President of the Society delivering his address is relieved of all these embarrassments, for which at this time I am highly appreciative. Yes, mine is indeed a rare opportunity.

It is particularly so at this time, when we are fortunate to have with us so many actuaries from other countries who, as you know, are in the city to attend the XVth International Congress of Actuaries, officially opening tomorrow. In my choice of subject matter for this address, I have in part been guided by the hope that many of them would be here among us.

I have chosen to discuss the current position of the American (United States and Canadian) life insurance actuary, the problems that face him and his professional organization, the Society of Actuaries, and what the Society can do and is doing about them. Many of the problems confronting the actuary today have arisen from the rapid expansion—vertically and horizontally—of the coverages provided by life insurance companies. This has led to many innovations and developments, all of which have been stimulated by the economic climate that has prevailed in the United States and Canada since World War II. So let me start by briefly summarizing some pertinent facts.

## ECONOMIC CLIMATE

Since World War II we have witnessed rapidly changing economic and social conditions in the United States and Canada—changes which have had a marked impact on the business of life insurance. We have been favored by a high level of economic activity, full employment, high wages, and substantial increases in population. Despite the inroads of higher prices and taxes upon money incomes, there has been a substantial gain in real purchasing power over the past decade. Inflation was quite pronounced in the years immediately following World War II and during the Korean War, and after being on a plateau for some years the price level has in the past year or two edged upward some more.

The population of the United States now exceeds 170 million and that of Canada is over 16 million, both having increased more than 25 percent during the past ten years. Furthermore, the average age at marriage has been steadily lowered. Consequently, new families have been formed in unprecedented numbers.

The high level to which economic activity has risen is indicated by the growth in the labor force and the expansion in the gross national product (total national output of goods and services at current market prices). The labor force of the two countries has risen more or less continuously during the past ten years—to more than 70 million in the United States and above six million in Canada, representing increases of about  $\frac{1}{2}$  and  $\frac{1}{4}$ , respectively.

At present, the gross national product of the United States comes to 434 billion dollars a year and that of Canada to more than 30 billion. In terms of current market values, the figure for the United States is more than double that of ten years earlier and in Canada it has expanded to  $2\frac{1}{2}$  times the earlier value. Part of this tremendous expansion, of course, reflects the effect of price advances. But even after adjusting for the decreased purchasing power of the dollar, the gross national product during this ten-year period has grown by about  $\frac{2}{3}$  in the United States and by about  $\frac{1}{2}$  in Canada.

At the same time, total personal income in the United States increased by about 85 percent to 327 billion dollars, and in Canada by about 125 percent to almost 22 billion dollars. Furthermore, wages and salaries have increased more rapidly than total personal income. In the United States the average annual earnings in private industry, before taxes, increased from less than \$2,400 in 1946 to nearly \$4,100 in 1956. The proportion of families who had a money income, before taxes, of \$5,000 or more increased during this period from about 15 percent to nearly 50 percent. For Canada, such statistics are not readily at hand on a directly

comparable basis. The situation in that country, however, is about the same, as is indicated by the fact that the proportion of families receiving \$4,000 or more a year has more than trebled, while the proportion of those receiving \$3,000 or less has been cut in half.

The virtual doubling of the people's income since the end of World War II, while a very dramatic development in the economic history of the United States and Canada, has affected—and been affected by—price increases. The consumer's price index in the United States rose nearly 40 percent from 1946 to 1952, and has risen very little since then. In Canada, it rose 50 percent from 1946 to 1952, and somewhat more over the decade. Even after allowing for price increases, however, the real disposable income (that is, total income less taxes) per capita shows substantial growth since 1946—in the United States 9% to \$1,710 and in Canada 12% to \$1,240. Furthermore, these figures do not reflect the gain from a fivefold expansion of fringe benefits, such as group life insurance and pension and sickness benefits generally made available to American workers at a direct cost to them which is only a small fraction of the aggregate cost of the benefits, because of the contributions made by the employers.

#### EXPANSION OF INSURANCE COVERAGE

At no time has any significant number of families been adequately protected by life insurance and by health insurance benefits. The rise in population and the reduced purchasing power of the dollar have increased the need for coverage to an even greater extent, while the larger earnings of the people have improved their ability to buy it.

At the beginning of World War II, the amount of life insurance protection provided by legal reserve companies in the United States and Canada was equivalent to about 1½ years' income of the people. By 1946, however, it was only a little more than one year's income. During the past ten years the companies have substantially increased their insurance in force (in the United States 140 percent to \$413,000,000,000 and in Canada 175 percent to \$30,500,000,000), but today this is still equivalent to only about 16 months' income of the people or about two years' income from wages and salaries. It is significant also that the people's outlay for life insurance has not increased as fast as the amount of life insurance in force (only about two-thirds as rapidly), mainly because of the outstanding growth of group insurance and because of the marked shift to term insurance and policies containing a term insurance element. While much progress has been made in the expansion of insurance coverage, a great deal of work remains to be done before it can be considered to approach adequacy.

At the same time, more and more life insurance companies are undertaking to provide coverage against the financial burden of medical care. The outlay for medical care in the United States, for instance, has been estimated to be about 12 billion dollars a year and such expenditures have grown faster than the people's income. The need for coverage against the burden of abnormally large medical costs during any one year is now well recognized. In the United States, the number of companies of all kinds providing medical care insurance has increased from about 125 ten years ago to over 475 at the present time. In the United States, by the end of 1956, about 116 million persons were protected by hospital expense coverage, compared with only 41 million at the end of 1946. More than 101 million had surgical expense insurance or nearly six times as many as had such protection at the end of 1946; and nearly 65 million had insurance covering physicians' fees for nonsurgical cases, which was over ten times as many as had this insurance a decade earlier. Major medical expense insurance, providing benefits to meet the burden of abnormally large medical costs, although nonexistent ten years ago, now covers about 13 million Americans and is the fastest growing form of health insurance coverage. Despite the rapid expansion of all forms of accident and sickness insurance, there is need for further development as to the number of persons covered and the scope of the coverage.

From the marked growth of life insurance and accident and sickness insurance, it is obvious that strenuous efforts have been made to cope with the rising needs and demand for such types of coverage. At the same time, companies have striven to make the premium dollar as productive as possible for the insured under prevailing conditions. Both of these efforts have resulted in many developments. Let me enumerate some of the more important ones. A few of the coverages are not new, but they previously had not been considered of sufficient importance to be marketed by more than a few companies, and now are being offered much more widely. Many of them are innovations.

#### RECENT DEVELOPMENTS

##### *Cost Differential by Size of Policy*

It always has cost more per thousand dollars of insurance to service policies for \$1,000 than those for, say \$25,000. The general practice in former years has been, however, to charge a person buying \$25,000 just 25 times as much as one buying \$1,000 of insurance. There was even the question as to whether it was legally possible to make any differentiation in cost by size of policy. In recent years the legality of such practice has been definitely established. Furthermore, the effect of inflation on the

cost of insurance has made it advantageous to make such a differentiation in some circumstances.

A company faced with the problem of whether it should establish differentials by size of policy must weigh all of the consequences of such a practice. Such action, while tending to make the larger policies less costly, will have the reverse effect on the smaller policies. This effect will vary in different companies. Those which sell mainly larger policies may find that the differentiation by size does little to reduce the cost of larger policies, but substantially increases the cost of the relatively few smaller ones. On the other hand, a company that has a considerable proportion of its business in smaller policies may find that differentiation in cost by size has relatively little effect on the smaller policies and an appreciable effect on the larger ones.

Differentiation in cost by size of policy can be accomplished in a number of ways. Separate plans of insurance may be issued for amounts only above a stated minimum, substantially larger than \$1,000, while other plans would be issued for amounts as low as \$1,000. Of the largest 50 companies, more than 40 now have plans of insurance sold only for a minimum of \$10,000 or more. Alternately, a company may classify all of its Ordinary policies in several size classes with a different cost level for each; or a company may use a continuous cost gradation by size by charging a fixed policy fee. A mutual company may charge the same premium rates for all amounts of insurance but differentiate in dividends by size of policy. Each method has its advantages and disadvantages—and its special actuarial problems.

### *Terminal Dividends*

Sound operation of a company over the years, of course, requires that it maintain a reserve, over and above the statutory reserve, for contingencies otherwise unprovided for. In the case of mutual companies, such contingency reserve or surplus is contributed by the policyholders. When a company is growing at a moderate rate, its needs for surplus increase slowly and all policyholders need make only small contributions to maintain the surplus at a satisfactory level. When, however, a company's business is growing very rapidly, the contributions that the current generation must make to the contingency reserve become much more substantial, because that left behind by previous generations is usually inadequate for the current larger volume of business. The question then arises as to whether terminating policyholders should not receive some part of the unused portion of the contingency reserve which has resulted

from their contributions. In other words, is it advisable to incur the additional complexity and cost of paying terminal dividends?

### *Mortality Trends*

While improvement in mortality is not a new phenomenon, its change pattern and the level to which it has fallen present new problems.

Although mortality rates both in the general population and among insured lives have continued to decline, the rate of improvement during the past five years, among males at least, has been smaller than during the preceding ten or fifteen years. It was the introduction of antibiotics, improved surgical techniques, better medical facilities, and rising living standards that made it possible to achieve marked reductions in mortality during the period immediately following World War II. Comparable decreases in mortality have not taken place since that time.

Any further substantial decreases in mortality will depend largely upon the success achieved in combating the major degenerative diseases, notably the cardiovascular-renal diseases and cancer, which now account for over 70 percent of all deaths. In fact the recent distribution of deaths by cause can be summarized by the statement that out of every 9 deaths, 5 are attributable to the cardiovascular-renal diseases, 2 to cancer and allied conditions, 1 to accidents and other external causes, and 1 to all other causes. This makes it necessary to orient our underwriting increasingly toward cardiovascular-renal diseases and cancer. There is urgent need to develop tests capable of detecting these diseases in their incipient stages. Few such tests are at our disposal for the cardiovascular diseases and virtually none for cancer. Tests capable of detecting a high proportion of these conditions would be of great practical value to the underwriter and also, of course, to the medical profession. The life insurance business would find it well worth while to use its facilities for the development and validation of such diagnostic tests.

The mortality from the cardiovascular-renal diseases has been increasing somewhat among males. Because of the great weight of this cause of death and its upward trend, we cannot in the near future expect any pronounced improvement in male mortality from all causes combined. Among females, however, mortality from this cause and from a number of other important causes has been decreasing. Consequently, the difference in total mortality between the sexes has widened.

### *Premium Rates by Sex*

It has been the general practice to charge females the same life insurance premium rates as males. While female mortality has been significant-

ly lower than that of males, the average size of policies purchased by women has been smaller. A recent study by one large company showed that had it differentiated in premium rates by sex to reflect differences both in mortality and expense, the rates for life insurance alone would have been increased for females at issue ages below the middle 40's and decreased at the older ages. If the disability waiver of premium benefit had been included automatically at the same rates for both sexes, then the premium rates for females would have had to be higher than for males at ages under 55 and could be lower only at the most advanced ages.

However, in a company which follows the practice of graduating its premium rates by size of policy, the counterbalancing effect of the lower average size of policies issued to females becomes less important. There are now over 20 companies which issue insurance with lower premium rates for females than for males, provided the policy exceeds a certain minimum. Percentage decreases in premiums and age setbacks have both been used to establish premium rates for female lives. Each method gives rise to a number of problems relating to nonforfeiture values and deficiency reserves.

#### *New Ordinary Mortality Table*

The reductions in mortality have made it possible for some companies to charge nonparticipating premium rates lower than the net premiums according to the CSO table, which has the lowest mortality rates of any table usually permitted by law for valuation purposes. State laws generally require that when a company charges a lower premium than it assumes it will receive in calculating the statutory reserves, it must maintain a deficiency reserve corresponding to the present value of the difference. While this has not presented financial difficulties for some companies, it has posed serious problems for others. The demand consequently arose for a new mortality table to be used for valuation purposes which would more nearly reflect current mortality. At the request of the National Association of Insurance Commissioners, the Society appointed a committee to prepare such a new table for the Commissioners' consideration. This involved taking into account a great many factors. A new mortality table has been prepared and recommended for consideration by the National Association of Insurance Commissioners. This table has been studied by the actuaries of different companies. There is as yet no complete agreement regarding its suitability. The committee was also asked to study the question of the appropriate adjustments in premiums, nonforfeiture values, etc., for females if the new mortality table is adopted. In this connection the Committee on Mortality under Ordinary Insurances

and Annuities is for the first time assembling current experience data on males and females separately.

### *Changes in Underwriting Standards*

Lower levels of mortality, particularly at the younger ages, and increased administrative costs have led companies to introduce abridged procedures for the underwriting of smaller policies and to reconsider criteria in assigning risks to substandard classifications. Improved mortality and the higher cost of medical examinations have led to an expansion in nonmedical limits, especially at the younger ages. More favorable mortality associated with numerous occupations has resulted in reductions in or removal of ratings. Similarly, lower death rates among persons with certain physical impairments have prompted reductions in ratings for such impairments.

### *Review of Actuarial Procedures*

Rising expenses have necessitated a review of practices and procedures. While an increasing volume of business in force has made it advisable to adopt refinements in some procedures, increased costs have generally made it desirable to simplify all procedures as much as possible. In allocating costs, actuaries frequently have a choice of several sets of principles, any one of which—if consistently followed—would be equitable, even though one might produce quite different results from another. It is obviously not sensible to carry any method to such a degree of refinement that the cost involved therein becomes disproportionate to its value. This is particularly true when another method, even though yielding different results, would be equally justifiable.

### *Automation*

Life insurance companies have endeavored in a number of ways to reduce the impact of increased costs arising from inflation. One of these devices has been the employment of electronic data processing equipment. A number of companies in which the use of the very largest of such office machines might be appropriate have given the matter a great deal of consideration. In some, such machinery has already been installed. Other companies have approached the problem either by sharing the use of such machines with others or by the employment of smaller models embodying the principles of the larger machines. The actuary of a company today must have an intimate acquaintance with the capabilities of such equipment and with the changes in procedures required. It is only natural that the Society has taken a leading part in studying the application of such equipment.



*Salary Savings (or Allotment) Plan*

The willingness of some employers to deduct from an employee's salary or wages, upon his authorization, the amount of the insurance premiums on individual policies and turn such premiums over to the insurance company in bulk is not a new one. While on the surface this is a simplified procedure for the insurance company and hence permits it to charge a lower rate than it otherwise could for such a frequency of premium payments, it involves a number of complexities, arising in part from personnel turnover, layoffs, strikes, and disability of the employee.

*Pre-authorized Check Plan*

Another innovation of recent years has been to permit the policyholder to pay his premiums monthly through the use of the pre-authorized check plan. Since such premiums are less expensive to collect than monthly premiums collected in the usual manner, it becomes possible to reduce the charges for paying premiums monthly. Under this plan the policyholder authorizes the insurance company to draw a check on his bank account each month, and authorizes the bank to honor such checks. Many banks were at first opposed to this procedure, but now more and more have agreed to cooperate. In Canada the Bankers Association has recently endorsed it. The actuary's main concern with this plan is to make sure that the discount from the regular monthly premium is warranted by the savings involved. Under this arrangement as well as under the salary savings plan considerable volume is needed to justify a lesser charge to the policyholder than the regular monthly premium.

*Split-Dollar Plan*

In addition to making available increased amounts of group life insurance, a number of employers have aided their employees to buy individual life insurance. To meet the demand for individual life insurance the cost of which is borne partly by the employer, a number of companies will issue life insurance on what is known as the split-dollar plan. The employer contributes each year the increase in cash value and retains ownership in the proceeds to that extent, while the insured pays the balance of the premium. The employer's contribution represents in effect loss of interest on the money that he has invested, which keeps growing on each policy as it becomes older; while the insured, after the first year or two, need make only a very moderate, decreasing contribution. Of course, the insured's protection continuously decreases, since it amounts to the difference between the face of the policy and the growing cash value. In principle, the split-dollar plan is a simple one; actuarial complications

arise from the desirability of higher early cash values than are usually provided.

### *The Family Life Insurance Policy*

Recent years have witnessed the introduction of many new plans of insurance, some of which have presented new actuarial problems. The most outstanding has been a plan which provides in one package a basic minimum of protection on husband, wife, and children in amounts roughly proportionate to their respective needs. Insurance in this form has been enthusiastically received by the insuring public. While introduced only last year, it is already being offered by at least 40 companies. It can be offered with many variations and no two companies provide exactly the same benefits. Insurance in this form gives rise to many actuarial complications. The family policy illustrates the fact that in determining the degree of precision to be used in maintaining equity, the cost of doing so must be kept in mind. This principle of a broader concept of equity has a much wider application than to the Family Policy.

### *Group Insurance*

The innovations and developments that I have briefly referred to so far have been in the main those connected with individual life insurance. There has also been a remarkable growth in group insurance, with attendant new developments. In 1946, there were only about 160 companies in the United States and Canada writing some form of group insurance; by 1956, this number had increased to 563. At the same time, the amount of group life insurance in force increased from 27.2 billion to 117.3 billion dollars.

The entry of so many companies into the group field has raised many actuarial problems for them, and companies have found that once they begin to write group insurance their problems keep on growing. Whereas in its early days group life insurance was in a relatively simple form, today, in many cases, it is part of a package of "fringe" benefits subject to employer-employee bargaining, in which bargaining the actuary frequently plays an important part as advisor.

The social need for continuation of protection after employees retire has led to development of group permanent and group life with paid-up plans, as well as various advance funding techniques recognizing the emergence of higher costs as ages of the insured advance. The recent trend towards larger amounts of group life on executives, which bear a relation to salary similar to that of the insurance on rank and file employees, has brought to the fore underwriting and other actuarial problems. Then too, some dependent group life plans are being written, although this form of insurance is not yet permitted under the laws of many of the larger

states. In the field of group credit life insurance, there have been innovations such as single premium and mortgage loan plans. All of these new plans and trends have made demands upon the time and ingenuity of actuaries.

Increasing attention has also been directed to writing group insurance plans on small groups of employees. Whereas the legal minimum number of employees eligible for group insurance was originally 50 in most states, there has been a gradual liberalization of the laws, first down to 25 employees, and more recently, in some states, to a minimum of 10 or less. As a result many companies have had to devise special policy forms and administrative procedures for handling this new and important market in an economical fashion. This too has raised new actuarial problems, particularly relating to the underwriting of small groups.

Among the most difficult problems confronting actuaries today is that of an appropriate mortality basis for the issuance of group annuities. Several mortality tables containing reasonable margins for future improvement in mortality have been developed in the past few years for this purpose. It is disturbing to note that in some cases the likelihood of future mortality improvement is being ignored in making estimates of future pension costs.

#### *Accident and Sickness Insurance*

One of the areas in which actuaries are currently very active is accident and sickness insurance. This type of insurance represents a new and uncharted field in many respects. There has been a dearth of statistical information on which to base actuarial calculations, the need for which information has been pointed up by the rapid development of new forms of such insurance. Nevertheless, the responsibility for the soundness of new contracts usually rests on the actuary. The problems of providing coverage for the aged and to substandard risks have been given a great deal of consideration, and substantial progress has been made. There has arisen also the question of the merit of guaranteeing renewability—with or without reserving the right to change the premium rates for any class of policies. Then too there has been the problem of what reserves should be held on guaranteed renewable policies.

The remarkable expansion of group Accident and Sickness insurance over the past decade has also posed numerous and varied problems for actuaries. Even in such a comparatively well-established and traditional line as that of weekly benefits for loss of time from work, there have been significant developments.

In the case of hospitalization and surgical operation coverages, there has been a constantly growing demand for benefits which would pay a

higher proportion of medical bills incurred. As a result, plans have been devised providing higher amounts of reimbursement for hospital room and board charges and miscellaneous fees as well as surgical fees. There has also been much experimentation with hospitalization plans covering the full cost of semi-private accommodations. The increase in the ratio of available benefits to medical expenses incurred, together with a steady upward trend in these expenses, has naturally complicated the problems. Beyond this, additional forms of coverage have been devised to meet significant proportions of medical bills other than for hospitalization or surgery. Medical expense plans have been made available to cover doctors' charges for nonsurgical treatment either on an in-hospital only basis or wherever the services are rendered. A variety of benefits such as those covering the expenses of polio, or other dread diseases, diagnostic X-ray and laboratory examinations, etc., have been added.

A natural outgrowth of the expansion of hospital, surgical, and medical coverages to insure a wider variety of health costs has been the development of Major Medical insurance. This newest and most rapidly growing type of group Accident and Sickness insurance has taken two different forms. One is the all-embracing or comprehensive plan which covers virtually all types of medical expense. The other type of plan is added as a supplement to the basic hospital and surgical coverages, and reimburses for expenses in excess of a specified amount, taking into account the hospital and surgical benefits paid. The Major Medical field has been especially characterized by the postwar tendency toward "tailor-making" of group plans for different policyholders, with the result that an extremely wide variety of provisions is to be found in existing plans. The very sizable amount of benefit available under Major Medical insurance has required care to avoid overutilization or abuse of the plan. Different levels of deductible clauses and coinsurance provisions are being experimented with, in the attempt to arrive at a happy combination which will permit the payment of the most generous level of benefits consistent with maintenance of an adequate control over claims. In the interest of good administration of such plans, it will be essential to establish better communication and understanding between insurance companies and the medical profession. Efforts are, of course, being made to provide major medical expense coverage on an individual as well as on a group basis.

Attention has also been focused upon the need for continuation of group hospital and medical expense coverage for employees after retirement. One of the most important developments has been the offering of conversions to individual policies upon cessation of employment, along lines similar to the conversion of life insurance. This privilege is now in-

corporated in many group contracts, especially those which do not continue coverage on a group basis after retirement.

#### INCREASED RESPONSIBILITIES OF ACTUARIES

The rapid succession of new developments, of which only the more important have been mentioned, has added greatly to the responsibilities of actuaries. The actuary must determine whether a proposed innovation is sound for his particular company. He must be open-minded and progressive. He cannot counsel against the adoption of new ideas solely because they have not been tested. Therefore, in order to give proper counsel, he must carefully analyze and appraise each proposal, gauging its probable effect on his company. Some proposals he may consider unwise regardless of who has advocated or even adopted them; some he may recognize to be appropriate for one kind of company and not another; others he may consider venturesome but worthy of trial. The volume of business that may be expected, of course, is an important consideration, but the probable effect on his company's future financial position, prestige, and progress is of even greater significance.

In making the necessary analyses, an actuary must use his broad knowledge of facts, principles, and practices. Not infrequently, his recommendation must be negative and may be based on complex considerations which are not readily comprehensible to others and, as a result, he may find himself in an unpopular position. Therefore, he must be able to state his position in terms that can be readily understood. He cannot be effective if others cannot understand him. The actuary must be the most practical of men, but his position must always be based on correct theory, extensive knowledge, detailed study, and sound judgment.

Once the actuary has reached a conclusion as to the soundness of a particular proposal for his company, he must then set forth his own reasoning and conclusion with the utmost clarity and vigor. Unless he meets this responsibility, he is not worthy of his profession, nor is he continuing the tradition of his predecessors who established the insurance business on its sound and reputable basis.

While I have referred to the increased responsibility of today's actuaries in terms of those connected with insurance companies, the comments apply equally to actuaries connected with governmental and other organizations or to those in the consulting field.

#### *Keeping Knowledge Up to Date*

The actuary is always faced with the problem of keeping his knowledge up to date, and the rapid succession of new developments has made that problem more difficult. Trade papers and other literature will apprise him

of innovations in his field. These media, however, tell the "what" but they seldom can tell the "why" or, particularly, the "how." Fortunately, our business, while highly competitive at the sales level, is most cooperative at the actuarial level. We pool our experiences and make basic facts available to each other. Of course, we take individual action. Our joint responsibility ends when each interested member understands the facts. Interpretation of these facts is made on an individual basis.

Each of us looks to the Society for help in keeping abreast of the times. This is particularly true of those who must carry the full actuarial responsibility for their companies' operations, either alone or with a few associates. Meetings of the Society and of actuarial clubs can be very helpful. The question, therefore, arises as to whether the present schedule of such meetings is adequate. For instance, the suggestion has been made that more spring meetings be held on a regional basis, to make it possible for more of us—particularly the younger members—to attend such meetings. During the past year, I have had the opportunity of attending a number of meetings of actuarial clubs and I was most favorably impressed by the practical value of their programs. However, additional regional meetings of the Society might well supplement the very necessary and beneficial work being performed by actuarial clubs and permit more attention to be given to the specialized fields in which a considerable number of our members are now engaged. This subject is under intensive study.

#### PROBLEMS CREATED BY INCREASED WORKLOAD OF ACTUARIES

While actuaries have by no means been the only ones affected by the recent developments in the life and accident and health insurance fields, there has been a substantial increase in the individual workloads of actuaries. This is a pressing problem for which the most obvious solution is to increase the number of well-qualified actuaries. However, this is not easy to accomplish. The problem has two main parts: one is the matter of interesting young people in our profession, and the other is how best to guide their studies. What can and should the Society do about the growing need for actuarially trained people?

The Society of Actuaries, the professional organization of life insurance actuaries in the United States and Canada, now has 1,737 members, of whom 985 are Fellows and 752 Associates. This represents an increase during the past ten years of 65 percent in the number of Fellows and 85 percent in total membership. Gratifying as this increase is, it is far from adequate to meet the sharply increased needs of more than 1,000 life insurance companies, as well as the demands of consulting firms, governmental and other organizations.

By its very nature, the study of actuarial science requires a mathematical background. In order to stimulate interest in the study of mathematics, the Society has undertaken to support and promote an annual mathematical contest at the high school level. The members of the Society and of the actuarial clubs have undertaken to work in their local areas with the high schools in connection with this contest. This will help to spread interest in the study of mathematics and at the same time will give our members an opportunity to talk about actuarial careers to teachers and students.

The hope is that by stimulating interest in mathematics at this educational level there will be more young people with an appreciation of mathematics, and hence eventually a larger pool from which to draw a greater number with aptitude and basic preparation for our work.

Some of our clubs have supported contests of one kind or another and have taken other steps to promote mathematics in high schools. Some of them have undertaken to interest colleges in the teaching of actuarial science and have succeeded in getting the necessary support.

The Society is also helping to improve the recruiting of college students for actuarial work by preparing an interesting story about the possibilities of an actuarial career. Our profession has much to offer. We must, however, do a better selling job to get a larger share of the college students who have the qualities we need.

It also is advisable for the Society to review again its examination procedures. The many subjects covered today raise the question as to whether it is appropriate to examine every student on each of them in detail. Many young actuaries find it difficult to obtain practical experience in more than one or two of the fields now covered. Specialized questions for actuarial students in specialized fields have been suggested by some. Others think the solution lies in a different direction.

While a mathematical foundation is obviously necessary for actuarial science, there is room for a difference of opinion as to just how much mathematics is required. A broad liberal education in the humanities is also important in many actuarial assignments.

In the requisite training of actuarial students, we must, as in other matters, be practical. Naturally, we expect persons to qualify for Fellowship in our Society some years before they start planning their retirement! The average number of years recently required to complete the examinations could not readily be determined exactly because the statistics available include time spent in military service. However, including such service, the average was more than seven years for a group of 217 Fellows who passed their first examination in 1947 or later and became Fellows

in 1957 or earlier. We want, if possible, to shorten—not lengthen—this time. Our Board of Governors, recognizing that this is an important and complex problem, instructed me to appoint a special committee to make a comprehensive study of this entire matter again in the light of present conditions. I have done so.

While I have emphasized the need for keeping our requirements in tune with the times, I do not intend to imply that our requirements have not been appropriate in the past. In fact, the many and varied responsible positions held by actuaries today are a tribute not only to them but also to the selection process of the Society through examinations, continued studies, work on committees, and otherwise.

#### *The Place of Committee Work*

We have a number of committees, some of which have a large membership. Our regular committees are those essential to the year-by-year operation of our organization. With them I ought to classify some individuals who act as a committee of one, such as our hard-working Secretary-Treasurer, the Editor, and others. Special committees are also appointed to deal with specific problems as they arise from time to time. You will have noted that we have begun the practice of listing also the more important special committees in our Year Book. This not only gives recognition to our members for the work they are doing, but also informs all our membership of the individuals studying a particular problem on behalf of the Society. We try to make committees as representative as possible, but suggestions from other members are always welcome.

At the present time, among our major special committees we have a separate one to study each of the following:

*Public Relations.*—Better public understanding of what an actuary is and does. Activities in the field of education and promotion of actuarial careers. Relations with other actuarial groups and with other professions. Official recognition of “actuary” in laws and regulations.

*Fields of Activity.*—Review of the adequacy of our meetings, programs, etc., with respect to the various specialized fields of activity in which our members are engaged.

*Frequency and Types of Meeting; Relationship to Local Actuarial Clubs.*—Increase in usefulness of the Society to its members through the number, location, etc., of scheduled meetings. Coordination of activities of Society and local groups.

*Review of Membership Requirements.*—Comprehensive review of the requirements for membership in the Society, at both the Associateship



and the Fellowship level, taking into consideration current conditions and the various lines of activities in which actuaries are employed.

Committee assignments generally are of considerable educational value to the committee members, enabling them to become better acquainted with important actuarial problems and the ideas of other actuaries. However, such assignments generally also involve a substantial amount of additional work for members who are already carrying a heavy workload. It has been most gratifying to me during the past year to receive the wholehearted cooperation of the large number of our members whom I have asked to serve on committees.

In the case of some of our committees, such as the Education and Examination Committee, the volume of work and the pressure of time make the completion of the assignments impossible of accomplishment within normal office hours. Considerable study has already been given to reducing the work of the Education and Examination Committee to the minimum, while giving full justice to those taking the examinations. This committee already has a large number of members so that further increases in membership would raise serious problems of coordination. Work on this committee is a very important assignment. In the years to come, all of us will find our work much more difficult if the supply of capable actuarial talent remains low. The Society's committees and others on which actuaries are called upon to serve involve a great deal of work. May I urge the senior members to be as liberal as possible in allowing office time to be used by those who serve on committees. Sacrificial as this may appear at the time, it is a very good investment.

Let me summarize briefly. These are challenging times. Our national economy has been surging ahead on virtually all fronts. Concomitant with this there has been a marked increase in insurance coverages, vertically and horizontally, and numerous innovations and developments which have added much to the responsibility and to the workload of actuaries.

The members of our Society may well be proud of their important role in helping to build the financial security of the American people on a sound foundation. Actuaries of past generations have successfully solved the many problems that faced them. We, in turn, are confronted with a multitude of new ones. I am sure that the Society of Actuaries is competent to solve these problems—and will do so—by helping us to keep up to date on various developments, by attracting suitable young people to the profession, and by keeping their training attuned to the times.