

**GUEST EDITORIAL**

BY J. J. McCUTCHEON

It is a privilege to have been given the opportunity to write this editorial, in which I have brought together a number of miscellaneous thoughts. I hope that most readers will find something of interest in what I have written. Throughout, unless it is otherwise specifically stated, my references to actuaries and to the profession relate to the United Kingdom.

When I left school (in the late 1950s), I knew nothing about the work of our profession. I was vaguely aware that there were people called ‘actuaries’ who were employed by insurance companies, but that was the extent of my knowledge — and it would certainly have been disingenuous of me, at that time, to have claimed any awareness of the activities of this somewhat mysterious group of people. Little did I then realise that, in the course of time, I was to join their number!

Fifty years ago my ignorance of the actuarial profession was shared by virtually the entire population — and even in much more recent times our light remained fairly well hidden under a bushel. Today, however, a significant number of people have at least some idea of what we do — even if this is revealed only by a flippant comment along the lines of: “Actuaries — are they not just high-class bookmakers?”

The much greater size of our profession, the wider scope of its activities, extensive press coverage of major problems in the life insurance and pensions industries, and the availability of low-cost instant worldwide communications are just some of the factors which contribute to the higher public profile we enjoy — if that, indeed, is the word — at the present time.

Since my father was a doctor who worked for the British Medical Association, it is, perhaps, not too surprising that I first encountered a reference to actuaries in the Report of the Royal Commission on Doctors’ and Dentists’ Remuneration (HMSO, London, February 1960). In the course of its inquiry, the Commission invited members of several professions (together with university teachers and graduates in industry) to participate in a survey relating to remuneration. One of the nine members of the Commission was an eminent actuary, J. H. Gunlake (subsequently President of the Institute), who must surely have approved of the fact that the members of his own profession produced the highest response rate (92.1 per cent) of the various groups surveyed.

In its Report the Commission presented various statistics, derived from the surveys which it had conducted. One particular graph plotted, for each group surveyed, the upper quartile of annual earnings as a function of age.

To the surprise of many, at the highest working ages the greatest upper quartile was not that for medical consultants.

Among those whose eye had been caught by this graph was the journalist Anthony Sampson, then on leave from *The Observer* and writing the book *Anatomy of Britain*, which was published — to considerable acclaim — in 1962. Therein Sampson wrote:

“Actuaries are specialised mathematicians who, after a course which may take six years or more, are versed in the intricate statistics of men’s lives on which life insurance depends, and prepare the expectation-of-life tables. Their training is narrow and bleak: most of it is done by correspondence, with a few lectures and classes, and there is a large proportion of failures. Only one in four of actuaries are graduates. Life insurance draws its meritocracy from a self-made, specialised world from outside the universities ... The actuaries are one of the highest-paid professions ...”

These observations reflected a somewhat limited view of the profession — and while some of the comments may have been true 40 years ago (or even more recently), I am pleased that several are no longer valid. In any event, it was certainly fortunate that I had not read Sampson’s book at the time when I was considering a number of possible careers, since his description of our training as ‘narrow and bleak’ might well have diverted me permanently from actuarial paths.

In my penultimate year as an undergraduate, I sought guidance from the Appointments Board (the somewhat grand name then given to the university’s careers advisory service). A kindly academic, with appropriate City contacts, also offered to arrange a temporary summer job which would have provided me with at least a glimpse of actuaries at work. I duly returned to the Appointments Board to discuss this possibility. When, however, I pointed out to the man from the Board that the alternative was a six-week camping holiday touring around Europe, he simply asked: “How often in future will you again be able to have such a lengthy holiday?” — making it clear that, in his view, there was no real choice in the matter. I have never regretted following his advice, which meant, however, that another year was to elapse before I again seriously considered an actuarial career.

When, eventually, I did seek further career guidance, I was fortunate indeed to be given advice for which I have always been immensely grateful. The provider of this advice was John Young, subsequently a distinguished President of the Faculty, to whom my indebtedness remains huge to this day. I was initially sceptical, but in a very short space of time the enthusiasm with which Mr Young described the role of the actuary dispelled my doubts completely. I still remember, among other things, how he assured me that I would find the work, not only intellectually satisfying, but also ‘exciting’ and ‘challenging’. How right he was!

I became a Fellow of the Faculty in 1965 — at a time when graduates

were still very much a minority in the profession, and the employment profile of actuaries had a very different shape from its present form. It is, perhaps, now difficult to believe that, in the 1960s, the U.K. had fewer than 100 consulting actuaries, and that the majority of Fellows then worked for insurance companies. Contrast that with the situation today, when, of our active Fellows, nearly one half work as consultants and those employed by insurance companies comprise less than one third.

In 1965, of course, I had little idea as to how my subsequent career might unfold, and no inkling whatsoever about the extent to which, in the coming years, our professional world was to be turned topsy-turvy. That this was so was due no doubt — at least in part — to inexperience and the ignorance of youth, but I still occasionally wonder whether or not many of my more senior colleagues at that time foresaw just how their lives would change. Would many even have predicted, with any degree of accuracy, the growth in the size of the profession in the years ahead?

The 62 students who completed the examinations of the Faculty or the Institute in 1965 were those who took the total number of Fellows for the two bodies above 1,500 for the first time. Today the Faculty and the Institute between them admit around 400 new Fellows each year, and have more than 7,500 Fellows in total. The increased size of the profession is reflected in the much greater number of distinct fields in which actuaries now work. (Sampson's use of the word 'narrow' may have been fair comment in 1962, but such an observation would surely be inappropriate today.) The size of the profession is still increasing — currently at a rate of around 4% per annum. It is pertinent to wonder for how long the present growth rate can be happily sustained.

All but one of the 62 qualifiers in 1965 were male. At that time there were very few female Fellows indeed — around 15 in total. Others will have shared my pleasure in observing, over the past 20 years or so, the growing number of young women attracted to actuarial work. Long may this felicitous trend continue. Today, around 15% of Fellows and 33% of students are female. I hope that these figures will increase significantly in due course.

Forty years ago the level of mathematical knowledge required to pass our professional examinations was relatively low — certainly in comparison with the position in many other countries in continental Europe or with an honours degree course in mathematics. There was, I feel, at that time (and for a number of subsequent years), a reluctance among many actuaries — at least in the U.K. — to get to grips with the more advanced mathematics then available, which might well have provided the key to progress in a number of areas of our work. In my view, this reluctance was one of the factors which contributed to the profession losing some of the prestige which it had previously enjoyed — for example in the field of investment. Whether or not the lost ground will ever be regained remains to be seen.

In the 1960s the odd academic occasionally assisted the profession by

acting as an examiner for its purely mathematical papers. That, however, was just about the full extent of the involvement of universities with actuarial matters. After the University of Edinburgh withdrew its Diploma in Actuarial Mathematics — awarded first in 1920, and for the last time in 1964 — for many years the only available exemption from the ‘non-mathematical’ parts of the professional examinations was that from the Institute’s paper on mortality investigations, which could be achieved by students at the London School of Economics. Nowadays, of course, the situation is very different, and many students benefit from the much greater availability of exemptions. The profession, too, has gained from the changed position, which — at a time when there is ever-increasing competition to recruit the most able graduates — has increased the attractiveness of an actuarial career.

There is, nevertheless, a need for caution. Until now, by liaising with universities in their appointment of external examiners, the profession has ensured that the wider availability of exemptions has in no way compromised its standards. It is possible that, in future, more universities may seek to provide courses which offer the possibility of exemptions from our professional examinations. If this turns out to be the case, then vigilance will be essential if our standards are to be maintained.

In my view the greatest benefit which universities have given the profession has been leadership in its research activities. I think that it true to say that, 40 years ago, in many actuaries there lurked a degree of suspicion about the value of research — certainly in relation to purely theoretical work. Of course, not everyone was sceptical — a few forward-looking individuals were encouraging — but it was then difficult to be allowed the time which all research requires or to gain the financial support which is often needed. Today, fortunately, the situation is much improved.

Most actuarial work is of a highly practical nature. This may explain why, in some quarters, it remains fashionable to disparage purely theoretical studies. Having, at one stage of my career, abandoned the business world to carry out research in pure mathematics, I take issue strongly with those who say that a piece of work with no immediately obvious practical application is necessarily of little value. Some may disagree with the assertion that, unless there is an ethical objection to a particular study, the pursuit of knowledge is in itself a worthwhile activity, but no one can ever be certain that work which seems initially to be of only theoretical interest will not, at some future time, have an important practical application. In order to illustrate this point, I recall again some historical facts which have an indirect link to our profession.

The story of the Bletchley Park codebreakers, classified as highly secret for many years, has now been in the public domain for some considerable time. Less well known, perhaps, is the fact that their success depended

crucially on the earlier achievements of a brilliant team of Polish cryptographers, which had first broken the German Enigma codes in the 1930s. (The Poles passed the results of their work to the British and the French during a meeting at Pyry, outside Warsaw, in July 1939.)

The leader of the Polish cryptographers was Marian Rejewski, a young graduate of the University of Poznań. In *Enigma*, by Wladyslaw Kozacuk (see below), there is a detailed account by Rejewski of how the group theory, which he and his colleagues had studied as undergraduates, provided the key to their sensational breakthrough. How fortunate it was that those young Poles had paid such careful attention to their first lectures in abstract algebra!

By returning to Poland in the summer of 1930 and subsequently turning his attention to cryptography, Rejewski abandoned, in midstream, a two-year course in actuarial mathematics at the University of Göttingen. With the benefit of hindsight, we may, for once, not regret the loss to the profession of a brilliant young mind.

In my Presidential Address to the Faculty in 1992, after recalling the above facts, I expressed appreciation for the support and encouragement which academic actuaries then received from most members of the profession. Over the past decade, I have been further encouraged by an increasing recognition that, if the profession is to make progress in dealing with the considerable challenges which it now faces, research must be given a high priority, and the best possible use made of the skills and specialised knowledge of those actuaries who work in universities. Close cooperation between actuaries who work in the business world and those who carry out research in an academic environment can only be of benefit to the profession as a whole.

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