THE ACTUARIAL ASPECTS OF POST-WAR PROBLEMS

The following is an abstract of a discussion which took place at the Institute on 25 February 1946:

Mr A. H. Shrewsbury, in opening the discussion, said that the first feeling of actuaries in approaching the subject to be dealt with that evening would be one of thankfulness that there were problems to discuss. A look at the continent of Europe yielded some conception of the perils that had been narrowly escaped. Displaced and disrupted populations, destroyed and damaged assets, and collapsed and collapsing currencies, represented conditions in which civilization had to be built afresh.

Although the greatest of the dangers had been dispelled, actuaries found themselves in a world which had changed, and would probably continue to change, with such rapidity as to present very difficult problems in the conduct of their transactions, many of which were of a long-term nature and not readily adaptable to changing circumstances.

The most fundamental of the changes was change in the value of currency. Depreciation, occurring rapidly in time of war, had reduced some currencies to no value at all, the French franc to about 2½% of its 1913 value, and the English pound to, say, 40% to 45% of its 1913 value. It might be argued that currency depreciation was immaterial because it was usually possible to arrange that liabilities and assets would be affected alike, and, indeed, it was possible to point to some investments which were not susceptible to loss of value when currency depreciated. But collapse of a currency involved assurance and pension arrangements in the common ruin, and a fall in value less severe than collapse could present almost insoluble problems through increases in expenses of management. Who would relish responsibility for the management of an insurance fund in Italy, for example, where increases in staff salaries which were obviously inadequate in relation to the cost of living nevertheless resulted in disastrous expense ratios?

In Britain it was reasonable to hope that expense problems, though serious, would be of manageable dimensions. Some undertakings would be faced with the disrupting effect of the decision to discontinue Approved Societies for National Health Insurance. Others would lose employers' liability business and would find that their corresponding overhead expenses would not concurrently disappear. A number of British offices might experience a similar disadvantage through nationalization of insurance business in Continental countries.

Apart from those discontinuities, costs had increased. The effect of the increase had been obscured during the war by absence of staff and by decreased new business, but those conditions were passing. Salary rates were necessarily rising; premium income would not expand automatically in any corresponding fashion, but would grow only as a result of work and outlay. In such circumstances, offices would have to continue further their search for means to achieve results with economy of effort, but there was a problem of policy involved. One of the biggest items of expense was the cost of new business, and that cost was greatly affected by the rate of expansion that was aimed at. Quite apart from investment difficulties, were circumstances likely to be such as to justify the acceleration of the search for new business?

There was no single or easy solution of the expense problem. It was to be hoped that the colossal outpouring of public money would be reduced and that the production of goods would be increased, so that any further general rise in prices would be kept to a minimum.

The risks of insidious destruction by instability of currencies were accompanied by risks of physical destruction by atomic bombs and other agents of mass devastation. Little could be done about it. The destruction of assets could be as damaging as the claims arising from death or injury. No means of estimating the mortality were available; neither was it certain that the mortality would necessarily be ruinous financially; claimants might be killed as well as lives assured, and annuitants would not be immune.
On that subject, it was impossible to feel any confidence in any system of extra premiums or extra reserves. The actuarial method of wresting certainty out of an uncertain world failed; the uncertainties were too great. Contracts would inevitably include a war condition, whether in writing or unwritten. There would be the difference that the written clause would apply to all claims within its scope, but the unwritten clause would apply only if the claims proved to be ruinously great, when presumably the world would be in chaos.

Apart from those catastrophic risks, there were developments of a more normal nature. The growth of aviation merely presented underwriting problems to be dealt with on established principles; it seemed most unlikely that it would have any significant effect on general mortality. But advances in medical treatment of malaria, typhus, pernicious anaemia, pneumonia, septicemia and infections of the urinary system, including as an incidental advantage the power to control some inoperable infections at advanced ages until nature effected a cure, could not fail to have an important effect on mortality rates. Further, that effect would be enhanced by the National Health plans, which were intended to apply free of cost to all sections of the community in all parts of Great Britain. The full effect might not be apparent for perhaps five or ten years, and possibly in that period there might be a repetition of the experience in the years following 1918, when it seemed that some after-effect of war was adversely affecting mortality at the middle ages; but broadly it seemed reasonable to expect that decreases in general mortality rates would continue.

In those conditions, further elucidation of the expected mortality of annuitants had become a pressing subject. With regard to immediate annuities, it was not easy to understand the experience of the past fifteen years or so, which had showed only a small decrease in mortality. Possibly the large influx of new lives had been influenced by a change in economic conditions and had resulted in selection less adverse to the grantors of annuities than had been the case at an earlier date. However that might be, it seemed that further information on the mortality of annuitants was desirable.

Still more difficult, but also important, was the subject of deferred annuities. There had been a great increase in private pension schemes, and the liability of the life offices under those schemes was of the order of £50,000,000, i.e. it was about half the immediate annuity liability of the United Kingdom offices. Moreover, the deferred annuity liability was increasing rapidly and it was not unlikely that it would come to represent the major part of the annuity liability. For the first time, therefore, there was a real need, however difficult it might be, to try to extend the forecast of annuitants' mortality far beyond the forecasts required for immediate annuity business.

Those responsible for estimating future sickness rates were likely to have much to consider. Several different influences were at work, but one of them—the advance in medical knowledge and practice—was, in relation to sickness rates, a complex force. There was a kind of battle between advances in preventive medicine and advances in the treatment of disease. Advances in preventive medicine represented net gain, but successful medical treatment could have the effect of increasing the cost of sickness through restoring to work a man who lived to be ill again.

With regard to the National Insurance scheme, it was very interesting to see the reasons given by the Government Actuary in his Report on the financial provisions of the Bill (Cmd. 6730) for expecting a large increase in monetary sickness rates. Perhaps not unexpectedly, his main reason was the old principle, the bigger the rate of benefit the higher the rate of claim. In the early years of the scheme, the unfavourable factors which the Government Actuary had recorded might possibly be offset by the favourable effect of small unemployment; but the outcome might be an immediate increase in the sickness rates experienced under the scheme.

On a not too long view, the things which he had mentioned, as affecting the liabilities, caused less anxiety than the outlook for investments. High income tax, cheap money and the narrowing of the field of investment might be a trinity, but few actuaries would call it holy. Assurance funds had suffered by the requisitioning of American and Canadian dollar securities and of large amounts of the sterling securities of India and of the Union of South Africa. The nationalization of a number of industries was expected,
and the investments in those industries might be repaid or converted to a gilt-edged basis. Building difficulties restricted new mortgage business. National policy limited the number of new issues on the Stock Exchange. Long-continued high death duties had reduced the supply of reversionary opportunities, and the authorities were discouraging loans on medical practices. About 40% of the total assets of life assurance funds in Great Britain consisted of British Government securities, and in some funds the proportion was over 50%. In Canada, recent life assurance balance-sheets showed that the proportion of assets invested in securities of various Governments amounted, in some important instances, to over 60%.

Those percentages implied that the new investments of the war years had been placed, very properly, almost entirely in Government securities. Life assurance in Great Britain had never been conducted on the basis of investing exclusively in gilt-edged securities; a wider spread of investments had always been considered desirable. How far would satisfactory alternatives be effectively available? That was a point which would receive close and anxious attention from actuaries, and the outcome would fundamentally affect many of their responsibilities.

The narrowing of the investment field had intensified the effect of cheap money, which could be regarded as having begun with the funding of the 5% War Loan in 1932. Since that date the yield of invested funds had fallen almost continuously, and the life offices had coped with the resulting situation by increasing premiums for new business, by reducing bonuses and by increasing reserves. The fall in the yield of ordinary life assurance funds had been severe, from about 4½% net to about 3% net, and some of the business on the books had involved an interest loss. The consequent problems of the equitable treatment of successive generations of policyholders in periods of falling surplus had already been discussed by the Institute. Moreover, since 3% net much exceeded the yield obtainable on new investments, it was obvious that the downward pull on the yield of invested funds would continue to operate, even if, contrary to indications, there were some improvement in the terms which could be obtained for new investments.

The Chancellor of the Exchequer had announced his intention to try to reduce interest rates still further. The majority view appeared to be that he would succeed, at any rate for a time, but that was the short view. Actuaries were more interested in the long view, and with that they entered on unknown ground. No convincing reconciliation of long-continued cheaper money with expanding trade had been put forward, nor could inflationary risks be forgotten. A continuation of the experience of the past fifteen years might be encountered, but it was also possible that a point would be reached where it would be necessary to reverse the policy and to encourage real saving. Such an outlook presented the awkward possibility of a continued fall in surpluses followed by eventual depreciation in the value of investments; and it emphasized the point that while it was possible for them to conduct their transactions on the basis of very low rates of interest, it was very difficult to do so during a decreasing interest period of unknown duration.

Mr H. Dicken referred to the Report of the Government Actuary on the financial provisions of the National Insurance Bill. In the Appendix to that Report there were given male and female mortality rates at quinquennial ages from 17 to 87 based on the civilian experience in Great Britain in the three years 1942-44, excluding war deaths. That was a population table, and it seemed natural to compare it with the last previous population table available for England and Wales, namely, the English Life Table No. 10. It was rather striking that the rates shown in the Report of the Government Actuary amounted in the case of male lives to only 75% to 90% of those by English Life Table No. 10—at no age to more than 90%. In the case of female lives the corresponding ratios ranged from 60% to 83%—at no age more than 83%. At the time of the publication of the forecast (f) and (m) tables, many people had been struck by the substantial increase in annuity-values at ages over 60 as compared with the previous annuity tables, and it had not been immediately noticed that the mortality rates of those forecast tables were very high at ages under 60. Five years later, when the extension
of the \( a(f) \) and \( a(m) \) tables to younger ages appeared, that point did receive notice, because the rates by English Life Table No. 9, published meanwhile, were lower than those by the \( a(f) \) and \( a(m) \) ultimate tables. The extension tables were graduated into the original \( a(f) \) and \( a(m) \) ultimate tables at age 50, and between ages 40 and 50 the extension tables showed lower mortality rates than the latter, whilst under age 40 the rates were far lower than would have been obtained by extrapolation from the original tables.

Comparing the Report of the Government Actuary on the National Insurance Bill with the \( a(f) \) and \( a(m) \) extension tables, it would be seen that for ages under 60 the ratios of the Government Actuary's rates to those of the extension tables ranged from 60% to 100% for male mortality, and from 50% to 100% for female mortality. Over quite a considerable range of the early female ages—namely from 27 to 42—the ratio of the Government Actuary's rates to the \( a(f) \) extension rates was not appreciably over 50%.

Those figures needed consideration in connexion with the large amounts of deferred annuity business on a without-return basis transacted under staff pension schemes. The point had been partially recognized by using the A 1924–29 table (which showed lower mortality than the \( a(m) \) ultimate table until after age 60) for the mortality under such deferred annuities up to the pension age, but it appeared that that was not sufficiently stringent, especially for female lives. For the male mortality up to age 62 the A 1924–29 table did represent somewhat lower mortality rates than those of the Government Actuary, but that was not so for the female mortality, where for the whole range from ages 17 to 62 the new rates of the Government Actuary were approximately equivalent to those of the A 1924–29 table with a deduction of about 5 years from the age, if a reasonable allowance were made for the selection to be expected in staff scheme mortality.

If new \( a(f) \) and \( a(m) \) extension tables were to be graduated so as to run into the old tables at age 60, and to represent (say) 90% of the Government Actuary's new mortality figures, it would be found that for a male life at age 20 the resultant annuity-value on a 3% basis would be about one year’s purchase more than under the present extension table, and the same applied also to a female life of that age.

Mr H. G. Jones was not sure whether the effect of war on mortality was a 'post-war' problem in the strict sense, but it was certainly a problem. As the opener had indicated, there was no means of measuring the mortality that might result from another war, and British offices had tackled the problem in two ways. One was by not covering the risk; the other was by covering it, but at the peril of bankruptcy should it prove too great. Neither alternative was satisfactory, and he thought that it might be useful to draw attention to the method which had been used in Continental countries.

Briefly, that method was for offices to form a pool to cover war risks, in some cases under Government auspices, but in others, he thought, on their own initiative. To be satisfactory the method probably needed Government control, and for that reason might not be welcomed in Great Britain; but it was questionable whether there was any really satisfactory way of covering war risks without some Government control.

The pool reassured the risks written by the various individual companies on the condition that a small extra premium was paid immediately, while if and when war should occur increased extra premiums were to be collected. When the war had ended, or at some stage when it was possible to measure the experience, the cost of war claims would be spread over all the assured that had been covered and a levy imposed to meet any excess of cost over the extra premiums received.

 Provision might also be made for a reduction of the sums assured under surviving policies either in lieu of or in addition to the levy.

It was possible in that way to cover all war risks without, he thought, thereby risking the bankruptcy of the companies undertaking the cover. The possibility of some such scheme might usefully receive consideration in Great Britain.
Mr R. E. Underwood said that at the beginning of the war he had submitted to the Industrial Life Offices' Association the suggestion that it was unfair that those who fought and those who were bombed should take all the risk, whilst others went scot-free. His suggestion had been a general reduction in sums assured so that all the assured would suffer some reduction and not merely those who were unfortunate. That suggestion had not met with any support, but subsequently he learned that one of the offices transacting ordinary life assurance business had in fact adopted such a scheme.

Policies effected for financial purposes were a difficulty, but that might be overcome, for such policies were few in number and extra premiums could be charged to cover the risk in those cases.

Mr P. Goodfellow thought that a problem which was worrying many actuaries was the question of improvement in mortality, and particularly the improvement in the mortality of annuitants, because of the large increase in pension business. Actuaries would have to make up their minds whether they expected mortality to improve or not. Most of them were faced with a larger life fund than annuity fund, and from the rather brief investigations which he had made he believed that the gain from improvement in mortality on the life fund was likely to exceed the corresponding loss on the annuity fund.

Life assurance tended to cease at the time when annuities commenced, so that if the improvement in mortality were level all would be well; but it was easy to conceive an improvement in mortality of much greater effect at the older ages than at the younger ages. There was a constant, or even increasing, accident risk which probably persisted throughout life, and the mortality rates at the young ages were in any case extremely low, so that the financial effect of a further improvement at those ages was not very great. At the older ages the financial effect of a comparatively small percentage reduction in $q_x$ might be very large. He thought that some estimate of the changes in mortality rates over the war years should be made as soon as possible.

Mr A. H. Rowell referred to the 'bread-and-butter' problem of calculating premium rates for whole-life and endowment assurance contracts, which represented the bulk of the business of life assurance companies.

When he had been listening to the opener and hearing his account—with which he personally agreed—of the ingredients which went into the machine out of which the premium rate emerged, he had not found them very encouraging. Mortality might become lighter, but there was one possible adverse factor which might arise if and when the medical profession became State servants. He thought that illness, or the tendency to illness, had a psychological side. People were accustomed to have the medical attendant that they fancied, and a part of the everyday work of the medical profession was to remove fears from those who suffered imaginary illness. He believed that to be a public service, and he was not sure whether under the new system that valuable service would be rendered in at all the same way. There was also the case of the patient who required immediate attention. He wondered how many gangrenous appendices would fail to be removed in time because of the many forms to be filled up in order to obtain a bed in hospital.

With regard to expenses, he thought that the outlook was definitely depressing. He took the view that expenses were sure to rise. Offices were also faced with the possibility of a continuance of cheap money and of ultimate depreciation and, on top of all that, they had the nightmare of war risks.

In the matter of premium rates, he always regarded their calculation as a 'new money' problem, and so he started with a rate of interest which was regrettably low. He thought, in his innocence, that the new premiums should carry something approaching a proper allowance for expenses. When he had calculated the net premium loaded for expenses, he felt bound to add a nice comforting constant to take care of those terrors with which the future was undoubtedly populated, including the question of war risks. On paper, the arguments in favour of a written war condition were irresistible, but, having said that, he hated the sight of a written war condition so much that he forgot to put it in. If no war condition was inserted, something should be added to the
rate of premium, because a risk was assumed over and above that incurred by the more prudent, careful people who put in a war condition.

When he had finished his arithmetic, he was sorry to say that he arrived at a rate which led him to marvel at some of the rates achieved by his far cleverer actuarial colleagues. He had asked one or two of them how they did it, and their answers were a little mysterious; frankly, he did not understand them. One of them had said, ‘You obviously do not realize how much easier it is if you have really large funds’. He could not understand that. Another had said, ‘Of course, a great deal can be done by a perfectly legitimate allowance for the expenses which the new business is going to incur; if you charge very high rates, the business is expensive to sell, but if you charge a low enough scale of rates, the policies sell themselves in vast quantities, and there is no need to load the rates for expenses which are not going to be incurred’. It seemed to him that there was a danger that if enough new business were done on those terms the end would be a large snowball of omitted charges, and on top of that, as the opener had pointed out, the actual expenses would be rising.

He thought that, in principle, the right rate should be charged for the risks to be covered and he did not believe that that principle was sufficiently adhered to in practice.

Jhr G. M. M. Alting von Geusau, President of the Vereeniging voor Levensverzekeringswiskunde, who, together with the Treasurer and Secretary of the Society, was present at the meeting by invitation, opened his remarks by thanking the Institute for its hospitality. The Dutch people would always be grateful for the great effort which Britain and the other Allies had made to liberate the Netherlands.

He thought that it might be of interest to members of the Institute to hear in what manner the question of war risk had been resolved in his country. In the Netherlands there had been introduced in 1939 what was called the ‘90% clause’, under which all sums assured were liable to be reduced to 90% of their values on the outbreak of war. The clause was not put into operation until 15 September 1944 when the supervisory board declared that there was an active state of war. The loss to start with had been so small that it had been possible during the first four years of the war to pay all claims in full. The system made no distinction between civilians and soldiers, and on the whole had not worked badly. The offices proposed to investigate its results to see whether it was possible to increase the amounts which had been paid in respect of claims under those policies to which the clause had been applied.

Mr J. Bacon, referring to Mr Rowell’s remarks, said that he would be interested to have the views of Mr Rowell and of the opener on future bonuses, and in particular on whether they would propose, under the new conditions, to adjust the premium rates in order to provide for a different rate of bonus from that which had been allowed for in the past. That was a problem which must have occurred to many actuaries in view of the desirability of maintaining equity between the new premium rates and the old.

With reference to the suggested loading for the unknown war risk, he wondered how that would be shown in the Board of Trade returns. Would it fall into the general loadings, or would it be applied to build up a contingency fund?

With regard to deferred annuities, the problem before the actuary dealing with private pension funds was perhaps a little different from that of the actuary dealing with life assurance schemes. So far as members on the active staff were concerned, there was generally a rate of withdrawal which was many times greater than the rate of mortality, and in fact a reduction in the rate of withdrawal might have a considerably greater effect than a reduction in the rate of mortality during active service. So far as the mortality of pensioners was concerned, there was again a certain offsetting factor. It was usual to provide for a return of the employee’s contributions in the event of death, possibly with interest, and perhaps also for a return of the employer’s contributions, with or without interest. In the event of death after entry upon pension there was a return of the difference between the amount of the accumulated contributions and the amount of the pension that had been drawn. In effect the pension might be payable for a minimum period of anything from three to eight years after entry upon pension, depending on
he exact nature of the return. That would go a considerable way towards mitigating
the effect of a reduction in pensioners' mortality.

The problem of sickness was essentially one for consulting actuaries or for the
Government Actuary. Sickness did not necessarily follow the same course as mortality,
and actuaries were generally dealing not with sickness at all, but with claims for sick
pay—an entirely different matter. He thought it was probable that there would be less
sickness in the future with a properly constituted health service, but there might for
a time be a considerable increase in sickness claims. It was also possible that the better
the health service the higher, at any rate temporarily, would be the rate of claim. It
had been pointed out that the ultimate effect might be that the claimants would remain
for a real cure to be effected instead of coming off the fund quickly and going back to
work, particularly if plenty of work was available at high rates of pay.

The opener had referred to the change in the value of money; that had a serious effect
on private pension funds where contributions were a percentage of salary and pensions
were based on some form of final salary. The increases of salary that had been made as
a result of depreciation in the value of money had thrown a heavy liability upon existing
pension funds in respect of past service. He had been interested to learn that, though
new salary scales might start from a higher level, yet so far as the rates of increase of
salary from age to age were concerned—and it was with those that actuaries were
primarily concerned in fixing rates of contribution—the old ratios still seemed to hold.

Mr W. Penman remarked that he held views both on many of the points that had
been raised in the discussion and also on some points that had not been raised, such as,
for example, the urgent necessity for some revision of the basis on which life assurance
was taxed. With regard to the question of covering war risk, he held very strongly that
policies should contain a clause relieving the office from responsibility if the life assured
were killed as a result of enemy action. That, to his mind, would not necessarily result,
if war were to break out on some future occasion, in the non-payment of claims due to
war, but it would relieve offices from a great danger, and would leave them in the
position that they would be free either to relax the clause or to enforce it according to
circumstances. He thought that that was most important.

He wished to refer to a very good paper by Dr T. B. Sprague entitled On the limita-
tion of risks which appeared in Vol. XIII of the Journal. In the course of that paper it
was in effect argued that no prudent person would cover a very large remote risk,
however remote it might be, because the profit would be negligible if the risk did not
materialize and, if the risk did materialize, the result would be crippling. He was inclined
to think that the author would have felt that his remarks would have applied still more
strongly if, in fact, no specific premium were charged for covering a risk which was
undoubtedly very large but which, it was hoped, was very remote.

Mr H. P. Clay commented on the basis of taxation of life offices, and referred to the
need for action, as well as inquiry, regarding the taxation of the recipient of an imme-
diate annuity. They had much to learn in that respect from their brethren in Canada.
The decline in the rate of interest and the changes in mortality would, he hopcd, lead
to a greater emphasis on whole-life assurances and annuities, and to the abatement of
the preponderant interest in Great Britain in endowment assurances. The return to
a larger whole-life assurance business combined with the issue of annuities with cash
options, instead of endowment assurances with annuity options, would make matters
easier for British actuaries besides being to the advantage of the lives assured.

Mr F. W. Bacon referred to the opener's suggestion that the phase of cheap money
had started with the War Loan conversion of 1932. If by 'cheap money' was meant
the rate of interest on gilt-edged securities, that was not really a new phenomenon; the
average rate on gilt-edged securities in the fifty years prior to the 1914–18 war had been
somewhat under 3%; and, looking at the curve of interest rates, the high interest rates
during that war and up to 1932 appeared to be abnormal rather than normal. It seemed
to him that what was new in the situation was the proportion of gilt-edged securities to
the total investments available, and it was that which had caused the rate of interest on
Government securities to have such a large effect on the return obtainable on other
types of investment.

The opener had referred to the possible necessity of increasing the volume of real
saving. Personally, he thought that the volume of real saving in the community was
the difference between the amount that the nation produced and the amount that it
consumed; in other words, it was the volume of real investment undertaken by public
authorities and by business men. The effect of a rise in the rate of interest was a decrease
in the volume of real investment and not an increase in it, because the business man had
to pay more for the money that he borrowed. Thus a rise in interest rates would tend
to restrict trade rather than to expand it, which could only be desirable when the
amount that the nation wanted to consume plus the amount that business men wanted
to invest was greater than the total which could be produced. In such circumstances,
if things were left to themselves, the rise in the rate of interest would reduce the
amount of new borrowings, and so help to prevent the inflationary situation that would
otherwise arise; but if, alternatively, the authorities took direct steps to control prices
and to allocate productive resources they could still keep down the rate of interest.

Looked at from that point of view, provided the authorities were willing to take those
steps—and it looked as if they were willing to do so—he could not see any near prospect
of a rise in interest rates. In fact, he would expect to see them go down rather than up.
Although that might possibly remove the opener's fear of a depreciation in the value of
securities, it did not hold out much hope of an increase in the yield obtainable on life
assurance funds.

Mr R. J. Kirton, in closing the discussion, said that several speakers had referred to
the question of mortality, and a common point had been the need as soon as possible
to have an up-to-date experience and close analysis and interpretation. On the question
of mortality, the stress and strain of modern life should be set against medical progress,
both in prevention and cure, and the increasing knowledge of hygiene. It was also
necessary to take account of the fact that the mortality tables compiled during the past
century had been based on lives who, if they had not come from the soil themselves,
had come from parents who had probably lived healthier lives than were lived at the
present time. He thought that there had already been an increase in cardio-vascular
diseases and that the onset of those diseases was taking place at ages ten or fifteen years
younger than formerly. He thought also that there had probably been an increase in
such troubles as duodenal ulcer. He could not accept without qualification the suggestion
that vitality would go on improving.

Another matter which had been touched on by several speakers, and quite rightly,
was the war condition. As the opener had said, a war condition was inevitable, whether
it was written on the policy or unwritten. The President of the Dutch Actuarial Society
had given a most interesting exposition of how the Netherlands had dealt with the
problem. Mr Jones had referred to the pooling arrangement in certain Continental
countries. One point, however, which had not been touched on was that if another war
did come great store would have to be placed on the protection of the very existence of
their institutions. Their assets might be destroyed and there might be little left, but the
duplication and retention of records should probably take prime place.

He wished to sketch very briefly the background of the post-war problems of the
actuary, as he saw them. In the past few years there would have been noticed what he
might call an increasing struggle between evil and good in a spiritual sense, and man's
progressive mastery over the material. That meant that an era was being entered upon
with great possibilities either of progress or of retrogression. There was very little in
the past to act as a guide for the future. As the opener had said, the world was changing
rapidly. The balance between politics and economics had altered; the international
balance of power, the financial centre of gravity, the trend of population—all those
things which had been taken for granted for a century or more—were changing in
direction, and he could only regard the new era as one of great uncertainty. Mr Rowell
had referred to 'the terrors with which the future was undoubtedly populated'.
Against that must be set the fact that actuaries were responsible for life funds, and the predominant feature of those funds was what he might call their inertia. Actuaries had to take a long view, because a long time was needed to give effect to any view which they might take. He deduced from that that they must try to protect their institutions by maintaining strength and balance. By strength he meant in regard to proper margins in premiums and in valuations of both assets and liabilities. By balance he meant trying to match assets to liabilities, thus protecting the funds to some extent against fluctuations in the gross rate of interest and in capital values, and trying to match life assurance with annuity business, thus forming some protection against fluctuation in mortality, although one or two speakers had rightly pointed out the severe limitations of that policy. Lastly, he thought it was very important to have a substantial proportion of with-profit business.

To sum up, the post-war problem of the actuary in an era of uncertainty, with wide possibilities of progress or the reverse, was to discharge his trust by maintaining the funds for which he was responsible in existence as long as possible if affairs went badly and by reaping a reasonable reward for the with-profit policyholders if, as all hoped, things went well.

The President (Mr R. C. Simmonds) said that he had wondered before the meeting how far the discussion would range. He felt that it had been neither as ready nor as deep as might have been reasonably expected. Many members, contemplating the depressing possibilities of the future, found perhaps that their thoughts were too full for sound or foam; in any case, he thought that the preponderant feature of the discussion had been the emphasis laid on indications that events might be very different from what they would like.

One of the speakers had suggested that improvement in mortality or its converse would affect both life policyholders and annuitants. Without being able to impugn the logic of that view, he tried to cling to a larger hope, inspired by the remembrance of coming back one bitter evening to his evacuated office and seeing on the snowy lawn in large letters (labouriously constructed by cans of hot water carried from the bathrooms) the motto 'A Happy New Year, but not to Annuitants'. But though actuaries might want mortality to go in the right direction for life policyholders and in the right way for annuitants, he had not seen any prospect yet that it would do so.

Speaking seriously, he repeated that the burden of the discussion had been an emphasis on the factors that might go wrong. What Mr Rowell had said was not, as it were, a piece of sugar that they were glad to get ' off the ration ', but a bitter pill skilfully and inimitably coated with sweetness. Mr Rowell indeed had pointed out in his own way that the proper working-out of premiums was the living practical problem that faced many actuaries in their daily experience. Sometimes, he (the President) was tempted to ask, in contemplating current rates, whether the answers were known to the people concerned before they did the arithmetic.

The real trouble about many present-day calculations was that there could not have been included in them margins such as those that experience had shown to be contained in calculations of earlier days. There had been rather a tendency to regard people who provided margins as though they were in some way pedestrian and old-fashioned. The actuaries of bygone years might have been lucky in the way in which events had happened, but, when the time came, the margins were there. In proposing a cordial vote of thanks to Mr Shrewsbury for opening the discussion he expressed the hope that actuaries would take serious heed of what Mr Shrewsbury and others had said by way of warning and that practical results would follow.

Mr A. H. Shrewsbury, in reply, said that by 'cheap money' he had not meant the mere arithmetical level of the interest return, but all that was implied in the way of Government control of the investment market. It was perfectly true that gilt-edged yields in the past had been low, but when they were low so also had been the rate of income tax, and he did not think that there had been before a net yield as low as it was at the present time.
Reference had been made to real saving. At the present time a large part of savings came from small savers. How would it be possible to get real capital unless the small savers, who were also the small consumers, refrained from consuming, and were they likely to refrain from consuming if they came to the conclusion that it was not worth while to save because the return on savings was too small to matter? What was the Government going to do if it could not get enough of the current production saved? Would it not have to do something to make saving and refraining from consumption more attractive? Admittedly control was the other weapon, but would the country stand so many detailed controls for ever? The matter was very complicated, and it was impossible to foresee what would happen, but there did seem a possibility that inflation on the one hand and the impatience of the people with too many controls on the other might force the Government to depart from the process of continually lowering money rates and to allow them to fluctuate to some extent.