

THE INSTITUTE OF ACTUARIES

JIA 72 (1946) 0001-0007

ADDRESS

BY THE PRESIDENT, HENRY EDWARD MELVILLE

[Delivered 15 October 1943]

IN considering the subject of my Address to you this evening my thoughts have naturally turned to the problems resulting from the War, and I propose later on to refer to some of these. But before doing so it is, I think, worth while to look back and to review some of the achievements we can claim during the present century. I choose this period because it is one during which some most valuable work has been done by the Institute, and also because it is nearly that of my own membership of the Institute.

I remember very well attending one wet autumn evening a class which met in the room which is now the Library. I had found it difficult to get away from the office and had arrived rather late; the room was full and all seats occupied. There was insufficient accommodation for coats and hats, and I stood through the meeting wearing a wet overcoat and holding hat and books in my hand. In such circumstances even the most inspiring tutor is likely to find his efforts defeated, and I do not think that I got much benefit from that meeting.

The tutors, then as now, were some of the ablest of the younger actuaries, but the tuition covered only Parts I and II of the old Syllabus, and for later Parts a student had to make his own arrangements for private tuition.

How much we have done for the students since then! To-day, in conjunction with the Faculty, we have an Actuarial Tuition Service which on the outbreak of War was providing correspondence courses in all branches of the Syllabus to students in all parts of the world, and oral tuition in London and certain other important centres at home. Students attending classes worked in reasonable comfort, and a Reading Room was available at the Institute for their special use.

Moreover, for many years now we have had an active Students' Society in London, with sister Societies in Edinburgh and some large provincial towns. These Societies have afforded a most valuable training ground to both students and Junior Fellows, and it is largely to their work that I attribute the high standard of debate to which we have become accustomed at our Sessional Meetings. Our own Students' Society not only issues a Journal, but has provided for the use of students a number of special publications in the 'Consolidation of Reading' series dealing with subjects arising in the later Parts of the Syllabus, and has issued a series of reprints of various papers not readily accessible to students.

But with these improved facilities for study there has been little improvement in the time taken to complete the course successfully. Many students take far too long, and many fall by the way. It is true that the Syllabus has been changed and in some ways its scope has been widened, but I sometimes wonder whether the distractions of modern life, which were not available when I was young, may not account for some of the failures. But, whatever the cause may be, so long as this feature remains we cannot be content with the results of our work for students.

Samuel Johnson is reported to have said 'Genius is nothing more than knowing the use of tools'. We shall not all subscribe to that dictum, but it is

true that the best work can only be done with good tools. Looking back over the last 40 years I assert with confidence that our tools have been greatly improved during that time and are undergoing continuous improvement. By 'tools' I mean of course our Mortality Tables, and not the formulae to which these Tables are applied.

The experience of the British Offices 1863-1893 was published during 1903 and 1904, and the younger actuaries noted with interest not only the ingenious graduations by Hardy, but also the meticulous care taken to see that ages and durations were as exact as possible. The O^M group of Tables (and indeed the O^{NM}) were generally accepted as standard Tables, and quickly superseded the older H^M Tables. But before long the words 'spurious selection' were heard, and it was gradually realized that the golden idol had feet of clay. In fact the heterogeneity of the underlying data introduced errors and distortions in the final Tables which far outweighed in importance any errors which could have arisen from rougher methods of approximating to ages and durations than those actually used. The Tables did not in fact represent current mortality rates, and this became increasingly evident when note was taken of the experience of individual Assurance Offices and of the Population Statistics. The Mortality Rates based on the 1911 Census returns were at most ages—and those the most important—lighter than those shown by the O^M Table.

Shortly after the last War the Institute and the Faculty decided to make a further examination of the mortality of Assured Lives and Annuitants, and with the co-operation of nearly every British Insurance Office a large amount of up-to-date statistics was secured and arrangements were made for the furnishing of further statistics year by year so that a continuous investigation might be made.

In March 1923 the first Report of the Joint Committee of the Institute and the Faculty on the Mortality of Annuitants over the years 1900-1920 was published, followed in December 1923 by a Report by the Government Actuary on the Mortality of Government Annuitants. Each of these investigations showed not only that the old O^{am} and O^{af} Tables based on the 1863-1893 experience were obsolete, but that the mortality of annuitants was steadily becoming lighter, and it was evident that for financial transactions it was necessary to make allowance for this fact. In the result the monetary Tables eventually published were based in each case on a forecast of future mortality. No information is yet available as to the accuracy of the forecast in the case of the Government experience, but in the case of the British Offices' experience subsequent investigations have shown that the forecast was remarkably good.

As regards Assured Lives, Tables based on the experience of the years 1924-1929 were published in July 1933, only $3\frac{1}{2}$ years after the close of the period under review. This was made possible by the decision to apply the census method to Life Office statistics, it being felt that any slight loss of accuracy as compared with an individual method would be far outweighed by the reduction in labour and the speeding up of the results.

The A 1924-29 Table is now in general use and has largely superseded the older Tables, but the investigations have gone on and we have learned that there may be wide variations between the mortality experience of one Office, or group of Offices, and that of another, just as we know that there is a wide difference between the experience of one year and another. Moreover, the

records are continuous, and it is interesting to note that at nearly every age and duration the combined mortality for the years 1924-1938 was lighter than that shown by the A 1924-29 Table.

Our tools and our knowledge of them are indeed far better than they were; and with improved knowledge of our tools have come improved methods of using them.

We no longer think in terms of three places of decimals in a net premium based perhaps on a Table that is already out of date, but we confidently use broad approximations based on a Table whose limitations are known to us. For example, during the period of which I am speaking, we have seen the introduction of Lidstone's Z method for the Valuation of Endowment Assurances, in itself a great simplification without appreciable loss of accuracy. At a later date we have seen a further simplification in Elderton's method of valuation by an average maturity age, a method the use of which is probably increasing.

And here let me give a warning. Before using any approximate method we ought to have some knowledge not only of the direction of the error involved but also of its extent. We should also be sure that our approximate method will give us the same broad insight into the working of our business and will enable us to make the same general analysis as would a valuation of a more detailed nature. If we are satisfied on these points we can use an approximate method with a confidence which would not otherwise be justified.

And now I turn to the work of the actuary. Most of our members are engaged in the service of our great Life Assurance Companies, and while the number of these Companies has been diminished by amalgamation, the extent of their activities has greatly increased. New forms of contract, new combinations of benefits, have been introduced, bringing their own actuarial problems, while questions of administration and the investment of the greatly increased assurance funds call for unremitting attention. Many actuaries have shown that their training gives them a special aptitude to deal with matters of Administration and Finance, and in consequence there is a growing tendency on the part of Boards of Directors to make use of the actuary in these matters in addition to looking to him for advice on purely technical matters. The actuarial profession has always been well represented on the Investment Protection Committee of the British Insurance Association, which was created in 1933, and it is an interesting and significant fact that four out of its five Chairmen have been actuaries.

Another sphere in which the work of the actuary is most important is Government Service. We have seen a great expansion of Social Services during the past 30 years, and it was a fortunate thing for the country that the late Sir Alfred Watson found it possible to accept the post of Actuary to the National Health Insurance Commission on its establishment in 1912. A few years afterwards he was appointed to the newly created post of Government Actuary where his great experience of social insurance, his sound judgment and actuarial ability found full scope. Under his control the Government Actuary's Department became of ever-growing importance, and it is no secret that in addition to advising our own Ministers and Government Departments on statistical and actuarial matters of all kinds, the Government Actuary and his staff have often been consulted by the Governments of other parts of the Empire. The traditions established by Sir Alfred Watson are ably maintained by the present Government Actuary, Sir George Epps, and the

Department normally employs about 30 members of the Institute and Faculty, while some 45 actuaries hold permanent appointments with other Departments at home and in other parts of the Empire to deal with their special problems.

The outbreak of war called most of our younger members to new and strange tasks—over 400 of them are to-day serving in the armed forces—but it also presented opportunities of special service to a few of our members, and it is gratifying to be able to record that in three of the important Wartime Departments, namely War Transport, Food, and Supply, the Director of Statistics is in each case a Fellow of this Institute.

Within the last year an increased demand for men with some statistical knowledge has led to the recognition by the Ministry of Labour of the fact that an actuarial training fits a man to undertake many specialized tasks in War Service outside the fighting ranks, and there has been a welcome increase in the number of our younger members temporarily employed on statistical and research work by both Service and other Government Departments.

The work of the consulting actuary has grown steadily with the growth of Social Insurance and the recognition by employers of labour of their obligations to make some provision for employees and for their dependents in addition to that afforded by the National Insurance schemes. And just as in Life Assurance financial and actuarial problems must be considered in relation to each other, so in general consulting work the actuary is becoming more and more regarded as a financial adviser.

In the wider fields of Industry, Commerce and Finance, the actuary has so far found too little scope for his abilities. In the few exceptional cases where one of our members has established a leading position outside the Insurance world, this has, I think, been due not so much to his technical actuarial knowledge as to the fact that his actuarial training has given him an alert mind which has fitted him to grapple with the problems of his business more readily and more effectively than others who have not undergone the mental discipline afforded by our curriculum.

The general widening of the activities of the actuary has occasionally made it necessary for the Council to consider questions of professional conduct, and their views on certain aspects of this matter have been published in the Year Book for the guidance of our members. It is worth while asking ourselves why these rulings have been necessary. Our profession has been given a privileged position under the Royal Charter granted to the Institute and has important responsibilities under Insurance Legislation in this country and in other parts of the Empire. In all circumstances the actuary in all his activities has a primary obligation to consider the public interest, and it is for this reason, and for this reason only, that the Council have laid down certain rules of professional conduct. The observance of these rules, both in the letter and in the spirit, is incumbent on us all and will help to maintain that tradition of integrity and service of which we are so proud.

With the increase in our work our membership has also expanded, and it has been asked in the past, and will I am sure be asked again, whether something cannot be done to extend still further the sphere of our activities and afford new opportunities to our younger men. As in every other profession it is the standard of a man's work and not his professional degree that advances his fortunes, and while I recognize that some of our younger members have not the same opportunities as others of gaining experience, I believe that a

man who has obtained the Fellowship and who has initiative, personality and an aptitude for work, will make his own opportunities and reap the reward. One of the best ways in which a young actuary can make himself known is by taking an active part in the life of the Institute, and if a man is not willing or not able to do this he must not complain if fortune appears to pass him by. I am sure that the senior members are all fully alive to the importance of encouraging talent and of training our young men for their future responsibilities, and if any man wishes to undertake some research work or to break new ground, he will receive every encouragement from the Council.

But probably what is exercising the minds of our younger members to-day is the thought that the interruption of their work and studies caused by the War may prejudice their future careers. Such a thought is only natural, and we owe a duty to these men to see that they are given every opportunity to regain lost ground. Inequalities there must be. Some men will be away longer than others, but all must suffer in some degree, and particularly those who had not achieved the Fellowship when the demands of National Service called them to other, more arduous, duties.

The Institute can do a great deal to assist these men by adjusting the arrangements for tuition and examinations, and the whole problem is already engaging the attention of the Council. If however we expect candidates to rely only on spare-time study—as most have had to do in the past—I feel that the burden will be too heavy. I cordially endorse the suggestion made by my immediate predecessors in this Chair that the great Assurance Companies and others by whom our members are employed should give special leave of absence and so afford an opportunity for concentrated study during the day. This I believe is one of the best means of helping men to recover lost ground, and though I realize that there are difficulties in the suggestion, I am convinced that with goodwill they can be overcome, especially if it is found possible to organize and supervise day-time study. I believe that it is in the interests of both the employers and the men that some such facilities should be given, for without them we may find in a few years' time that there is a dearth of young actuaries. The War must in any event make gaps, and if these are to be filled it can only be by training other and younger men.

This problem of education in all its aspects is perhaps the most important which faces us as an Institute, and we must not only review our curriculum and examination arrangements but must coordinate these with whatever national scheme of education may develop after the War. Indications already exist in the Government White Paper and in the Norwood Report of the lines on which some of the problems will be approached, and if, as seems probable, part-time education at least will be required of all young people up to the age of 18, combined with some form of National Service for a period thereafter, this may well affect not only our tuition arrangements but also the present methods of recruitment to our profession. But we shall not regret this if it means that those who commence the course of actuarial study do so with a better equipment than is often provided by the present educational system.

There are however other problems which call for our consideration. I think we can be confident that our ordinary Mortality Tables—what I have called our tools—will be kept up to date, and I see no reason why after the War we should not find that the pre-war trend of mortality rates at the more important ages is being maintained, and in due course even extended to the older ages where, so far, we have seen little improvement.

I hope too that after the War it will be possible to examine the question of the mortality of sub-standard lives. We have the advantage of having seen the interesting work done on this subject by actuaries in America and in Scandinavia, and we shall profit by their experience even if we decide, as perhaps we may, not to follow their particular methods. The whole subject is a very difficult one, and is not made any less so by the fact that medical knowledge and medical standards of selection have been and are still changing.

We have also to consider the new situation created by the fall in interest rates, which affects adversely all insurance funds. Here we are faced with a control which is likely to remain in operation for a long time, and with taxation which must remain heavy for years to come. Net interest yields must in my view remain low, and it is not surprising that actuaries generally are strengthening their reserves by reducing the rate of interest used in their valuations. Even a $2\frac{1}{2}\%$ rate such as is becoming general can be justified only by the fact that old investments are producing a higher rate than this and the expectation that before very long it will be possible to invest new money on somewhat more remunerative terms than can at present be obtained; and it seems anomalous to value even at $2\frac{1}{2}\%$ the new Non-Profit business, the premiums for which are often calculated at a lower rate.

The reduction in interest earnings also raises the question of the method of distribution of profits on With Profit policies. A method which was equitable when interest rates were relatively high may no longer be appropriate to-day, and we may well have to consider new methods of distribution if justice is to be done between one class of policyholder and another.

Superannuation Funds too have their own special problems. The fall in interest earnings affects them, though not to the same extent as a Life Office for they escape the burden of Income Tax; but on the other hand they do not have the buffer of With Profit business and cannot protect their position by withholding or reducing bonuses to their members.

Moreover, in so far as their benefits are related to wages and salaries, new burdens may be thrown on them by the general rise in wages which to a large extent is likely to remain. It seems probable that a period of strain and readjustment will be experienced, but any general increase in State pensions such as is contemplated should afford an opportunity to make any necessary revision of Pension Fund benefits without hardship or injustice to any of the contributors.

But we are not concerned only with the solvency of the various insurance funds we are engaged in administering. We are also concerned with the purchasing power in goods and services of the monetary benefits provided. It is a poor reward for thrift to find that provision made for one's own old age or for one's dependents has become inadequate through the depreciation of the currency in which the provision was made. Already in our lifetime we have seen a considerable depreciation in the purchasing power of the pound, and while at present inflation is kept within bounds, there is a real risk that the process may become accentuated in the post-war period. Some further depreciation may be inevitable, but it is most important that it should be carefully controlled and limited as far as possible. Whether this can be achieved must depend to a large extent on the way in which social economic and financial problems are handled after the War.

And this leads me to ask what we can do towards shaping the policies on which so much depends. As an Institute we can do little, for such subjects

are outside our purview as a professional and scientific body: but as individuals we can I think do something. All those who have read the discussion of the Beveridge Report which took place in this Hall a few months ago must have realized that many of our members have given a great deal of thought to these questions and are well qualified to express their views.

We are not only a body of men who, through their training, have acquired a wide knowledge of affairs and the habit of assessing facts and opinions dispassionately, but we are, I believe, what is equally important, men of goodwill anxious to make our contribution to the well-being of the community. We have evidence of this in the loyal and unstinting service given to the Institute by so many of our members in the spirit of those words of Bacon chosen so happily by our founders as the motto of the Institute.

Can we not—ought we not as individuals to take a greater share in the public life of the country, and endeavour ourselves to influence those policies which for good or ill must affect not only those special interests with which we as actuaries are concerned, but the wider interests of the whole community? My answer to this question is that just as our education—and here I speak not merely of class work, but also of the wider knowledge and experience gained in after years—just as our education is the liberal education which fits a man to be a citizen of a free country, to assess the values of various things or ways of life for which men are striving, to choose deliberately between one course and another; so it is our duty to make our contribution in whatever way is open to us to the discussion of those many difficult problems which lie ahead. And in doing so we shall not, I think, forget that there is something even more important than security. It is Happiness.

Before delivering his Address, the President referred to the deaths of a number of members of the Institute, most of them while on active service. With reference to the loss which the Institute had sustained by the death of Charles Clifford Hall Drake, the President said:

‘Drake was, I am sure, well known to you all. He was in the service of the Prudential and did not become a Fellow until 1919, his studies having been interrupted by the last war, during which he served in the Royal Navy, subsequently reaching the rank of Paymaster Commander. On returning to civil life his abilities were soon recognized, and in 1930 he was appointed Life Manager and Actuary for Canada with the task of developing his Company’s activities in the Dominion. In 1935 he was appointed Joint Actuary to his Company. A year earlier he had become a member of the Council, on which he was serving at the time of his death. It was only a few months ago that he retired from business on reaching the age of 60, and his sudden death came as a shock to his many friends. He was a valued member of the Council and his genial presence and helpful contributions to our discussions will be sadly missed.’