PROCEEDINGS

BIRMINGHAM 1ST UK ACTUARIAL CONVENTION 85

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FOREWORD

The first actuarial convention of the Institute of Actuaries, on the theme **The Actuarial Management of a Life Office**, was held at the Albany Hotel, Birmingham on 11-13 September 1985. 335 actuaries attended, including Professor P.G. Moore, President of the Institute and Mr J.M. Macharg, President of the Faculty of Actuaries.

The convention was planned to complement the normal programme of Sessional Meetings and meetings of other Actuarial Societies and to enable actuaries from all over the UK and Ireland to meet and discuss topics of mutual interest.

This final record brings together the papers or presentations for the 24 sessions, involving 41 speakers, each being followed by a brief report of the discussion prepared by a rapporteur. So far as speakers are concerned, if written papers were issued these have normally been reproduced with minimal editing. In some cases (noted in the text) space precluded reproduction of the full paper: the version then included here was prepared by the author(s), from whom the full paper may be available. Where no written paper was circulated, normally an edited version of the speaker's remarks is printed, but occasionally the rapporteur's summary covers the opener's presentation also. In all cases the rapporteur's summary is based on his personal impressions: there was no 'official' record of the discussions.

In these Proceedings the order of the papers has been amended, to group together papers with a common theme. The actual timetable at Birmingham is recorded at the end.

With such a large number of speakers and rapporteurs participating, it proved impracticable to circulate proofs in advance of printing, and the editor accepts responsibility for the final contents of the Proceedings.

The Organising Committee gladly records its debt of gratitude to all speakers, chairmen and rapporteurs for the time and commitment so freely given. The contributions of the guest speakers Messrs A.J. Cadge, B.C. Crittenden, J.D.F. Dickson FCA, M. MacFarlane FCA and A. Turner ACMA were particularly welcome. The Organising Committee also takes this opportunity of thanking all the many other actuaries, too numerous to mention, who contributed in other, but no less important ways, to the successful outcome of this initiative.

OPENING SPEECH

P.G. Moore - President

I should like to begin by extending a warm welcome to all delegates, including those from the Faculty.

Today marks the first residential convention of this kind that the Institute has stage-managed, having the twin objectives :

(i) to bring together actuaries from all over the country, something that nowadays has become more difficult with the dispersal policy of the insurance industry, and

(ii) to provide a substantive forum at which subjects of professional interest can be discussed both on a broader basis and in a less formal way than is possible at the normal Sessional Meetings.

The excellent response that we have received - which in the event greatly exceeded the estimates made from our limited test marketing - has been gratifying and suggests that we are tackling a felt need of members. We are naturally sorry that, as a consequence, we have not been able to accommodate everybody who applied, but we have done our best to be as fair as possible in the distribution of places, particularly as between organisations. Tentative plans are being made for a further convention of this kind, centred around a different theme, in 1987, but no firm decision will be made concerning this either in terms of content or size of convention until the lessons of this initial convention have been studied and absorbed.

It is not my purpose this morning to anticipate the numerous sessions whose blandishments will entice your attendance over the next two days, but I will briefly mention a number of current areas of concern that seem to me to have wide importance to the profession generally.

The last year has seen one major change in the Life Assurance industry, namely the removal of tax relief on annual premiums. Contrary to many fears expressed at the time this removal did not result in the bottom falling out of the market for life assurance and, whilst there was the inevitable initial dip, the market has, to a considerable extent, sprung back. For example, whilst the percentage of new mortgages covered by endowment policies has fallen, it is still substantially in excess of the pre-MIRAS position. Conventional life assurance has great strengths both for the office and for the policyholder and is still a dominant part of the insurance industry. The United States has, though, both a relatively bigger market for pure protection policies than the UK and also a more marked division between insurance and investment, which in the UK market is more clouded. Perhaps there are some marketing lessons for the industry that need further exploration, after all many insurance companies have excellent investment records but these basic investment skills are only rarely stressed or demonstrated.

The latter point leads naturally to the issue of self-regulation. The DTI issued at the end of July a consultative document (Green Paper) on the 'Treatment of Members of Certain Professions' in relation to the White Paper 'Financial Services in the United Kingdom' (Cmnd 9432). The particular point at issue is whether a profession, such as the actuarial profession, should be able to obtain for its members blanket permission to carry out investment work under the rules of the profession as opposed to being required to obtain direct authorisation or, alternatively, becoming a member of a self-regulating organisation (SRO). To require all members who give investment advice as a subsidiary part of their professional work to seek authorisation under the main regime would place an unnecessary and undesirable strain on the regulating organisation of the main regime. It would also reduce the ability of the actuary to supply consistent and complete actuarial advice. Surely the limits to the work that an actuary can undertake within the benefit of the exemption should ideally be set by the governing body of the profession, and any breaches should likewise be dealt with by the profession under its disciplinary procedures.

The White Paper suggested that such exemption should only be granted if the Secretary of State is satisfied that the professional body in question maintains and enforces professional standards of conduct offering <u>equivalent</u> safeguards for the investor. The Green Paper, however, replaces the word <u>'equivalent'</u> by <u>'similar'</u> and this change is reflected at various points in the Green Paper. Such a move seems to us to negate the notion of professional exemption which, by the very nature of professionalism, would be of a different form from a legislative regime. In our case an integral part of many actuaries' work is concerned with the giving of investment advice to institutional clients so that the principles of investment have long been fundamental to the profession, indeed they were specifically introduced into the examination syllabus in 1954. Since 1963 we have also given a certificate in Finance and Investment to those who pass the appropriate examination, and believe that we were the first body in England to provide such a qualification in this area of expertise.

As a professional body operating within the terms of our Royal Charter, the Institute's Bye-Laws, including their disciplinary arrangements and any amendments to them, are necessarily approved by the Privy Council. These Bye-Laws, to which all members are subject, are designed, inter-alia, to protect not only investors, but all clients. Furthermore, the Institute's Code of Professional Conduct and Practice strengthens the protection given to all clients by stating that members with insufficient relevant experience should not act, except in co-operation with, or with the guidance of, an experienced actuary. This Code of Conduct is reinforced by further guidance given from time to time by the profession to its members on specific matters; members are expected to follow the guidance or show reason for deviating from it.

Whilst many members of the profession are not involved in giving investment advice beyond that which forms a component part of general actuarial advice, a significant number of actuaries are involved in occupations in which the giving of investment advice forms a substantial part of their responsibilities. Examples are stockbroking, management of institutional investment portfolios and insurance broking in various forms. It is assumed that those members who are involved in investment as a day-to-day activity of these kinds will be beyond the scope of any exemption applying to the profession and will seek authority from a relevant SRO.

We have sent in our views along these general lines, and also made some more detailed comments on individual paragraphs in the Green Paper, offering at the same time to give oral evidence if that were considered helpful.

The recent European Directives concerning the solvency of insurance companies have given us some concern, since the tentative proposals appear to conflict with the traditional UK approach to life office solvency. If implemented, fundamental changes in approach and in the role of the actuary would be involved. A Consultative Group of the European Community on insurance matters exists which has a solvency margins sub-committee. Following the recent papers on the subject at the Sydney Congress, as well as at the Faculty and the Institute, a fresh meeting of this sub-committee has been planned to consider the way forward. It is hoped that a technical study on the actuarial aspects of Solvency Margins in the EC countries can be produced for consideration by the Comité Européen des Assurances.

I turn next to the Government's Green Paper on the reform of Social Security and, in particular, the proposals relating to the Provision for Retirement. We have just sent to the Department of Health and Social Security the joint views of the Institute and Faculty. The submission is lengthy and I can therefore only pick out this morning some of the more salient features.

First we comment on the timetable and suggest that the April 1987 starting date is impracticable. Moreover the proposal to phase the changes over three years aggravates, rather than alleviates, the problem.

Secondly, we make a number of comments concerning personal pensions: the costly administrative and selling costs, the complicated rules for death benefits before retirement which we believe could be simplified, the undesirable and damaging consequences of the proposal for unisex annuities, and the difficulties of formally protecting individuals against undue concentration of investment or high risk forms of investment.

Thirdly, we point out that the abandonment of a financially neutral rebate in national insurance contributions will impel actuaries to advise employers with contracted out schemes that they should, on financial grounds, revert older employees to full SERPS participation.

Fourthly, whilst we welcome the flexibility which would be associated with a retirement decade built around a pivotal age, the approach seems to us to demand a common structure for men and women in the State scheme.

Fifthly, we make some comments on simplicity. It seems to us vital that determined steps are taken not only to simplify administrative procedures, but also to avoid the creation of additional complexities. A radical change in the approach of the Superannuation Funds Office is essential, and we have recommended a single co-ordinated system which reconciles the different objectives of the DHSS and the Treasury.

Finally, and most importantly, we stress that in pensions matters it is vital that whatever structure is created should be capable of operating satisfactorily with a good prospect of enduring through the lifetime not just of one but of a number of Governments. Any assurance that this is so seems sadly lacking at present.

The recent **Pinder v Friends' Provident Life** case was, in its outcome, very helpful to the profession not just for the particular individual situation with which it was concerned, but for the principle of the actuarial collective that it upheld. Without being, I hope, invidious I would like to congratulate Bernard Benjamin on the extremely helpful contribution he made to the case and the obvious respect that he won from the judge concerned for his analysis of the problem and the principles involved. What Bernard said could well become part of our course of reading for subject A6! To have lost this case could have opened a Pandora's box that might have spread to all kinds of insurance activities in both the life and general fields. It is perhaps, therefore, also appropriate that, in our reply to the Secretary of State for Health and Social Security, who has proposed unisex annuity tables in his reform of Social Security, we should have pointed out firmly the problems and complications that would be involved with the procedure that he is proposing. We argue that it could lead to rather poorer annuity rates overall than might otherwise be obtainable, because of the extra 'sex mix risk' that individual insurance companies would effectively be expected to shoulder.

This naturally leads me on to some other general aspects of the Government's proposals for personal pensions. There is bound to be some disappointment ahead for the general public, in that the replacement of SERPS by personal pensions on a 4% contribution scale will inevitably lead to a lower level of benefits than would otherwise have been the case, particularly for most women, although this disparity will take 20 years or so to emerge because of the extremely long transitional arrangements. When personal pensions do arise, a large number of unsophisticated people (unsophisticated that is as regards the ways of the insurance industry) will compulsorily come within the ambit of not only that industry, but many other organisations that may get into the pensions field. It is extremely important that such individuals do not, some time on, feel that they have been taken for a ride. Fears are increasingly being expressed that this new army of potential policyholders may be heavily subjected to the blandishments of companies submitting increasingly unrealistic projections of future benefits. That problem has been with us for some time - but on a less potentially damaging plane in that enquirers were, in a manner of speaking, all doing so on a voluntary basis. We could now have potentially millions of enquirers operating on a more or less compulsory basis. The LOA and

ASLO have been working for some time on guidelines to be followed by member companies on policy proceeds projections. A draft of their report has been seen and commented upon by the Presidents of the Institute and Faculty, but we await with some eager anticipation the final recommendations - which will presumably now come from the ABI. It is essential that the insurance industry gives a strong and positive lead in this matter, since other financial institutions may well become involved in providing facilities for personal pensions.

Decisions concerning advertising of this nature are commonly regarded as commercial or business decisions as opposed to professional decisions. This leads naturally on to the discussion we had earlier this summer at Staple Inn Hall around a paper written by Jim Lagden on Marketing the Profession. The genesis of the paper had been the irritation that many members of the profession felt by the attacks being made on the profession by outsiders who did not fully understand what was involved. However, we face a dilemma here in that we, as a profession, cannot realistically be monitoring the commercial activities of individual businesses, but only the professional advice given by the actuary. The position of an actuary on the board of a company poses a tricky intermediate situation. The same dilemma is now being reached in the medical profession with the various levels of Management Boards that include professional medical staff. There is therefore, in my view, a need for us to be quite clear as to what is the role of actuaries as professionals and, secondly, what they carry out in their role as businessmen (or women). Whilst actuarial training may be a good background and training (inter alia) for running a bus company, it would be wrong to describe the decisions made by such an actuary in this role as actuarial decisions. One of the newspaper reports involving an actuary that was commented upon widely a year or so ago fell into this trap, in that the issue which led to the comment was basically the assumed rate of inflation for the future, which it seems to me is not primarily an actuarial decision.

We have, as many of you know, set up a new Public Relations Committee at the Institute under the Chairmanship of Marshall Field. I think that it has two immediate tasks. First, it seems to be desirable to attempt a delineation of what we regard as professional actuarial skills that we need to project, and bring under our umbrella. Second, it needs to determine the various audiences that we should seek to address in putting our case.

Whilst the best public relations officers for the profession must surely be the Fellows themselves, we clearly must put their activities into an appropriate framework and choose carefully those areas where the Institute as such should be pro-active rather than reactive. Nevertheless I believe that, as a consequence of the notion of a higher profile for the profession, actuaries themselves must be prepared to take part in public debate and be prepared to defend decisions made and advice given. Whilst many professions - ours included - have managed to remain for a long time in splendid isolation with their activities going unchallenged this situation is virtually at an end. We, like others, are expected nowadays to expose our principles and practices to public gaze, and to be prepared to defend them when necessary. In this vein it is therefore important to establish which are principles and which are judgements because, whilst the profession qua profession can and should defend the former, it cannot necessarily take the same line on the latter.

Looking ahead in the Institute diary, we have as the opening meeting of the new session at Staple Inn the Watson Memorial Lecture on Monday, 28 October which is being given by Sir John Kingman, who is speaking on 'Science, Innovation and Prosperity'. John Kingman has impeccable credentials to address us on this theme. Professor of Mathematics at Oxford at the precocious age of 30, he did much to bring probability and statistics into the Oxford mathematical syllabus and Oxford remains a major provider of recruits for the Institute. For four years up to this summer he was Chairman of the Science and Engineering Research Council with an annual budget of some £500m. He has recently become Vice-Chancellor of Bristol University. I hope that you will all make an effort to be present to hear him on the night as it is sure to be a stimulating and thought provoking occasion. The Biennial Dinner follows closely afterwards on Wednesday, 13th November at the Grosvenor House when our principal guest is Mr. Robin Leigh-Pemberton, Governor of the Bank of England, who will propose the toast of the Institute. Finally, I should mention that, political considerations permitting, I plan to attend and address the Actuarial Society of South Africa's annual convention in Johannesburg on 5/6 November, the theme of which this year is concentrated very much on life office operations.

I close my brief remarks this morning by expressing the hope that individually you each find the next two days an interesting and stimulating occasion, and that you all take an active part in the various discussions, both formal and informal.

MARKETING: ROLE OF THE INTERMEDIARY

B.C. Crittenden

Summary of Speaker's remarks and Discussion

The meeting started with the speaker giving his personal views on the position of the intermediary in relation to the current market. He mentioned how the attitudes of the Insurance Companies in recent years had affected intermediaries. In particular he felt that there was no need for the LOA commissions agreement to have been abolished, and that the ROLAC proposals encouraged companies to support tied agents or direct marketing exercises rather than intermediaries since total selling costs were not controlled. He was against the high levels of front end commission proposed under ROLAC for category A(i) agents and doubted if many agents would in fact fail to be accepted in this category.

The speaker felt that ROLAC and the licensing of salesmen must be considered together and that under the latest MIBOC proposals it was too easy to get the initial provisional licence. He doubted if a licence was really needed to sell term assurance or PHI especially since the level of life assurance cover per capita was very low in this country. There are a number of restrictions on the professional intermediary who has to register under the Insurance Brokers Registration Acts, join a trade association, and get his salesmen licensed. It was easier to become a tied agent and work from home.

Finally the speaker gave his views on the products currently being offered in the market place and felt that there would only be growth in the areas of risk/protection business and pensions. He felt that endowment mortgages were over-sold and that opportunities for growth on the investment side only existed for unit trusts. There was potential for growth in PHI but only if underwriting conditions and restrictions are relaxed. He felt that insurance companies would need to rely more upon the large volume of business from banks and building societies.

There was a lively discussion during which the following points were made:-

1. The initial licence granted to salesmen must be clearly shown to be only provisional. One speaker felt that a further examination was needed for supervisors of salesmen.

2. It had to be accepted that pure protection business should be included in licensing since the Gower report concluded that the distinction between investment and life assurance was unclear.

3. The trend towards 'unbundled' life products meant that it was difficult to cover the level of commission required to sell the products. Unit trust savings plans have had a slow start since there was little incentive to sell them. The fundamental problem is that the level of distribution costs in the life assurance industry is too high.

4. There was considerable discussion as to the relative tax advantages of life assurance and unit trusts. The point was made that with indexation of capital gains and the ability of life companies to offset expenses against tax there was now little difference.

5. Intermediaries are now becoming less passive; for example, they are setting up their own salesforces and getting involved in direct marketing campaigns. One speaker felt they should adopt a higher public profile.

6. Bank Insurance Services need to provide long term customer satisfaction. Some re-education of bank staff is needed in the wake of the abolition of LAPR.

7. Large brokers will be able to survive because of economies resulting from their size whilst small brokers will be able to benefit from giving a personal service. It is the medium size broker who will find the going difficult in the future.

8. The proposed requirement that the cooling-off notice will mention the fact that the policy was sold by a tied agent was welcomed by some speakers, but others felt it would have little practical effect.

9. ROLAC will ensure that intermediaries are not influenced between different companies by commission levels, but does not ensure that they are not influenced between products. The

ideal solution might be a move towards a fee system or a reduction in high front end commission together with an increase in renewal commission. It would however be more difficult to sell in the required volumes.

10. The future of the independent intermediary lies with specialisation and expertise.

MARKETING : DIRECT SALES

G. Westall

Introduction

Actuaries should be interested in tied agency forces, both because they are an important sales outlet for our products, and the operation of a sales force can have important financial consequences for the company. The proposals with respect to Investor Protection legislation and the ROLAC initiative could lead to an increasing interest in tied agency forces. The latest position would seem to prejudice independent intermediaries compared with tied agents.

Tied agency forces are relatively novel in the UK. If the Canadian and Australian companies are excluded, the oldest of the UK direct sales forces of the modern form is not yet 25 years old. Only a few companies have managed to develop a large sales force and many get stuck at 400 to 500 agents. This feature is amongst the most interesting of all in connection with sales forces.

Tied agency forces are not all alike; in fact there are great differences between them. Further, salesmen are not a homogeneous group. Because of this, talk of averages and generalisations about either salesmen or sales forces can be misleading, or may hide more than they disclose.

Typical structure

The typical UK sales force operates through a branch structure. Agents report to a branch office which has a manager in charge. The branches are not usually territorial, i.e. agents are allowed to sell to anyone in the UK irrespective of where they live.

It is the branch manager's function to recruit agents, train them and manage them. Agents may be employees or self-employed - the majority are self-employed. Managers may also be employees or self-employed - the greater number of managers are employees but the companies split approximately equal.

Agents have a contractual relationship with the company. They are allowed to prospect for business and submit applications for policies - they are not usually allowed to commit the company in any way. They are expected to place all of the business which they produce with the host office but this expectation is not universally realised. In general, the newer and less successful agents will place all business with the host but the more successful may be tempted for a variety of reasons to go outside.

Companies provide office facilities and general back-up for the agents - i.e the branch office. There is considerable variety in the accommodation and services provided - this can lead to variations in cost.

Recruitment

Recruitment is the responsibility of the branch manager. In general, recruitment is from outside the industry and most companies have a responsible attitude to vetting the suitability of applicants. Financial rectitude is taken as an essential and some companies have an 'n point check'. If a candidate fails to satisfy a minimum number of the n particular points he will not be recruited. These are based upon little or no evidence and much prejudice.

In spite of the effort put into recruitment and the checks upon the candidates, the termination rate of recruits is high. Once again there is considerable variation but a good rate would be that, of 100 recruits, 40 would be active at the end of one year, 30 at the end of two years and 20 at the end of three years. This is one of the major problems and any significant improvement of these rates transforms the financial position.

Training

The traditional view was that training is the responsibility of the managers. Realising the incompetence of many managers, most companies have instituted a central training programme. This has the advantages of increasing the feeling of identity of the agent with the company and ensuring a uniform approach amongst agents. Central training has been most successful when dealing with products and technical subjects. Sales training has been more of a problem because there are so many opinions on the correct approach.

If there is conflict between the central training and branch managers the training will not usually be efficient.

Much is made of the training programmes undertaken by companies. When this is analysed it will typically consist initially of a two week course plus one or two sales demonstrations. Is this enough? Does two weeks enable a man or woman who knows nothing about life assurance, tax, trusts, etc., to advise the public on an important element in their financial affairs? There must be doubts. In view of the drop out rate, can training be considered effective?

Motivation

Salesmen are not thought to be like normal people - such as actuaries. They need constant reinforcement and "motivation"! This is achieved through competitions and conventions. There is a concentration on production and commission earnings - the winners are lauded and the losers ignored, or fired. The main motivational event for the top slice of the agency force is the convention. This is usually at an exotic location with a matching programme.

However much the actuary or others may feel that these events are childish or unnecessary, they are important. It is not easy to sell insurance to people, who are usually resistant. The motivational programmes retain the salesmen, increase activity and help them keep their belief in themselves.

Once again the motivational function, which was at one time concentrated in the branch, has been taken over and expanded by the head office.

Remuneration

There are a few sales forces which claim to remunerate by salary but the overwhelming number are commission based. The agents receive commissions - usually in the range of the old LOA scale - and the managers receive an override on the commission produced by the agents who report to them.

At the start of their selling or management career, financing will be necessary because production will be insufficient to meet the income needs.

Controls

The establishment of a tied agency force entails a major capital outlay. A tied agency force has the capacity to generate a high level of expenditure. The cost of producing an agent is high and there is a constant push for the company to provide more money and services. Because of this, controls are essential. Without quick, accurate management information control will be difficult. From the actuarial position, all expenditure and quality of business must be monitored to ensure that loadings are not exceeded and profit objectives are met.

Productivity and quality of business

The other major problem of sales forces is the low average productivity. Although the average does not tell all, it appears that the average is one of the universal constants - four cases per salesman per month. This is not good and it is difficult to believe that on average the agents are working at full stretch, or anything near it.

There has been a tendency to think that the quality of business from sales forces is lower than from the traditional UK source of independent intermediaries. This does not appear to be true if like is compared with like. The evidence suggests that the quality of like products is similar for a well run sales force and a well run broker operation.

Management

The management of a tied agency force is the most difficult management job in the company. The people to be controlled are in various geographical locations. Within those locations are diverse groups of people who are technically self-employed and they have been told that they are establishing a business of their own. The job of a branch manager is not at all easy, which is why companies are taking away the authority of the branch manager and trying to manage the agents by bypassing the manager whenever this is possible.

The reason why so many companies have failed to develop beyond 400 to 500 agents could be a failure of companies to perceive the magnitude of the management skills required at all levels, and the intelligence and commercial awareness needed at the top. The usual position is for a successful agent to be made a branch manager and for senior agency management to be recruited from branch managers. At no stage has the "manager" received any management training - he is at best an "unconscious competent" and often an "unconscious incompetent". When he reaches the top of the agency force he does not have the skills to run a large scale operation.

Summary of Discussion

Recruitment of the right quality of agents is clearly critical; it is also extremely difficult, as is evidenced by the high turnover of salesmen. As a guideline, approximately

50% of all newly recruited agents hired do not last their first full year. Some companies attempt to recruit experienced salesmen from outside the industry, and some use psychological testing techniques to pick the right candidates.

Recruitment of managers to run branches and units within them is equally difficult and arguably more important. The turnover rate was thought by some speakers to be as high as that of agents, even amongst the one or two well-known companies who had succeeded in building large sales forces. There was no magic formula and all companies had to overcome the same potential difficulties. A particular problem with the recruitment of managers was that historically they tended to be promoted from the ranks of the successful salesmen; if he could not make the jump from a selling career to a management career, not only would the company have a poor manager in that branch, but they would also have lost one of their best salesmen. It was reported that some companies had successfully converted broker inspectors into good direct sales force branch managers. This was thought to be one advantage that companies operating in both direct sales and broker markets would enjoy, but there were also difficulties - for example there were conflicts in the pricing of the products which meant that when the same products needed to be marketed through both sales forces, profitability varied.

Salesmen, once recruited, needed to be trained and then licensed to sell the products. Subsequently their motivation was the key to success. Therefore a successful manager had to combine the skills of recruitment, training and motivation. Clearly a lot to ask for!

It was noted that many companies had installed ingenious remuneration packages for branch managers and agents which recognised success in terms of sales volume and persistency, and punished bad performance. Companies then expected the remuneration package to work on its own in ensuring good performance. While all this was fine for the successful agent and manager, it ought not to be regarded as a substitute for effective direct management control. Neither stick nor carrot by itself is enough, without guidance on how to improve performance. This was thought particularly true in relation to the persistency of business, which was no better for direct sales forces of life companies than for those managed by large firms of brokers.

It was usual to offer early financing arrangements to provide a steady flow of income for newly recruited agents. In the event of their failure, a bad debt occurs which, realistically, would not be recovered. This was regarded as a marketing cost.

Management of a successful direct sales force, both by the agency director and by the branch managers, was therefore a complex affair. It was thought that a vital requirement was for an effective and fast management information system, so that trends in all these areas could be closely monitored and action taken.

There was some discussion about industrial business, and we were reminded that industrial offices had successfully maintained sales forces for many years. While they were not subject to the same remuneration packages as the OB sales forces, and turnover of inspectors was much lower, many of the same points were thought in theory to apply.

There was some discussion about whether the sales force should be self-employed, or whether agents should be remunerated under schedule E. Clearly from the salesman's point of view there was much attraction in being self-employed, but there was a possible threat from the Inland Revenue. Managers were nowadays more likely to be employed. One life company was reported to be setting up a new salaried sales force, but their role was thought to be akin to that of a servicing force.

There was a discussion concerning the often-quoted barrier that stops companies expanding past the 400 agent size. Simplistically, one speaker explained that an agency director could only effectively control 20 branch managers, and each branch manager could only effectively manage 20 agents. Many companies had come unstuck when attempting to build additional strata of management; the individuals largely ignored the new incumbents, and continued to look to their original bosses.

In the US, the General Agency system was reported to be working effectively, with the marketing of business effectively contracted out to independent companies each run by a General Agent. In the UK such ideas had failed to gain credibility. The point is whether a company would be prepard to bail out a General Agent who got into difficulties; on one or two occasions rescue acts had been performed, which tended to discredit the concept.

MARKETING : MASS MARKETING

A.J. Cadge & S. Shah

The object of this presentation is to highlight a number of practical, marketing and actuarial problems in mass marketing through a hypothetical case study. The aim is not to provide all the answers (we do not claim to know them all!) but to stimulate subsequent debate.

The case study is based upon information we have dreamt up. As far as we are aware, the group mentioned below bears no resemblance to any existing group. Any similarities between the details here and any company or association are quite coincidental.

We have not attempted to make all the items within the case study consistent or very realistic. The degree of accuracy is unimportant for our purpose as we only wish to illustrate certain factors and present some argued solutions.

The Case Study Background.

The Company

1. The XYZ Insurance Company Ltd. are a composite UK Company who were established around 1850. They are a somewhat conservative office who have established a good reputation in the broker market for the high level of service they provide.

2. They are based about 50 miles from London and have 10 branches around the UK The H.O. staff number around 200.

3. They have approximately 250,000 in force policies and sold about 30,000 new policies during last year. The life fund stands at around £3/4bn.

4. The 30,000 new policies are broken down into approximately the following areas:-

15,000 - mortgage related (principally endowment and low cost endowment)
6,000 - term plans of various descriptions

4,500 - unit-linked plans
4,500 - other various - some individual pensions, annuities, etc.

5. Five years ago, the now General Manager was appointed with a brief to bring the office into the eighties and to increase the rate of new business growth.

6. Recently the company launched their first unit-linked plans (quite successfully) and have a reasonable range of both traditional and unit-linked plans. Most business is still sold via the broker market but the company is slowly establishing a small direct sales force.

7. The major projects at present are the up-grading of the current computer systems (including a branch terminal network to allow enquiries and some quotations) and the development of new individual pension plans.

8. The company's image is reasonably good amongst the public at large after several sponsorships and some advertising and PR campaigns.

9. To date, the office has only dabbled in direct marketing by, for example, enclosing reply paid cards with some mailings such as bonus notices. Whilst this has generated some response little business actually resulted and the practice has been discontinued.

10. Direct or Mass Marketing has been one of the subjects that the senior management have discussed at meetings over the last few years but without reaching any definite conclusions. Whilst some feel they are missing out and have heard that some other offices have been quite successful others keep finding objections such as:-

* it won't work
* it is junk mail
* it is not our image
* we have managed to date without it
* we don't have the expertise
* it is very expensive
* what would our brokers/direct sales force say, etc., etc.

However the General Manager is still keen that they do at least try to conduct a proper campaign at some stage if the opportunity seems right.

11. By chance, the Marketing Manager has come to hear of a "wonderful opportunity" for just the direct marketing test he has been looking for. One of his near neighbours sits on the committee of the Association of British Plumbers as their Financial Adviser. The Association wishes to extend the range of services that it provides to its members and, additionally, generate some income.

The List

1. The Association of British Plumbers, which has its head quarters at "Waterloo"!

2. Has 125,000 "active" members who in return for annual subscription of £15 p.a. (due in November) receive a variety of benefits/services including:-

- professional indemnity coverage
- legal services
- legislative changes/British standards guidelines
- training assistance
- conferences, local meetings etc.
- a quarterly newsletter which is used to keep the members informed of various changes, current news, etc.

3. The majority are self-employed.

4. The Association is run by a full-time Chairman, a full-time Secretary and 8 other elected officers (one from each district area). This Committee also includes a local accountant who acts as treasurer, financial adviser, etc.

5. This Accountant is known to the XYZ's Marketing Manager who has discussed with him the principle of direct marketing insurance products to the Association's members. The Accountant indicates that, providing the product being offered is good value and that the Association itself receives a good financial reward, he feels certain a joint venture could be accommodated.

Summary of Discussion

The case study was developed in some detail, by means of three hypothetical meetings between the speakers, acting as Actuarial and Marketing Managers of the XYZ Insurance Company Limited. This enabled them to draw attention to many of the practical and technical problems involved in the development of a mass marketing campaign. The role playing approach was also adopted for the remainder of the session - with the audience acting as the Executive team of XYZ, and the chairman as the General Manager. This encouraged some spirited questioning of the speakers, which gave them the opportunity to enlarge on their earlier remarks and to introduce further topics.

It was suggested - and not really disputed - that very few life companies had developed a coherent strategy for their mass marketing activities. There appeared to have been a tendency for companies to "lurch" from one idea to another. This approach was very unlikely to be cost effective, and could even be counter-productive. Success could only be achieved by means of a genuine commitment, adequate allocation of resources, careful planning and the elimination of as many uncertainties as possible (e.g. by test marketing, segmentation of the market, etc.). In practice, the best approach was probably to start in a small way, and then gradually build on and from one's own experience.

As the product is being bought rather than sold, mass marketing tends to produce more volatile results than other sales methods. Response levels can vary enormously, but should usually fall in the range 0.5% - 2.0% for a well planned and conducted campaign. However, in order to achieve this sort of level, an effective follow-up procedure will be required. Although this necessarily involves a significant additional cost, it can more than double the response level - and hence improve the cost effectiveness of the overall campaign. Once the follow-up procedure has been completed, details of non-responders could be passed to the company's own direct salesmen (if any) as leads. This is, of course, a very delicate area and such action would not always be possible or appropriate.

In order to achieve a cost effective response level, it is necessary to pay careful attention to the design and presentation aspects, having regard to the particular target market involved. Some important - potentially positive - influences on levels are:-

- simple products and packages
- simplified proposal forms and payment procedures
- special offers
- cut-off dates
- clear sales points or messages
- endorsements by well known persons or organisations
- segmentation of target markets (in order to obtain more precise assessments of the likely needs of potential customers)

The presence of some - or even all - of these will not necessarily guarantee success, but their absence may well lead to failure. In practice, the best responses will usually be obtained from existing clients and strong affinity groups. This reflects the fact that some positive influences are present automatically - while others can be identified more readily, and then structured to the best advantage.

During the planning of a mass marketing campaign, there may well be conflicts between the views of the actuarial/financial and marketing functions. This will almost certainly be the case when a company first gets involved in mass marketing of any nature. As experience is gradually acquired, such conflicts should become less and less noticeable - unless and until the marketing side come up with a "brand new and really exciting idea"!

The main areas of conflict will usually relate to the type of product to be marketed, the design and content of the proposal form, the nature and extent of any special offer(s), and the pricing of the product. These conflicts are hardly novel - they can arise in any marketing context.

However, the absence of any intermediary - and the consequent need for "positive influences", as described earlier - brings them into particularly sharp focus in the mass marketing area. The resolution of such conflicts is not difficult in theory, but can be time-consuming in the real world! There are three main areas of concern from the actuarial/financial standpoint - expense levels, mortality experience and lapse experience. The major problem is, of course, that measures taken to achieve satisfactory expense levels may result in an adverse mortality and/or lapse experience. However, practical experience shows that it is possible to achieve a sensible balance in these areas. To date, the mortality experience appears to have been good - and the lapse experience quite good.

Concerns were expressed regarding the possible adverse impact on existing sales outlets. This is a real problem, but can be overcome. The important thing is to keep them "in the picture" - to communicate and inform. In addition, there can be positive features - for example, mass marketing can be used to complement the servicing of existing clients.

Other concerns expressed included the danger of invading the privacy of individuals, the possibly conflicting needs of the company and the customer, and the danger of "over marketing" (particularly in the area of direct mailing). These are genuine concetns, which must be addressed by any company involved in mass marketing.

The overall consensus appeared to be that mass marketing provided a valid additional sales outlet, and one which had considerable scope for further development. On the other hand, there are plenty of pitfalls for the unwary, and some areas of genuine concern. It is the responsibility of each company involved to deal with these in an appropriate and proper manner.

EXPENSE CONTROL AND BUDGETS

M. MacFarlane FCA & A. Turner ACMA

Summary of Speakers' remarks

The increasing pace of change within the financial services industry, particularly in the areas of technology, customer awareness and competition, leads to the need for sharper allocation of resources. This is true whether a company is concerned primarily with competing on costs or whether it seeks to provide better products and services. In the former case the connection is obvious, in the latter attention needs to be directed towards prioritising resources and limiting the escalation of development costs.

The budgeting methods traditionally used by life offices have a number of shortcomings when trying to optimise the allocation of resources. Firstly, they encourage "incrementation", i.e. looking only at the additions to last year's costs. Implicit in this is the assumption that last year's activities were all essential and were all performed effectively. Moreover, traditional methods give management little information, particularly in the areas of alternative strategies, the consequences of cutting back (in terms of services lost or impaired) and the benefits of spending more. The results of these deficiencies are arbitrary decisions ("cut everything by 10%") and a lack of commitment for those participating in the budget process. They see little real purpose and begin to go through the motions.

Priority Base Budgeting (PBB) originated from the so-called Zero Base Budgeting developed in the US in 1969. It gained prominence when employed by Governor Jimmy Carter in 1971 and is now widely used in the US and increasingly so in Scandinavia & Northern Europe, including the UK. It has achieved only a limited penetration within the UK insurance sector however, probably because the industry has had an easy time in the last decade!

The PBB process consists of six steps as follows:-

1. Establish the Corporate Planning framework. This would consist of long term and short term objectives and operating plans.

2. Assess all activities in detail. It is crucial that this includes current activities as well as new ones. Each activity should be viewed with regard to its elimination, substitution, computerisation etc. and appropriate resource levels determined at a number of different "service levels", e.g. "minimum", "adequate" and "ideal".

3. Develop the budget proposals. These should show the resources required for each of the service levels.

4. Aggregate the proposals. Managers should review within departments, then within divisions and so on.

5. Rank the proposals in order of priority. This will be a part of the aggregation process in 4 and should be done against the background of the plans in 1 above. The ranking should extend to the individual service levels for each activity.

6. Finalise plans and budgets. This will be a senior management function and will involve a "cut off" with proposals "below the line" being deferred. What remains is the annual budget.

There are certain essential ingredients for PBB to be successful in overcoming the possible problems in operation. The problems are empire maintenance, the "we've always done it this way" syndrome and the potentially high cost of PBB, involving, as it does, considerable management time and effort. The factors necessary to overcome these difficulties are effective communication and training, commitment and continuing management support in the shape of monitoring the process and in ensuring proper integration with corporate strategies and objectives.

The advantages of the PBB system are that it is based on activities, not costs, these activities are linked to the Corporate Plan, it gives the alternatives and it highlights the trade-offs. One caveat however, whilst PBB is an effective management tool, it is not a universal panacea for all a company's ills.

Summary of Discussion

The Speakers' dismissal of traditional budgeting methods as being inadequate was challenged by one or two people from the audience. They contended that life assurance companies' traditional methods (which normally include a detailed expense analysis) had proved effective in controlling costs, although they perhaps did not provide an answer to "how much should we spend?".

One speaker felt that PBB is largely a matter of "commonsense" and that the ideas are probably widely used by management without being formally recognised. The problem was that the important messages regarding reassessment of existing activities were not carried through to the lower ranks of the organisation. Other speakers who used PBB stressed the importance of communication down to the lowest levels in the organisation in making PBB work effectively.

It was observed that PBB, in a life assurance company, would not bring about any comparison of actual expenses against allowances in product pricing. However, a priority ranking of activities might prove very useful in identifying where savings could be achieved if a company was in the position of having an expense "overrun" against allowances.

One questioner asked how PBB could cope with the "immovability" of certain costs, e.g. head office buildings, employees in secure employment, long established salary/grade structures. The speakers said that PBB is not a magic formula. Its practical use involves examining the 'discretionary' costs, and concentration on what can realistically be achieved.

Another questioner wondered if there needed to be a flexible structure for PBB to operate effectively, i.e. frequent movement of staff/managers to prevent the build-up of established empires and to promote frequent critical reappraisal? The speakers felt that, though helpful, this was not necessary provided there is sufficient commitment within the company.

PROFIT TESTING: ADVANCES IN METHODS & DEVELOPMENTS FOR TRADITIONAL BUSINESS

R.P. Burrows & J. Goford

History

Profit testing as an actuarial art form was introduced by Jim Anderson in his paper on Profit Measurement to the Society of Actuaries in 1959. Subsequent papers have been published on "Pricing and Profitability in a Life Office" (JIA 104) by Chris Smart and "A Prophet of Profits" by Robert Lee (JSS 28).

Originally profit tests were performed manually and were fairly crude. The tests were annual and made little or no allowance for the incidence of cash flows during the year.

The introduction of micro computers enabled these profit tests to be speeded up and for considerably more sophistication to be introduced to the method. Today, profit tests are highly sophisticated procedures and form the basis for sound financial control of a Life Office as well as for the initial testing of product profitability.

Philosophy

A profit test is a mechanical operation whose results are no better than the assumptions and the profit criterion used. The profit criterion is the central financial expression of the company's goals. In one criterion is contained not only the statement of the required rate of return on capital invested but also the company's attitude towards profits over and above the required rate of return on capital.

One of the virtues of a profit criterion is that it enables consistent profitability across a product range and enables a sensible evaluation of widely different products. Profit testing also enables the product designer to get a "feel" for the product as he is able to examine the incidence of profits. The shape of profits is often referred to as the profit signature of a product. Sensitivity testing is a vital part of product design and enables the designer to examine his product under a wide variety of changed conditions.

A profit test run on a micro computer enables interactive product design between the actuarial side of the company and the marketing side. Given a firm profit criterion multiple design options can be investigated.

Valuation Reserves

Regulation 56 of the Insurance Companies Regulations 1981 says "The amount of the liability determined in respect of a group of contracts shall not be less than such amount as, if the assumptions adopted for the valuation were to remain unaltered and were fulfilled in practice, would enable liabilities similarly determined at all times in the future to be covered from resources arising solely from the contracts and the assets covering the amount of the liability determined at the current valuation."

Valuation regulations for unit linked products have not yet been issued but regulation 56 gives an indication of the methodology which can be used to determine those reserves. The avoidance of future valuation strain implies that the cash flows of the products must be examined for each future period and reserves established early so that they may be released to absorb the negative cash flow.

This leads directly to using profit testing methods for the determination of valuation reserves. The last year's cash flow may be examined and, if negative, the appropriate reserve established at the beginning of the year to zeroise the earnings in the last year. Then the previous years earnings may be examined allowing for the reserve so calculated to be established at the year end. If, then, that year's earnings are negative a reserve must be established at the beginning of that year. This process may be continued forward until no additional reserve is required.

Valuation reserves are a crucial element in the profit testing process as it is the <u>distributable</u> profits of the company which are to be determined. The distributable profits are equal to cash flow minus increase in valuation reserve.

The importance of the valuation reserves in profit testing highlight the position of the Appointed Actuary. In product design, it is his responsibility to define the valuation reserve basis and to interact with the product designer during the design process.

Advances In Methods

When profit testing started, calculations were performed annually. Nowadays the profit tests are typically calculated monthly. This requires careful interpretation of assumptions which are usually expressed in annual form. In particular the development of a unit fund can be extremely complicated when there are mortality deductions and expense deductions as well as management fees and advance actuarial funding of those fees.

A particular source of profit which should not be ignored is from paid up policies. The incorporation of PUPs into the profit test on an "accurate" basis requires a considerable amount of additional work.

Similarly products which allow increments may be regarded as one product and increments incorporated into the profit test. Alternatively increments may be priced as stand-alone products. Reassurance terms may be incorporated in the profit test either on a risk premium basis or on a quota share basis and the impact of financing treaties may be assessed.

There is some debate about whether the EEC solvency margin should be included in profit tests. One argument is that the EEC solvency margin is not "at risk" and hence its impact may be discounted at the earned rate rather than the risk discount rate. Another argument is that the solvency margin should be included at a maximum of the cost of financing the margin via reassurance.

In order to obtain uniformity of treatment of different products, sophisticated profit tests are now constructed in modular form so that, for example, different styles of allocation, cash values and reserves may be tried. Advances have also taken place in the formulation of sensitivity testing which becomes easier as hardware improves.

Products

Advances in methods of profit testing have, to a large extent, been driven by the demands of product design. The need to test the effect of flexibility of premium and sum assured has produced some interesting complications.

Flexible Whole Life Plans require mortality, disability and expense deductions from the unit fund. It is necessary to ensure that these deductions are made correctly. Flexible Whole Life Plans also contain options to increase the sum assured without medical evidence on certain events. An allowance must be made for this in setting the level and shape of the mortality rates. Flexible Whole Life is also an interesting example of how the demands of the valuation basis can impact on product design. For example, if the expense deduction is determined correctly, no further valuation reserve for maintenance expenses may be needed.

Turning to with profit operations the profit test results may be split into two parts - firstly, the shareholders' share of cost of bonus and secondly transfer to and from the estate. Whilst the former should be discounted at a risk rate of return, there is some debate about the appropriate rate of discount for transfers to and from the estate.

This may be extended further when considering mutual companies. Here one may solve for the discount rate at which the transfers to and from the estate have a present value of zero. It is this discount rate which determines the maximum rate of growth of a mutual company.

Profit tests are of assistance in determining the bonus structure of a new product and may also be used to determine the initial level of bonus which the product may be expected to support. Here again the profit signatures are important.

Applications

We have seen how profit testing techniques may be used to determine the valuation reserves. Because the cash flows which are calculated in the profit test are no more than the expected contributions of that product to the revenue account of the company, so the profit test may be used as the basis for a projection of the whole company. The model office of the company can be constructed and profit tests performed for each model point. By layering and adding together the results of these tests the model of the whole company may be produced.

Initially the revenue account projection will be a reflection of the assumptions and allowances in the products. At the global level, expenses, investment income and tax may be adjusted.

By summing the present value of profits of the model office one may obtain an appraisal value of the in-force portfolio. To this may be added the net worth of the company and an estimate of the future profits on future business to obtain an appraisal value of the whole company.

The revenue account projections of the company may be compared for an accounting period of the company with the actual revenue account for the same period. One of the most valuable communications to management is an analysis of the differences between the projected earnings and actual earnings - showing the source of variances.

This, in turn, leads to the monitoring of critical assumptions. Deviations of results from original assumptions may be fed back into the profit tests to complete the Control Cycle.

Notes on Discussion

1. Solvency Margins

Allowance for solvency margins should always be made when profit testing. There are a number of reasons for this:-

(a) Shareholders' or other free capital is required to support the solvency margin, and even mutual companies need to hold adequate free assets to cover the solvency margin.

(b) Even when free capital is available it is not appropriate to ignore the effect of solvency margins as the use of this capital at less than a risk rate of return would not be an optimum strategy.

Generally speaking the solvency margin is treated in the same way as reserves representing a cost in Year 1 which subsequently earns interest and will eventually be released to surplus.

One can argue as to what risk rate of return is appropriate for solvency margins as it may be considered that the money is not "at risk" in the same way as other reserves.

An exception to the above occurs where the product designer can arrange for the solvency margin to be partially financed by reassurance. In these circumstances the allowance for solvency margins in the profit testing can be amended accordingly but it is then necessary to make explicit allowance for the reassurance terms available.

2. Profit Criteria

It is usual to use a high discount rate, typically 15%, to provide an adequate return on capital employed. Whilst it is superficially attractive to express any additional profit as an additional return on capital, this can cause problems with nil or low strain products. A preferred approach is to relate the profit to initial commissions so as to identify the profit criteria with sales incentives. This also assists communication of objectives where the explanation of complicated criteria can be a problem.

3. Fixed Expenses

It is necessary that all expenses of an office be covered by the expense contribution from new and existing business. Where a new company is starting up it might be necessary to apply special treatment of fixed overhead expenses for a limited time but it is still necessary to achieve a position where all expenses are covered within a reasonably short period of time. It is often the case in practice that "short term" expense over-runs never disappear.

4. Distribution to Shareholders

Due allowance should be made for any taxation implications of the distribution of profit to shareholders. A tax-paying company with sufficient franked investment income may incur no additional liability on a distribution. A company in a gross position needs to allow for the tax charge and the effect on the company's excess expenses.

5. Investment Return

In practice the investment return earned on a life fund varies most significantly from one year to the next. For unit linked business the overall rate of investment does not have a large effect on the profitability of the business, but for traditional business the investment return can have a critical effect on profitability.

6. With Profit Business

The profit signatures of with profit business often vary quite significantly from the pattern of distribution of surplus under an ordinary reversionary bonus system. Most offices have little ability to vary their bonus systems to any great extent, but the examination of profit signatures can help to identify the approach to bonus distribution which optimises profit.

7. The Control Cycle

An important element of the control cycle is the analysis of surplus. In practice it is difficult to project the future effect of deviations from assumptions though this is simplified if for example the effect of reserve changes on deaths and withdrawals are incorporated in the analysis of the surplus arising from the actual death/withdrawal experience. A simple way of expressing the effect of deviations from the assumptions in any year is to consider the change in the appraisal value of the company, this being a simple single figure which can be clearly and easily communicated with, for example, shareholders.

8. Model Office

The most important factor is to choose appropriate model points so as to represent the business reasonably accurately. Products with fairly stable profit signatures are not too sensitive to the choice of model points but products with an unstable profit signature will need many model points and careful checking to ensure adequate representation of the actual business. In general terms this aspect is more of a problem for traditional as opposed to unit linked business.

Modelling of a flexible unit linked policy where the office has the right to vary all charges etc. reduces to an examination of the position in the first two years and subsequent management control. The most important feature is the need to react to changes in the experience and to adjust charges very quickly. This assumes that the valuation regulations do not impose any additional requirements, for whilst in theory at least there is no limit to the way in which an office can adjust its charges, it can be very difficult in practice to react as quickly as one would ideally like.

PRICING TERM ASSURANCE PRODUCTS

D.J. Le Grys

Background

Over the years there has been a steady improvement in the mortality experienced by the population of the United Kingdom. Similarly the mortality experience among assured lives has also improved steadily. The life assurance industry has been able to reduce premiums for term assurances and to make lower charges for the cost of life assurance cover. It is widely assumed that mortality experience will continue to improve and that the cost of life assurance cover will decline further in future years.

However, the mortality cost is only one of a number of factors affecting the premium rates. Changes in reserving bases, solvency margins, life offices' internal tax positions and other factors may require heavier margins to be built into the premiums. These changes could lead to a reversal of the historic downward trend in premium rates.

The paper does not attempt to cover all the factors that need to be considered in formulating a premium scale for term business. The aim is more limited and an attempt is made to show how three factors - valuation regulations including solvency margins, expense considerations and tax assumptions - can affect profitability.

A review of term assurance rates could be relevant for UK offices. Now that LAPR has been abolished offices may wish to change marketing plans and concentrate more on life assurance protection policies - such change would be unsound if an office's term assurance rates were not profitable.

Profit Tests and Profit Margins

Standard profit testing techniques can be employed to determine both the 'return on capital ' and 'profit margin' on typical premiums charged by offices offering competitive term rates. The profit tests can be based on two extreme stand points.

Stand Alone Costing

This basis might be considered suitable for a new proprietary life office. The profit test assumptions are fixed for a new generation of policies assuming that no existing business exists. The profit test would assume no tax relief on initial expenses, that expenses include an allowance for overhead costs and that solvency margins would be incorporated. The mortality outgo would be based on the reinsurer's risk premium rates.

Marginal Costing

This basis might be appropriate for an established life office with a large portfolio of with profit endowment and whole life business. Such an office could well be in a 'net of tax' position and the office could obtain tax relief on the expenses of new term policies. The office is assumed to have abundant free reserves and could easily cover the solvency margins relating to the new term assurances.

The marginal costing assumptions assume full tax relief on expenses and commissions. Only the additional direct costs of writing term business are included. No direct allowance for solvency margin is made. The mortality outgo is based on the office's own favourable experience.

In practice it is unlikely that any office would be able or wish to adopt either of the two extreme sets of assumptions. No office is sufficiently strong that it could use a marginal costing basis for all classes of new term business for unlimited amounts and without regard to the effect on the existing fund.

On the other hand, it is unlikely that any office has to follow stand alone costing assumptions totally (e.g. the office could write Income Bond business additionally and obtain some measure of tax relief on expenses on term business).

An office would need to consider some intermediate set of assumptions.

Sector Pricing

This pricing method allows an office to set intermediate pricing assumptions between the two extremes. In the simplest form of this concept the life office's business can be considered as two sectors - one sector is the existing business and the other sector is the new term assurance business.

The principals (shareholders or with profit policyholders) own or control the sector of existing business - because of the existing business they have certain advantages (principally some measure of free reserves, tax position, established mortality experience, administration system etc.) which enables them to finance a new sector of term business. Because of the advantages they can utilize a certain set of marginal costing assumptions. On these assumptions they consider that they can write the new business at no detriment to themselves. If the principals bargain with the new policyholders and receive business on a higher pricing basis then it is in their interest to accept the business.

On the other hand, the policyholders who comprise the new sector of term business have an insurance need. Even if it were feasible for them to try to fulfil it themselves they would have to adopt at least a stand alone basis of costing. Therefore there is an advantage/interest for them to bargain with the principals, who own the existing business, to get a lower price for their insurance.

The two sectional interests could bargain and conclude an arrangement. A method of pricing or profit testing can be conceived - Sector Pricing - where each of the assumptions in the profit test is considered separately and a value fixed which would reflect the end result of commercial bargaining between the two sectors.

In practice of course the theoretical concept of bargaining can rarely take place and the actuary, in fixing the assumptions, has to act as an arbiter between the two sectional interests.

The point where the bargain is struck is not necessarily half way between the marginal and the stand alone assumption - a range of factors will determine the mix of assumptions which should be used in the profit test.

The following factors could be relevant: volumes of existing and new business, free reserves, tax position, existing mortality experience, reassurance terms, the office's ability to achieve/control a flow of new term assurance and other classes of business.

In effect a Sector Pricing approach defines a minimum reasonable premium for the new sector of term business. The challenge to the offices' marketing managers is one of obtaining at least the necessary inflow of new business while employing, at least, this minimum scale of premiums.

Profit Test Results

The pricing assumptions and the valuation assumptions are not necessarily those that any office would use in practice. The assumptions have been chosen to illustrate the principles of marginal, stand alone and sector pricing. However, it is felt that the assumptions are not untypical for UK offices. The results of the profit tests can be summarised as:-

Policy Age	Policy Term (Years)	Annual Premium for £100,000 Sum Assured	Stand Alone Costing	Marginal Costing	Sector Pricing
				Return on Capital	
50	10	£658	0.2% p.a.	41.5% p.a.	5.9% p.a.
40	20	£376	5.5% p.a.	28.8% p.a	9.6% p.a.
30	30	£200	6.7% p.a.	13.8% p.a.	9.3% p.a.
30	10	£ 90	1.2% p.a.	12.9% p.a.	3.6% p.a.
				Profit Margin (Percentage of Premiums)	
50	10	£658	(-) 31.4%	10.4%	(-) 12.7%
40	20	£376	(-) 46.4%	17.3%	(-) 16.5%
30	30	£200	(-) 90.8%	22.9%	(-) 34.7%
30	10	£ 90	(-) 54.9%	4.0%	(-) 32.9%

(Note that much of the term business in the UK is now issued with smoker/non smoker differentials. In this analysis the complications of non smoker discounts have been ignored and only aggregate term rates have been considered. The premiums shown above have been obtained by combining non smoker and smoker office premiums in the ratio of 70/30).

The results suggest that unless an office can afford to use a full marginal costing approach then the profit to the principals from writing a new sector of term business is inadequate. Full marginal costing is unsatisfactory because no allowance for overhead costs is charged to the new sector of business. Furthermore, developments in recent years have affected offices' ability to use a marginal costing basis. The principal developments are:-

i) Offices now have to hold specific and defined solvency margins, hence the amount of principals' capital required to finance a new generation of term business is increased considerably. Because extra capital has to be employed and also because the choice of assets to maintain the solvency margins is restricted, the overall profitability of writing new business is reduced.

ii) Changes in valuation regulations may require additional reserves on some classes of term business. Thus the adverse effect on capital requirement, return on capital and profit margin could be aggravated.

iii) Many UK offices are moving away from internal tax positions under which tax relief is automatically available on all expenses. Consequently some offices have to reconsider the tax assumptions in premium rates and to make more stringent assumptions. This is especially true for term business which incurs heavy expenses but produces relatively little investment income.

These three developments - solvency margins, changes in reserve bases and tax assumptions - can result in low returns on principals' capital and low or negative profit margins. Despite an improvement in assured lives mortality, profit tests on a sector pricing approach strongly suggest that premium rates should be increased substantially rather than decreased if expectations of reasonable profit to the principals are to be fulfilled.

FOOTNOTE A fuller version of the above paper was presented at the convention. Copies can be borrowed from the Institute library, or may be available direct from the author while stocks remain.

Summary of Discussion

On the whole speakers tended to endorse the views expressed by the author in his presentation. The rationale of 'sector pricing' in determining a costing basis and the concept of 'profit margin' as an additional profit criterion was generally accepted. One speaker, however, disputed the concept of bargaining, feeling that all products should be costed on a consistent basis.

The feeling amongst the speakers was that term rate levels were too low. Various reasons were suggested and several speakers mentioned competition between offices within the broker market. The point was made that the broker's role was to offer their customers protection at the lowest possible cost (via a decent life office), and that there would always be one company prepared to operate on this basis. However, an opposite view was also expressed that competitiveness was a myth since brokers did not sell term assurance because the commission was too low. In the opinion of some speakers, term assurance was seen as a "door opener" and some offices used term business as a loss leader. This was found worrying if the offices did not appreciate this.

A number of speakers felt that the way forward was to market plans for "the man in the street" who was generally under-insured. It was agreed that it was necessary for "the man in the street" to buy term assurance and therefore highly desirable for companies to be able to charge a price which would justify the sales and marketing effort and yield a satisfactory profit.

It was felt that competitive term assurance rates were not necessary for this market and that more commission and heavier premiums were required. To this end the introduction of flexible whole life contracts was seen as a positive move by life offices because it dealt with this problem to some extent. The view was also expressed that direct sales forces had been used, for a long time, to sell savings contracts and that there was a general reluctance among agents to sell term assurance. It was seen that this attitude would need to change with abolition of LAPR and that companies would, in future, be more protection orientated.

Direct mail was also briefly discussed and the point made that for this method of trading there was no need to be on top of the league table. On the other hand it was necessary to introduce marketing differences for these products so that no direct comparison could be made with conventional term policies issued on lower premium rates.

One speaker stated that his company's pensions term rates were low down the league table. Consequently term business formed only a small proportion of his office's overall pensions business. However, they contributed a significant proportion of the overall profit.

The question was raised as to whether reinsurers had contributed to the low term rates in the UK Though it was recognised that this may have happened in other markets it was felt there was no evidence to show that this was the case in the UK.

The discussion turned to the introduction of discounts for non-smokers. Whilst North American experience showed that smoker mortality was considerably heavier than non-smoker mortality, the point was raised that there was no effective check on the status at either the commencement date of the policy or the time of a claim. The view was expressed that the effect of non-smoker differentials had been to reduce overall premium levels for everyone but with a loading being applied to the small percentage of policyholders who admitted to being smokers. The proportions of smokers to non-smokers amongst offices offering non-smoker differentials appeared lower than for the assured population as a whole.

One speaker felt that a problem with deficiency reserves could also arise. He felt that much heavier margins were required in the valuation basis than in the pricing basis, principally because the non-smoker category may in practice include some smokers and also because there was no established experience in the UK life market for either smoker or non-smoker mortality.

One or two speakers were less pessimistic about the level of term assurance rates, arguing that established companies (in a 'net of tax' position) had historically made reasonable profits. Furthermore, recent mortality experience had improved significantly. Against this it was questioned whether offices were allocating expenses correctly and if sufficient allowance for solvency margins and deficiency reserves had been made. It was also noted that term assurance rates had fallen faster than mortality experience.

The Chairman, in concluding the discussion, felt that there was a fair degree of agreement that term rates were too thin and agreement on the direction in which premium rates should move. He felt however that there was less agreement as to how to get there.

MORTALITY

P.J.L. O'Keeffe

Smoking Mortality

Rhodes & Savill in their fine paper "Smoker v Non-Smoker" (JSS 27) believed the following to be obvious, and the evidence to support them is overwhelming.

1. There is absolutely no doubt that the mortality of life long non-smokers is markedly better than that of smokers.

2. There is absolutely no doubt that the mortality of persons who successfully cease smoking improves and after a substantial period of abstinence (probably about 15 years) merges into the non-smoker mortality level.

3. It is fair and reasonable to give better life assurance terms to non-smokers provided proper safeguards apply.

Surgeon General's Reports 1964 and 1979

Research into the harmful effects of cigarette smoking began in the 1950's. A UK doctor's survey was part of this, but similar surveys started in other countries.

In 1964 the US Department of Health, Education and Welfare produced a report of the advisory committee to the Surgeon General which summarised the findings to that date of seven surveys in the UK, US and Canada.

This report was extensively updated in 1979. The general conclusion was to confirm an overall increase in mortality of around 70% for all smokers and of around 100% for heavy smokers. The longer and harder a person smoked, the more the mortality risk.

Life Assurance Rating

In 1964 the State Mutual Life Assurance Company of America began to offer a whole life policy to non-smokers at a reduced premium rate based on a lower mortality expectation.

In 1979 Michael Cowell and Brian Hirst, actuaries with State Mutual, issued a paper for the Society of Actuaries (TSA XXXII) in which they were able to compare two groups of insured lives with standard underwriting characteristics with an individual being assigned to one or other group solely on the basis of classification as a smoker or non-smoker.

As a result there was a swift expansion in the number of companies offering non-smoker discounts. In the US and Canada the vast majority of life offices now offer some form of differential premium and/or benefits to non-smokers.

Problems with Non-Smoker Plans

The introduction of non-smoker life assurance in the US and Canada has not been greeted with unbridled joy by all offices.

Firstly there have been substantial "lapse and re-entry" problems.

Secondly, there has been a significant problem of false declarations. This problem is now clearly becoming more serious and endangering the viability of such plans. US companies are combating the problems in a number of ways including a Urine-Nicotine Test and random checks on applicants.

In designing non-smoker products there are a number of questions which have to be asked regarding definitions and applicability:

1. Who is a non-smoker?

2. What about those who lapse?

3. Does the US experience apply?

4. What to do in the event of false declarations?

Other Lifestyle Factors

Positive discrimination in life assurance rating in favour of non-smokers has led some companies to try to extend the principle to other so-called "life style" factors.

Alcohol:

There is no doubt that excessive indulgence in alcohol leads to increased mortality, primarily but not exclusively as the result of cirrhosis of the liver and cancer of the oesophagus.

In recent years alcohol consumption has been rising both because of the greater availability of alcohol and also because the real cost has fallen dramatically.

Today alcohol consumption per se is no longer a significant factor for rating purposes but the data available points to a strong causal link between alcohol abuse and increased mortality. What is missing is the experience data such as the State Mutual experience provides for (non) smoking.

"Superfit" Plans:

The introduction of non-smoking policies has however led some companies to extend the benefits to those who indulge in some form of regular physical exercise. The scientific basis for these so-called "Superfit" policies however seems to be somewhat sketchy, and certainly not based on the sort of scientific study that underlies non-smoker reductions.

Growth of Non-Smoker Plans

United Kingdom:

Until September 1981 there was only one company in the UK offering benefits to non-smokers. Over the next twelve months however another dozen or so offices offered discounts of some type and by the end of 1982 the figure had increased to 25. Since then the rate of increase has been more gradual and some notable offices still do not offer enhanced benefits to non-smokers on any of their products.

Nevertheless non-smoking plans are gradually making some inroads into the UK market although no one could pretend that there has been a stampede.

Republic of Ireland:

Non-smoking discounts have become common in Eire over the past two years. Most companies offer an age deduction of three years on Whole Life and Term Assurance plans to those who can disclose that they have not smoked in the past twelve months and have no intention of smoking.

Europe:

With the exception of one country, the Netherlands, there are no non-smoker plans in continental Europe. This is largely due to the scepticism with which they are viewed by the Statutory authorities who control the life assurance industries in various countries.

Netherlands:

The only exception to the total absence of non-smoking plans in Europe is the Netherlands where two companies have introduced non-smoker plans. Recently there has been an industry wide accord to freeze term assurance rates apparently giving those two offices a price advantage. In fact this has proved to be of relatively little commercial advantage.

Worldwide Development

In November 1984, as part of the presentation of this paper, I wrote to the national correspondents of a number of countries around the world asking them to give a summary of developments in the mortality effects of smoking and other lifestyle factors in their country.

As far as Europe was concerned replies were received from Austria, Belgium, Denmark, France, Germany, Greece, Norway, Switzerland and Sweden to the effect that no action was likely in any of those countries.

In contrast replies were received from "Old Commonwealth" countries which almost all stated that non-smoking policies were indeed being sold.

Other Types of Insurance

One of the incongruous features of the State Mutual experience is that not only do non-smokers experience lower mortality from medical causes (cancer, bronchitis etc) but also have less chance of dying from motor vehicle accidents, suicide and homicide.

The conclusion which is generally drawn is that non-smokers have differing personality traits to smokers. Consequently non-smokers are now being offered reduced premiums for insurance benefits other than life assurance, particularly in the United States.

Permanent Health insurance is one example.

Perhaps more surprising is one US company which offers non-smoking personal lines insurance. This includes a discount on homeowner policies, boat insurance, and more recently lower car insurance rates for non-smokers. The company claims that non-smokers as a group exhibit the kind of prudence that is likely to produce fewer claims from all causes.

Unisex

The provision of common annuity rates for both sexes has been a live subject for some time in the United States and it may be useful to look again westward to follow what has been happening there.

There are two US court cases with one of significance - the Manhart case and the Norris case in which the Supreme Court ruled that employers had violated Civil Rights Legislation by offering different benefits to male and female employees.

It made clear that the obligation to provide equal benefits is the employer's. The court stated quite categorically that it did not intend to force insurance companies to issue annuities at uneconomic rates.

There was subsequently an unsuccessful attempt by Women's Rights campaigners to push through Congress a "Fair Insurance Practices Act" which would have prohibited discrimination in all forms of insurance on the basis of race, colour, religion, sex or national origin.

This is fundamentally different to the situation envisaged by the Fowler Green Paper. Norris is aimed at the employer who cannot abdicate his responsibility, the Green Paper is aimed at the insurer. There is however considerable benefit in looking at how Norris has affected US actuaries and how they have coped.

As far as individual policies are concerned the only approach taken by the industry was called "bottoming out" and consisted of pitching variable factors such as annuity rates at the level of the least favoured sex.

With group defined benefit plans with employer contributions however, the actuary can still use sex distinct assumptions for costing purposes but he has to use unisex assumptions for options such as early retirement factors.

1. A few companies agreed to "top up" the factors using the current factors applicable to the "favoured" sex.

2. About 41% of companies used a work force mix as a basis for blending male and female factors.

3. About 10% of companies used a 50/50 blending of male and female factors.

4. About 12% of companies opted for a blending on the basis of the percentage of male and female employees electing optional benefits at retirement, This represents a nil cost to the employer although these calculations would be upset if the number of females electing options in the future were to rise.

5. About 8% of companies used a "bottoming out" approach using the "least favoured" sex in 100% of cases.

Finally Group defined contribution schemes had a choice between allowing cash options and offering "least favoured" annuity options as for individual plans or disallowing cash options and offering annuities based on a blended basis.

FOOTNOTE A fuller version of the above paper was presented at the Convention. Copies can be borrowed from the Institute library, or may be available direct from the author while stocks remain.

Summary of Discussion

During the first part of the session, Pat O'Keeffe took us through his written presentation, emphasising the stark fact that smoking cigarettes induces not just smokers' cough, but a killer disease.

He also drew attention to the distinction between the proposed practice in UK with what has happened in USA, as regards unisex rates, in that Mr Fowler is putting the responsibility on the Insurance Companies, but in USA the onus is put on the shoulders of the employer.

Pat finished his remarks by expressing some sympathy for Ms Pinder, in that, as a dentist, she might be able to raise an objection if her extra premium was based on the experience of all females, instead of being based only on the experience of lady dentists.

Clearly the great majority in this workshop were opposed to the idea of unisex rates, but it was agreed that Ms Pinder would have stood a better chance by not getting the EEC behind her (because the EEC were treating all women equally, and not discriminating between dentists and others).

As regards pipe smoking, one questioner enquired why there was such a difference in treatment between pipe and cigarette smokers, whereby pipe smokers were regarded effectively as non-smokers. No one seemed to know the answer, although it was suggested that the pipe smoker did not inhale.

There was a general interest in whether there was any evidence of special rates for smoker annuitants, particularly where a temporary life assurance proposal was made at the same time as one for an immediate annuity. It seemed, however, that, though special rates for annuitants were not granted except to a very minor extent, any increase in annuity was usually more than offset by finding a better normal rate from another office, the difference in assumed interest rate being more relevant.

There was discussion on whether there was a correlation of smoking with class or occupation. (Some examples were cited, but the general opinion was that everything was correlated with smoking, and so all we needed to know about was whether the proposer smoked or not.) The proportion of proposers for non-smoking policies was greater than that in the population as a whole: was this mis-representation, or were the smokers going to the "smokers" offices? No one had a ready answer for this, although it was noted that there had been problems in the USA, where specific checks were done inside one company, and it transpired that about 30% of the non-smokers were actually smokers: the office took it out on the sales force, and the problem has diminished. Lastly there seemed general accord that there was a trend towards more smoking by women.

A warning was sounded in respect of US experience since 1981, where it had been observed that the biggest killer in the 30-45 age group in 1984 was AIDS. It was felt that the UK would be liable to suffer a similar experience.

Finally, as regards the Fowler proposals, it was felt that insurance companies were going to be driven to offer unisex rates on the worst basis of mortality, and hence the proposals must be unfavourable to pensioners.

INVESTMENT : LONG TERM OBJECTIVES & SHORT TERM PERFORMANCE

A.J. Frost

The title of this session in itself implies a question - a rather hoary one. Is short term performance measurement compatible with the long term objectives of certain institutionalized savings funds, particularly, life assurance funds? I was impressed greatly by two of the papers presented at the 22nd International Congress of Actuaries last year - those by Arthur (1) and Hall (2). They provide a useful starting point for debate. A summary of the two papers is given in Appendix I. I also came across recently a note prepared by G.L.C. Touche (3) on 16 March 1971 (sic) in which he deplored the cult of performance which was just emerging. I reproduce extracts from his short note in Appendix II.

Arthur outlines the role of institutional investors as follows:

> "A purchase, from another investor, of previously issued stock does not in itself produce capital formation yet it is considered to be an investment. This is the activity with which institutional investors are normally concerned. Portfolio investment can occur without capital formation and is the process by which exchanges in the ownership of assets are made.
>
> For capital formation to occur savings must be made over and above the requirements of asset maintenance (if we assume that all savings are directed via financial institutions). These excess savings will be directed (largely) to the higher order producers (manufacturing for other parts of the production process rather than for consumers). Portfolio investment, taking place via the financial institutions, will include the direction of some of these excess savings (into new share issues, for example), but will also include the exchanging of existing assets on a large scale. This exchange process is a prime means of promoting the efficient use of capital, as well as the source of evaluation of new projects."

I hope that we can discuss the role of life companies and pension funds in these two activities viz. asset exchange on the one hand and new issue activity on the other hand. Short term performance measurement is ideal for measuring performance associated with asset exchanges in the secondary markets or even a British Telecom new issue. It is, however, singularly inappropriate for those funds with a heavy emphasis on unquoted investments and venture capital. To what extent has performance measurement inhibited institutional involvement in the direction of excess savings? Has short term performance measurement deflected the ability of "a fund's investment policy to harmonize with the common good".

Hall comments thus on the subject of performance:

> "The institutional investor is obviously vital to the financing of government expenditure, and also to major property development. But it is first and foremost in the ownership of UK equities that the role and responsibilities of the institutional investor are in the public eye. It is the author's fundamental belief that the investing institutions must not only be concerned but be seen to be concerned, about the financing of industry and their ownership responsibilities.........
>
> Every fund will be studying its investment performance. Yet in the author's view over-emphasis on short term performance is to be deplored. In its worst form it involves the appointment of several investment managers for several proportions of the fund, the assessment over a short period, perhaps a year, of their performances, against not always appropriate indices, and the dismissal at the end of the year of the worst performer or performers. It is to be hoped that this practice is dying out. Performance must indeed be judged, and a year is perhaps the most suitable time interval to use as a basis. The time scale over which to make a death or glory judgement of performance is considerably longer."

Is the "practice" dying out? Does short term performance measurement encourage "the financing of industry and their ownership responsibilities" or does it encourage the acquisition of the latest line of cheap, fashionable stock available at 3.25 p.m. on a Friday afternoon?

There is no doubt that Touche's words were prophetic. The last five years, indeed, have seen investment trusts under attack on grounds of performance (short term or otherwise) and many of them have had to adjust to redefined needs of their investors. Their activity in unquoted securities in some cases has been perceived as a hindrance. Yet a fund invested totally in quoted securities might be more cost efficient as an indexed or passive fund. See Hager's (4) comments on this.

Finally, the measurement of performance covers investments in unit-linked funds, unit trusts and pension funds. The measurement of performance of life funds by the media is effected usually by reference to policy proceeds rather than by examination of the underlying assets.

The differences between mutual companies and proprietary offices in relation to performance are self evident. It is argued that performance measurement for life assurance funds is difficult because each fund has a different liability shape reflecting the mix of with-profit and non-profit business and other actuarial factors. Nevertheless, if the non-profit business is stripped out together with appropriate matching assets (including mortgages, fixed interest stocks etc.) then the resulting with-profit funds of differing offices might be considered capable of comparison. The asset distribution shown by Hall in his paper reflects clearly the presence of non-profit business matched by bonds. Is there a case for developing an industry standard of comparison which is meaningful to non-actuaries? In the long run will published league tables and three or four pages of unit prices in the Financial Times become common to all savings media as traditional with profits business fades from the scene?

References:

1. Economics, Institutional Investment, and the Common Good, T.G. Arthur - Transactions of the 22nd International Congress of Actuaries

2. The Role and Responsibilities of the Institutional Investor, L.G. Hall - Transactions of the 22nd International Congress of Actuaries

3. The Cult of Performance, G.L.C. Touche; unpublished note

4. Measurement of Pension Fund Investment Performance, D.P. Hager - J.S.S., Volume 24, Page 33

APPENDIX I

Economics, Institutional Investment and the Common Good
T.G. Arthur

SUMMARY

The paper is a personal examination of the gains or losses to the community of institutional investment conducted in a free or controlled environment. The impetus behind it lies in the strong criticisms levelled at institutional investors in recent years.

Part A of the paper discusses economics and the common good, with particular reference to capital formation, interest rates, and allocation of resources and suggests that government action on interest rates will reduce capital formation and produce a misallocation of resources.

Part B applies the economic concepts of Part A in discussing the major charges levelled at institutional investors under the controls currently operating in the UK and the possibilities of altering those controls. It suggests that there is no case for encouraging saving through institutions by granting tax privileges, but that greater control will have adverse effects.

The Role and Responsibilities of the Institutional Investor - L.G. Hall

SUMMARY

Between 1957 and 1982 the percentage of all United Kingdom common stocks held by individuals fell from 69% to 26%; holdings by insurance funds rose from 9% to 20%; holdings by pension funds from 3½% to 29%. In the light of these figures the paper seeks to discuss some of the consequences of the institutionalisation of investment.

The flexibility of the benefit structure of United Kingdom funds is such that the constraints arising from the nature of the liabilities will influence investment policy but need not dominate it. The paper deals with the long term responsibility for the control of such large funds and the need to avoid a narrow and short term view; with the need to watch performance but not to overemphasise it and not to look at it too short term; with the effect of institutionalisation on the stability of markets; with the role of specialist

holding companies, often institutionally owned, in the development of British industry; with the responsibility of the big shareholder; with the place of the institutions in politics but outside party politics. The reduced power of the individual shareholder may be regretted, but its crucial consequence is that the institutions have an ever-increasing role. It is the author's view that they are filling it well and serving the national interest well. Yet they must never be complacent; there is much more for them to do.

APPENDIX II

EXTRACTS FROM THE CULT OF PERFORMANCE BY G.L.C. TOUCHE 16 MARCH 1971

One of the striking features of the investment scene during the last five years has been the great number of new men, mostly young, entering the field of investment management. Disenchantment with fixed-interest securities and the bull market of 1967/68 have created a new investing public, largely unsophisticated. As a result many promotors of new funds have made a great deal of money, with little knowledge or experience of investment management. The startling profits made by some funds of limited size and diversification during the bull market has been matched by startling losses during the bear market of 1969/70.

Owing to the ease with which the value of a fund can be computed, the performance of each fund can be readily ascertained, and a comparison made with other funds. The amount of money attracted largely depends on performance so that each fund manager is under pressure to beat his rivals in the period covered by his next report.

There has thus arisen a cult of performance, which I believe to be a great danger to sound investment management.

....

Dangers of the cult performance

The dangers of cult peformance are:

(1) the investor feels under pressure to produce a good showing in his next report and therefore tends to take a short term view;

(2) the investor who has made losses (as all have in a bear market) wants a big improvement to make good the losses. If he needs a 20% growth, a good sound investment which shows a

steady 10% annual growth will not serve his purpose. He therefore chooses an investment where there is a possible growth of 20%, without considering how weak this possibility may be;

(3) the failure of many 20-percenters causes him to look for others, and by being too active to debase the quality of his judgement. Obviously if one man buys 20 investments a month while another buys 2, the criteria which the 2 investments have had to meet are likely to be much more stringent;

(4) apart from the cost of high activity, the portfolio gets cluttered up with a number of failed 20-percenters, which it may take several years to eliminate. We have all been through this painful process.

....

Summary of Discussion

The speaker proposed a number of related questions in the investment area. There has been increasing interest in the measurement of the performance of investing institutions in recent years. This has been particularly noticeable in the growth of unit linked business and the development of performance measuring services for pension funds. Attention has been focussed especially on short term performance: unit linked offices sell their business on short term performance, and pension fund managers are judged on their rankings in the performance tables. Does this concentration on short term performance conflict with the long term objectives of the institutions involved?

A number of speakers felt that there was no real conflict; the long term was a series of short terms, and there was no readily found answer to the question "What investment would you make if you weren't concerned about the short term?" Clearly one would not invest in an asset if it was going to be worth less in 6 months time, however good a long term investment it might be. Others blamed intermediaries for the development - it was something they could easily understand - but life offices had gone along with them in their pursuit of sales. One speaker made the suggestion that performance tables should show figures for a number of individual years, thus demonstrating the variability of the return, rather than the current practice of giving performance from a number of dates in the past up to the current date, which tends to exaggerate the importance of the latest period. The importance of risk was noted, and it was suggested that more effort was needed to educate the investing public in the interaction of risk and reward.

A distinction was drawn between primary investment by institutions, exemplified by participation in new share issues and venture capital funds, and secondary investment, in which assets are simply transferred from one investor to another. Does concern with short term performance measurement tend to draw attention away from unquoted investments, which may provide a better long term return both for the institution and the community?

The view was proposed that the pursuit of performance was at odds with sound investment management; does the pressure on fund managers to produce quick returns detract from their judgment of investment opportunities?

Again, some speakers thought that there was no real problem: a worthwhile project would be able to show a profit in a short period, and would have no trouble in attracting the necessary finance. Scepticism was shown for projects promising long term returns which had a tendency not to materialise. Concern was expressed, however, at the possibility of venture capital operations not receiving sufficient attention, although the practical difficulties were pointed out. Such investments needed much more management effort than holdings in large companies; and there were inhibitions on venture capital where regular valuations were required for performance monitoring, but were difficult and expensive to obtain. The point was made by one speaker that the greatest source of venture capital was retained earnings of mature companies.

Institutions have assumed ownership of an increasing proportion of equities; their position places responsibilities on them which are in some ways greater than those of mere investors. Do short term performance considerations prevent them from exercising these fuller responsibilities?

The concept of social responsibilty in investment was generally appreciated, although some speakers felt that profitability should be fund managers' only concern. Some suggested that financial expertise, as well as money, could usefully be invested in industry; the possibility of direction of institutional investment was raised if the institutions were seen to be socially unaware. However, it was felt by some that venture capital was often in high technology fields which created few jobs.

SEGMENTATION OF THE LIFE FUND

G.D. Clay & D.W. Hanson

This brief introduction is deliberately simple and pragmatic rather than theoretical in approach. It consists of 2 snapshots of the operating environment 25 years ago and now, 2 definitions and a small number of objectives.

Firstly then the environment:-

25 years ago

Relatively simple business mix although pension content growing.

Relatively slowly changing investment environment.

High level of cash flow in relation to fund size.

Actuaries typically in charge of investment and bonus policy.

Comfortable dialogue concentrating on how to deal with the boom in equity and then property values.

Now

More complicated business mix - consider the number of product and marketing sessions at this convention.

Swiftly changing conditions - the Chancellor said one thing on CGT in his budget, a second in the Finance Bill and a third in the Act.

Segregation of Pension Fund Business.

Unitization of Individual Long Term Business.

Much reduced cash flow in relation to fund size.

Actuaries no longer automatically in charge of investment policy - in our case none of the top 3 and only 2 of the top 12 investment personnel are actuaries.

The cacophony of short term perfomance reviews, league tables and client reports drowns the smooth strings, or should we say the fiddling, of the actuary playing his reversionary bonus violin.

Many more investment opportunities - no exchange controls, index linked gilts, futures, options etc.

This discussion is seen as a framework for the very necessary dialogue between actuaries and investment managers, with product designers and the taxation manager also present.

Not present at the table but of critical importance are the policyholders and in our case shareholders to whom these monies belong and in whose minds exist expectations, reasonable and unreasonable, about the benefits which they will receive. Expectations which are often created by salesmen or intermediaries whose actions are difficult to control.

In looking at this subject the US offices led by the Equitable concentrated on an investment year approach applied to their portfolios of unmarketable long term fixed interest assets. The US actuary's interest in equity between generations led to changes in the investment managers brief and hence a decreasing proportion of unquoted assets.

Our interest which started with an actuarial rather than investment bias has to recognise the high proportion of equity type assets typical of a UK life fund. This led us to a unitized rather than investment year approach.

In our definition of Segmentation all assets of one type eg UK Equities are held in a unitized pool. The units in these pools are held by the different lines of business in proportions which vary in accordance with their investment policy. There may be 10 or 12 such pools and perhaps that many lines of business whose progress the actuary wishes to monitor. It may not be the case that every line of business has a unique investment policy.

An alternative approach which we would call Segregation would involve the allocation of individual assets to each line of business.

Our ambitions in considering Segmentation relate to:-

- Relative profitability of different lines of business

- Allocation of emerging profits

- Fixing of different investment policies for different lines of business.

- Variation of investment policy with bonus policy

In an attempt to unscramble the cross-subsidies and approximations arising from a single compressed investment strategy we are attempting, perhaps rather heroically, to improve the equity of treatment between

- One class of policyholder and another

- One generation of policyholder and another

- Policyholders and shareholders

Although our approach is essentially practical rather than theoretical we ignore many practical problems like expense allocation, the E part of the I-E tax basis, the need to change both insurance and investment accounting systems in order to maximise the insight provided by segmentation.

Unless linked business is specifically mentioned, we are considering just conventional and generally just with profits business.

1 <u>Separation of IA business because of different asset needs</u>

IA liabilities (and non-profit deferred annuity in associated bonds) require backing by fixed interest assets and can be immunised or even matched. Almost all other liabilities require backing by a balanced fund.

a) <u>Tax effects</u> High yielding assets are needed to back effectively tax free business. Segregation rather than segmentation may be appropriate. Tax and solvency considerations are relevant.

b) <u>Investment implications for rest of fund - immunisation</u> The assets backing WP business (after removal of fixed interest to back IA business) have a low fixed interest content, perhaps 15%. This probably does not cover vested liabilities even on a proportionate paid up approach (t/n x SA + RB). Does this affect investment strategy? Is the Appointed Actuary aware of the implications? Do benefit expectations reflect this?

If IA business is not immunised, the risks falling on the WP business are increased.

c) Are rates offered too generous? Valuation strains and solvency margin IA business causes large valuation strains and requires a solvency margin. Such capital comes from the estate. If from the earmarked estate, are the WP policyholders adequately rewarded for risk bearing? (See 4 below for a definition of earmarked.)

Hence IA business, like term assurance, may be being sold on far too generous terms.

2 Taxed and untaxed business in a single taxable entity

a) Simple examples in tables at end of paper The examples consider I but not E and greatly over-simplify taxation. The figures may not be of general significance, but they are interesting.

(A) A multi product office pays more tax on income than corresponding single product offices.

(B) Reducing the gilt proportion backing EAWP reduces the tax payable - good - but worsens the position relative to single product offices - very bad.

(C) Less gilts backing EAWP suggests less RB, more TB and hence reduced liabilities. The effect is to reduce tax and reduce the penalties on the multi product office.

The conclusion to be drawn is that investment strategy, taxation, valuation bases and bonus strategy are intimately interconnected and that segmentation can provide a useful control framework.

(Note that CGT effects operate in the opposite direction to income taxes.)

b) Can single product offices compete with multi product ones? I-E with excess E hampers new offices. A growing proportion of tax exempt business reduces the provision required for deferred CGT. This might lead mature offices locked into high gains to start subsidiaries to write all taxed business, but I-E effects run contrary to this. There is no simple answer.

c) Investment activity Taxed funds are naturally less active than untaxed because of CGT. A combined fund behaves as a taxed one. Do offices use part of the presumed overall tax saving to compensate the untaxed business for the adverse effects of low activity?

d) Relative competitiveness of an office can vary widely between different lines of business. Why? Some offices achieve performance ranking high for exempt business and nowhere for taxed business - and vice versa - Does this reflect different views on (c)? or what?

3 Contracting lines (e.g. closed funds)

a) There is variability of unit price with no change in the value of the underlying assets. What are corresponding effects for conventional business? Unit linked business was perceived as totally fair and non-discretionary. However the unit price can move in a 13% range and the CGT provision can cause further variation.

b) Bid/bid price If a unit trust/linked fund closes and hence contracts, the unit price immediately falls about 10%. What corresponds for conventional business?

c) CGT deferral For linked business, the outgoing policyholders receive a credit from the deferral of CGT. Do TB declarations include allowance for a similar deferral? Does the benefit go to policyholders of that line, all policyholders, shareholders or the estate?

d) Asset balance/compulsory buyer In a non-segmented fund, the contracting line automatically transfers surplus assets to expanding lines. On a segmented approach, they may not be willing buyers because of the effect on their asset distributions. Should this force bonuses on the contracting lines onto a (partial) bid/bid basis? If not, do the costs fall on new business, the estate or what?

4 Equity and the estate

a) Earmarked estate and free estate The estate means different things to different actuaries and for any actuary the meaning varies with the context. We consider it on a retrospective asset accumulation basis and divide it into two categories.

i) Redington in his paper 'The flock and the sheep' (JIA Vol. 108 p361 (1981)) suggested that policyholders lend money to the estate while their policies are in force and receive it back at the claim stage as part of the TB. This is the earmarked estate and is the net difference for all in force business between retrospective asset shares and prospective published valuation liabilities. It will be negative for short duration policies.

ii) There is also a free estate whose origins are obscured by the mists of time. It does not arise from existing policies directly. Sources include underdeclarations of bonus on former policies, surrender profits, undistributed profits on non profit business, shareholders' funds from original subscriptions or dividend restraint and miscellaneous surplus on current business e.g from tax saving in a multi-product office.

The earmarked estate must be relatively liquid because claims can occur. The free estate need not be. Apart from this rather theoretical difference they may be used equally to cover such needs as valuation strains and solvency margins.

b) Should one confine the estate within each line of business? If the fund had been segmented ab initio, the free estate would have been developed within each line of business. Is it right to divide the free estate as well as the earmarked estate by line of business? If so, what happens with a fast declining line (e.g. IB)? Tontine bonuses?

New lines of business require capital which normally comes from the free estate (or shareholders). One remunerates shareholders. Should one remunerate the line of business that generated the free estate?

c) Justifiable uses of free estate Is it equitable/justifiable/reasonable to use up the free estate? To use its income (real or nominal) to boost bonuses? To fund capital expenditure on computer systems or marketing structure? Does good stewardship require maintenance of any absolute level of free estate?

d) <u>Is equity between lines of business more or less important than equity between generations within each line?</u> Actuaries claim to seek broad equity between generations via bonus smoothing. Is equity between lines of business achieved?

All policies have equal claim to the assets of the whole fund if solvency is threatened, so some actuaries advocate 'one indivisible fund' for distribution of surplus considerations. Others are concerned for each line of business to be able to compete with single product offices, whether conventional or linked, and therefore favour segmentation.

Simplified comparison of the taxation of three hypothetical offices

Example 1

£ million

Line no	Office/ asset	MV of assets (a)	Published mathematical reserves (b)	Investment income (c)	Taxable income* (d)	Tax rate (e)	Tax payable (f)
	A(Pensions IA)						
1	Gilts	1 000	900	100	0	n/a	0
	B(EA)						
2	Gilts	1 200	-	120	120	0.375	45
3	Equities	2 800	-	140	140	0.3	42
4	Total	4 000	2 400	260	260	(0.335)	87
	C(EA+IA)						
5	Gilts	2 200	-	220	160	0.375	60.0
6	Equities	2 800	-	140	101.8	0.3	30.5
7	Total	5 000	3 300	360	261.8	(0.346)	90.5

Example 2

£ million

Line no	Office/ asset	MV of assets (a)	Published mathe-matical reserves (b)	Invest-ment income (c)	Taxable income* (d)	Tax rate (e)	Tax pay-able (f)
	A(Pensions IA)						
1	Gilts	1 000	900	100	0	n/a	0
	B(EA)						
2	Gilts	800	-	80	80	0.375	30
3	Equities	3 200	-	160	160	0.3	48
4	Total	4 000	2 400	240	240	(0.325)	78
	C(EA+IA)						
5	Gilts	1 800	-	180	130.9	0.375	49.1
6	Equities	3 200	-	160	116.4	0.3	34.9
7	Total	5 000	3 300	340	247.3	(0.340)	84.0

Example 3

£ million

Line no	Office/ asset	MV of assets (a)	Published mathematical reserves (b)	Investment income (c)	Taxable income* (d)	Tax rate (e)	Tax payable (f)
	A(Pensions IA)						
1	Gilts	1 000	900	100	0	n/a	0
	B(EA)						
2	Gilts	800	-	80	80	0.375	30
3	Equities	3 200	-	160	160	0.3	48
4	Total	4 000	2 000	240	240	(0.325)	78
	C(EA+IA)						
5	Gilts	1 800	-	180	124.1	0.375	46.6
6	Equities	3 200	-	160	110.3	0.3	33.1
7	Total	5 000	2 900	340	234.4	(0.340)	79.7

Notes

* It is assumed that there are no true pension business taxable profits. Hence for office C, the expenses attributed to EA business for tax purposes would be undistorted (ie the same as for office B). Thus expenses are ignored throughout.

$$5d = \frac{4b}{7b} \times 5c$$

$$6d = \frac{4b}{7b} \times 6c$$

ie income is apportioned in proportion to the (mean) mathematical reserves.

For comment, see section 2(a) of paper.

Summary of Discussion

Following the chairman's opening remarks, the presenters explained that their interest in segmentation arose from their attempts to establish a consistent structure within which to control investment policy for, and identify cross-subsidies between, the wide range of different products that companies now write. These issues are to an extent automatically resolved for unit linked policies because of the unitisation of their underlying assets and much of the presenters' own researches have stemmed from considering the implications of such unitisation being applied to the assets underlying conventional business.

"Segmentation" is defined as "the holding of all assets of one type (for example UK equities) in a unitised pool. The various lines of business hold units in accordance with their investment policy" and, in answer to a question, the presenters emphasised that the assets were the actual assets held by the office concerned, and not a national portfolio.

When the allocation of assets between product lines had been attempted in practice by the presenters, they had apportioned matching assets to without profit business and then compared the remaining assets with the liabilities of the with profit business. This was done to identify the degree of mismatching, if any, of the guaranteed liabilities of the with profit business and to decide which assets were making up the estate of the office.

It was commented that this approach laid heavy emphasis on the concept of strict matching. One speaker felt that one of the strengths of conventional insurance business was its ability to bring together unmatchable individual liabilities in such a way that the overall liabilities could be matched. Therefore an attempt to match individual product lines was bound to give odd results for some of these products. Another speaker felt that, for offices with large free reserves, strict matching was unnecessary, and his preferred approach was to use notional matched assets for product lines with the estate holding the balance of assets between those actually held and those notionally required for the product lines, which might involve hypothetical negative asset holdings. The strength of this approach was to recognise the ability of a large estate both to lessen or remove the need for strict matching of liabilities, and also to finance solvency margins with little or no loss of investment earnings. The presenters felt that although this latter approach was workable while large free assets were available, their own procedures could be applied in all circumstances. On the control of the estate, the presenters explained that they believed the estate fell into two parts, the 'earmarked' estate, defined as the difference between the retrospective 'asset shares' of the policies and their prospective valuation, and the 'free' estate which has arisen from funds unattributable to any particular policy. In their attempt to apply segmentation principles to their own office, the presenters had been undecided as to whether this 'free estate' should be notionally distributed to each product line or left as an identifiable separate segment used to finance new product development and to act as a source or receiver of cross-subsidy. The latter approach received more support from the meeting.

The meeting then discussed how the use of segmentation could be extended with the presenters saying that they hoped to use the approach eventually to monitor the profitability of product lines, although it was admitted that segmenting expenses would be extremely difficult and probably require a complete redesign of an offices' management accounts.

Cross-subsidies arising between products because of taxation may also be investigated, and the presenters demonstrated such cross-subsidies with a set of example tax calculations. It was also noted that, in comparison with unit-linked business where much thought goes into producing equitable treatment of CGT liabilities between unit-holders, conventional business does little to monitor the transfer of assets or deferred capital gains tax liabilities between generations of policy holders. This view was endorsed by the meeting with speakers noting that as some classes of business contract, so assets are unwittingly passed onto expanding lines.

In the area of performance measurement, one speaker asked whether the investment manager's activities could be examined through segmentation. The presenters felt this was not as easy as it might seem because investment managers tended to make decisions bearing in mind the composite tax rate suffered by the fund overall rather than the rates on the net and gross portions separately. Another speaker noted that investment managers will keep their dealing activities to a low level on the whole of the life fund in order to avoid incurring capital gains on the taxed part of the funds, thereby depressing what might be thought of as the normal dealing levels for the gross portion of the funds.

The discussion then turned to the tension between the need for equity between product lines inherent in the concept of segmentation and the need to compete effectively for new business. Several speakers felt that the strength of segmentation was that it identified cross-subsidy but that it should not be a constraint to such cross-subsidy, particularly as one of the strengths of with profits business is that it gives the policyholder a smooth investment performance which necessarily involves cross-subsidies.

One speaker did however call for more equity between product lines, especially with profit ones, as he felt that market pressures were currently leading to unsustainable bonus declarations which must be storing up problems for the future.

The chairman summarised the meeting as an almost unanimous endorsement of the need for segmentation, and called for more work in this area to further improve the general understanding and awareness of the nature of the cross-subsidies in conventional business.

REASONABLE EXPECTATIONS : BONUS & GROWTH ILLUSTRATIONS

F.R. Wales & C.S.S. Lyon

The two speakers gave separate presentations, which are summarised below.

Illustrations of future benefits for both traditional with profit and, to a lesser extent, unit linked business, have become a cause of major concern in the industry. Few of you can have failed to notice references in the press and elsewhere to this problem. Not surprisingly, there has also been much discussion both within the LIC and the Institute Council. Currently an industry working party is attempting to produce an answer to the problem.

But why the concern? For the last 10 years or so we have enjoyed a virtually unbroken bull market in equities. For much of this period gilt yields have been at very high levels. Indeed, just over 10 years ago they reached 19% or so. However, with falling inflationary expectations, interest rates have gone down and there is a real prospect of single digit yields on British Government securities. This, of course, is the best possible scenario for the achievement of outstanding investment results. Consequently, bonus rates are at record levels. The reverse of the coin is that reduced inflationary expectations and lower interest rates lead to a reduction in future investment returns, with a very real prospect of a fall in reversionary bonus rates. At some stage also it is not unreasonable to anticipate a bear market in equities, which would put additional pressure on terminal bonuses. So to sum up, we have seen exceptionally favourable investment returns in the recent past and we face the future with a likelihood of sharply reduced returns. In this scenario, no actuary in his right mind would take ones year's performance and project it indefinitely into the future for the purpose of illustrating possible beinefits, but this is standard practice in the with profits world. Advertisements along these lines are commonplace. "Telephone numbers" are illustrated, providing pensions in excess of current income, with a simple caveat that projected benefits assume current bonus and annuity rates continue; no warning that rates could actually fall and no suggestion that terminal bonuses are particularly liable to fluctuation.

At least unit linked companies do not take one year's past performance and project it into the future. The normal practice in the industry is to take two assumed growth rates and to point out that the projected benefits are provided purely for purposes of illustrations and that unit prices could go down as well as up. Nevertheless, there are still unsatisfactory features to many illustrations. Growth rates are normally applied to unit prices rather than to the underlying fund. As a result differences in expense charges are hidden. In some cases benefits are illustrated using a standard growth rate, but without allowing for redemption at bid price. In this way another expense loading is disguised by elimination of the bid/offer spread. Frequently, attention is drawn to past performance without making the caveat that such performance is no guide to future investment returns. Worse still, in some cases, past performance is illustrated in such a way that suggests that the standard growth assumptions used are ultra-conservative. Finally, there are even cases where unit linked offices do not make appropriate caveats regarding the risk of price fluctuations.

One further problem common to both unit linked and with profits business is the lack of any reference to inflation in illustrations. Bonus rates illustrated are based upon performance during a period of high inflation. Hence, any projection based on these rates must assume implicitly continuance of inflation in the future. It seem to me essential that pension illustrations should always be presented in real terms, i.e., either projected benefits should be deflated or current earnings inflated.

Now I have touched on some of the causes of concern, but before one can consider what to do about it, it is important to ask "why prepare illustrations at all?" Just what are their objectives? I have been able to identify two purposes for providing illustrations. The first is to help in the determination of savings objectives, including pension funding rates where a money purchase vehicle is being used. Needless to say, in these circumstances the inflation question is particularly important. The other purpose of illustration must be to provide competitive comparisons between companies.

Now, of course, life assurance is not the only investment medium available for accumulating savings. So it is interesting to note how other organisations cope with the problem. For instance, let us consider Building Societies. In a recent advertisement, current rates of interest payable on the advertised account are clearly stated. Immediately underneath there is a clear caveat "Please note interest rates may vary". In the coupon it also states "I/we understand the rates might vary". "I/we understand that the interest will be credited annually on 1 September to this account". No projections are made of future performance and clear and explicit caveats are included. This is an example of Building Society practice, although not all are of this high standard.

Moving from the staid world of Building Societies to the realms of speculation, how are commodities futures illustrated? Not surprisingly there are glossy brochures pointing to the vast profits that can be made. However, to be fair, there are real case histories showing a range of results including actual losses. Furthermore, the application form is a model example of how the relevant facts can be brought to the client's attention.

Next, let us consider the world of unit trusts. In this particular world we have an additional party to consider, the trustee. All prospectuses and advertisements need his approval and this ensures a good basic standard for the industry's promotional material. However, Managers who are members of the UTA must also conform with that Association's advertising code of practice. It is not normal practice for unit trusts to provide illustrations of projected benefits or investment results.

Finally, what about direct investment in equities? Shares are sold either by public offer or through the Stock Exchange. In the former case the "illustration" is the prospectus and in the latter, it is the broker's circular. In neither case is any form of price forecast given - short term profit forecasts yes, and historic earnings, yes - but never any form of long term projection of total return on investment.

Bluntly, my review of other media indicates that we are unique in providing long term illustrations and that our practices are inferior - even downright misleading. So what are the solutions? For unit linked, the issue seems straightforward - an appropriate industry agreement or MIB ruling could correct the malpractices mentioned earlier. However, for with profits, matters are not so simple. Three possible solutions are currently being canvassed. The first is to apply a standard reduction factor to current bonus rates and illustrate using the resultant reduced rates. This, of course, suffers from the defect of continued over-emphasis on one year's performance. Furthermore, one arbitrary factor cannot be equally appropriate for all offices.

The second is to accumulate gross premiums at two standard rates. This can be criticised for oversimplicity, and its failure to allow for mortality costs would give particularly misleading results - as does the omission of any provision for expenses.

Intellectually, the most attractive solution seems to me to be the accumulation of net premiums, after deduction of provisions for mortality and expenses, at two standard growth rates. But how should the mortality and expenses provisions be determined? Should they differ between offices to reflect actual experience? And, could the public understand the presentation? These are knotty questions. However, whatever basis is finally adopted I feel we must have a clear and explicit code of conduct that ensures that in all circumstances the appropriate caveats are made and understood - and the codes for unit-linked and with profits should ensure the two classes are illustrated on consistent bases.

At the beginning I suggested we had a problem - do you agree? If you do, before we can solve the problem we should define the objectives of an illustration. What do you think they are? Finally, I have suggested some solutions to the problem. What are your views on those suggestions?

FRW

The profession's guidance to Appointed Actuaries includes the following:

GN1

1.1 .... It is incumbent on all appointed actuaries to ensure, so far as is within their authority, that long-term business is operated on sound financial lines.....

3.3 .... The appointed actuary, as such, has no executive authority within the company .... (his) duty is to advise the company on those matters relevant to his statutory duties .....

5.1 .... A prime responsibility must lie with the appointed actuary to satisfy himself that the premium rates being charged for new business are appropriate. That is to say they should be sufficient to enable the company in due course to meet its emerging liabilities .....

5.2 .... The adequacy or otherwise of premium rates cannot .... be other than a matter of judgment .... in exercising this judgment (the actuary) may reasonably have regard to the free estate of the company.

7.1 .... most of the problems with which the appointed actuary is concerned are not capable of precise assessment but are .... matters of judgment. In some circumstances, this judgment may appropriately be based on the actuary's estimates of the most probable outcome - perhaps, for example, in relation to bonus distribution .....

(This is the only mention of bonuses in GN1!)

GN8

2.1.3 .... Actuarial principles require the actuary to pay due regard in his valuation to the future interests of with-profit policyholders notwithstanding the fact that Regulations 55 to 64 do not specify the point. This may well necessitate his making other investigations to satisfy himself as to the pace of emergence of surplus.

(This is the only -- oblique -- reference to reasonable expectations.)

May 1985 addition to GN8

1.4 It is the appointed actuary's professional duty to report in writing to the Company, at an appropriate level of authority, on the results and implications of any valuation which he carries out for statutory purposes, whether or not a distribution of surplus is involved. If there are policies which participate in profits he should advise on the conditions in which the company could reasonably expect to be able to maintain its current rates of bonus, allowing for any changes in such rates that may be envisaged as a result of the valuation.

Does this guidance go far enough? Indeed, can guidance to the appointed actuary ever provide a sufficient safeguard against abuse of the discretions that are inherent in the systems of bonus distribution customarily used in this country? The appointed actuary, or some other actuary, may advise the company on what bonus rates should be declared or illustrated, but the power of decision rests with the company's board and management. They have to reconcile the actuary's advice with the marketing pressures.

Let us suppose that the industry, with the advice of the profession, resolves the problem of bonus projections - or that MIB does the job for it. Comparisons between offices will then focus on past performance. Would it be satisfactory for such performance to be measured in terms of current maturity values?

I see three problems:

(1) The difficulty of interpreting emerging nominal maturity values in an age of inflation - and highly volatile inflation at that. Richard has mentioned s.32 buy-out policies. What about personal pensions?

(2) The absence of any legal responsibility on a company to distribute surplus equitably between generations and classes of policyholders. This is reflected in the absence of any professional requirement for the appointed actuary to have regard to equity when making bonus recommendations.

(3) The power of terminal bonus and the lack of inherent financial discipline in its declaration.

The first problem - putting emerging maturity values into the context of the history of inflation - could be solved given the will to do so. It falls into the same category as forward projections.

The second problem - equity in bonus distribution - is more difficult. But let me ask you a question. At a time when with-profit life assurance is only one of a number of long-term savings media, and when investor protection is an accepted necessity, how long can we expect to get away with the present degree of freedom in determining and distributing surplus? This question is sharpened when considered in the context of the third problem, namely the lack of inherent financial discipline in the system of terminal bonuses.

CSSL

Summary of Discussion

1. Introduction

There was a discussion following each presentation. Contributors to the discussion referred to the problems regarding projections, the objectives in providing projections, possible solutions to the problems, and the role of the appointed actuary.

2. Discussion of the problems

Contributors felt that there is now more public awareness and interest in the possible results of investment opportunities. Disclosure of sufficient information to enable a client to assess the meaning of a particular projection was felt to be a likely requirement following the formation of MIBOC. It was also suggested that more disclosure is consistent with the financial reports to members of pension funds. Particular problem areas mentioned were that:-

(i) projections using increasing premiums could be misleading.

(ii) unit-linked projections coupled with a comparison of how a unit price has performed over a period could also be misleading.

(iii) a difficulty exists in controlling the projections prepared by intermediaries and branches.

3. Objectives in providing projections

(i) comparison between offices for client

(ii) comparison between offices for intermediary

(iii) comparison with other investment media

(iv) sales aid

(v) indication of reasonable expectations

(vi) indication of the order of magnitude of benefits in real terms

(vii) avoidance of client being misled (investor protection)

(viii) indication of strength and stability of with profit fund

(ix) need to compare money purchase and final salary pension schemes

One contributor suggested that following a projection at the outset projections should be provided over the years to lead the policyholder towards accepting the maturity value that emerges. Another suggested that other investment media are likely to produce more projections in future and that the life assurance industry had the opportunity of leading the way. It was stated that comparison of projections for competitive reasons is not relevant after a policy has been effected.

4. Possible solutions

For with profit projections several contributors supported the accumulation of net premiums at alternative growth rates. Various methods that could be used as a basis for such projections were suggested. Comments made regarding the difficulties in setting a basis for accumulating premiums included:

(i) whether standard assumptions should be used or whether the appointed actuary should have the responsibility for determining suitable rates of accumulation which had regard to the office's past investment performance; it was suggested that the actuary could face problems in dealing with directors or the marketing side if the latter approach were used.

(ii) whether the use of gross or net premiums (or both) would best enable meaningful comparisons to be made with other types of investment.

For with profit projections there was some support for removal of terminal bonus or more differentiation between reversionary and terminal bonuses.

Some contributors were unhappy with the idea of with profit projections being related to either gross or net premiums. It was suggested that such an approach would not be easily understood by clients (particularly IB), ignores past investment performance, and may mislead a client regarding the position on surrender. On this last point a comparison with the early leaver problem and the publicity it produced was made. These contributors preferred a reduction of current bonus by a percentage and felt that the percentage should be decided by the actuary or by reference to the returns to the Department of Trade.

The argument that projections should have regard to the strength of the office (as measured by the Estate) was refuted by the counter argument that the more new business was transacted the more the "new money" return was of importance.

It was suggested that unit-linked and with-profit projections should aim to show benefits in real terms and should therefore be adjusted to allow for possible rates of inflation. It was suggested that the ratio between projected benefits and net premiums should not exceed the yield on index linked bonds. It was suggested that any projections showing the effect of growth and inflation rates should indicate that rates may be more or less than shown.

5. Role of the appointed actuary

There was some concern that the role of the appointed actuary with regard to projections is not clear. Particular points made included:

(i) disclosure to clients on the same lines as information provided to directors on sustainability of current bonus rates may be justified in view of the general increase in public awareness

(ii) the problem of achieving equity in bonus declarations between classes and generations of with profit policies which leads on to projection difficulties

(iii) the actuary was the only individual likely to care about equity and the quality of advice as well as being able to advise the board

(iv) more guidance to appointed actuaries by the Institute and by the GAD would be welcome

(v) guidelines would enable the actuary to deal with the board in connection with any standard approach adopted and would help the actuary deal with the pressure which may be put on him by the directors or the marketing area

(vi) a contributor described the position in Australia where very high projections appear to have led to more control by the authorities and more power being given to the actuaries.

VALUATION REQUIREMENTS: BASES & METHODS

C.J. Brocksom, C.L. Cannon & R.J. Squires

The three speakers made separate presentations, which are summarised below.

Introduction

I would like to put forward some points which might act as leads to a useful discussion on the problems associated wih the UK statutory valuation. I shall confine my remarks mainly to UK traditional business because Mr Squires will be talking about unit-linked but I would like to start by referring to overseas business.

Overseas Business

When overseas business is written though a branch of a UK insurance company, the Valuation Regulations obviously apply. Less obviously, they also apply to business written through a subsidiary of such a company in that they have to be used in calculating the value of a dependent company for inclusion in the schedule of the parent company's assets. There are three points I would like to mention:

1. The obvious problem created by the extra work imposed on local management in either revaluing on the UK statutory basis or producing the data for the valuation to be completed in the UK.

2. The possible irrelevance of fixed aspects of the statutory basis like the future rate of interest of 7.2%.

3. Contracts can be very different from those issued in the UK; for example the range of unit-linked business is not constrained as it is in the UK by the permitted link regulations.

I wonder whether we have sufficiently considered with the DTI the possibility that local statutory bases could be used where there is a comparable control legislation; for example in other Common Market countries. I am not, of course, suggesting that the prudency requirements of Regulation 54 should not apply; I am more concerned with the detailed requirements of Regulations 55 to 64.

UK business

Turning to traditional UK business, there are a number of different areas yet to be fully explored. The framework which we have leads me to suggest three ways in which the details of valuation bases can be settled and we can look at the various elements under these three headings:

Firstly, details spelt out in the regulations.

Secondly, more precise definitions in Institute and Faculty guidance notes.

Thirdly, elements which can safely be left to the appointed actuary, within the overall definition of his or her responsibilities.

Regulations

In the first of these, I would put matters about which there is, or can be, no concensus view but which are of such significance that there would be a major competitive advantage to an office which used a weak assumption. The future rate of interest is a matter which can hardly be laid down in guidance notes and a common standard needs to be specified in regulations. Until recently, an office could move its assets wholly into gilts and, unless there was a change in legislation, it would know that there would be an upper limit to the tax rate. Now there is no such protection, so do the regulations need to be more specific regarding future tax rates?

There is no common standard yet for mismatching - I believe there should be. Offices have a wide range of mixes of both assets and liabilities so we need to give careful consideration to the alternatives before suggesting a suitable approach. However, if the purpose of the regulations is to demonstrate that an office can meet certain standards, and if it is generally recognised that an office cannot protect its position so as to give this demonstration in all conceivable circumstances, what range of circumstances should the actuary use for the purpose of Regulation 55?

Would it not be better for the DTI to stipulate the boundaries of general market conditions within which an office can be expected to demonstrate these standards so that, if conditions were outside these boundaries, other mechanisms would apply? A mechanism that I have in mind is that the DTI can, by order under Section 68, exempt an office from meeting some of the requirements of the valuation regulations. The department could, for example, indicate the circumstances under which an exemption would be made and the conditions which they might then apply.

Guidance Notes

Under the second heading, I turn to the subject of bonuses. We could spend some time discussing the purpose of the statutory valuation; how far, for example, should it go beyond a pure test of solvency. Regulation 54 requires the use of 'actuarial principles' and 'prudent assumptions' and the guidance notes say that 'actuarial principles require ...due regard ...to the future interests of with-profit policyholders.' Presumably these future interests are intended to include future bonuses - perhaps on reasonable expectations (whatever they might be). My office publishes a bonus reserve valuation, backed by a demonstration complying with Regulation 57; I shall be interested in hearing how others interpret this guidance.

On a separate point, if an office were totally invested in long gilts, the yield on its assets at the present time would be about 10½%. The valuation could be carried out assuming, before tax, 9.7% on existing assets but no more that 7.2% on investments to be made after the next three years. The guidance notes are silent on how to handle such a mix of interest rate. It has been argued that the Regulations would not permit the use of a V2 method. Perhaps a weighted average could be used - has anybody devised a suitable technique for doing this?

Actuary's discretion

Finally, under the third heading, I will mention two points with a common theme. The allowance to be made for options is a complex matter requiring the assessment of probability factors which could be functions of the pattern of future interest rates. Mismatching provisions may require several valuation runs using different interest rates and the calculation of option provisions can extend the work involved at no small cost.

Secondly, the Regulations require that no contract shall be treated as an assset. This should require not just the elimination of negative values but the creation of a reserve at least equal to any outstanding premiums, non-forfeiture system debts and policy loans taken elsewhere in the returns as current assets. The matching of accounting items with actuarial reserves requires complicated computer system linkages.

These are two examples where the process of the statutory valuation can prove more costly than might be justified. How far can the appointed actuary exercise his judgement about the significance of certain items in order to contain costs?

CJB

I would like to comment on the GAD interpretation of Regulation 55 which sets out the requirement for a mismatching reserve.

> <u>Mismatching reserve (Regulation 55)</u>
>
> "55. The determination of the amount of long term liabilities shall take into account the nature and term of the assets representing the long term fund and the value placed upon them and shall include appropriate provision against the effects of possible future changes in the value of the assets on their adequacy to meet the liabilities"

The regulation itself is drafted in rather general terms because of the difficulty of spelling out in regulations all of the detailed aspects of the approach to this complex subject. It is necessary therefore to turn to the guidance notes issued by the professional bodies in support of the formal regulations for a clearer indication of what is expected.

The Additional Guidance Notes, issued in October 1983, contain the following key passage in paragraph 3.2.

> <u>Additional Guidance Note 3.2</u>
>
> "The essential point is that if changes, for example in market yields or currency values, would result in a change in the aggregate liability that is not matched by a change in the value of the corresponding assets, then

Regulation 55 requires the actuary to consider what provision is required as a contingency margin, having regard to the consequences should the provision prove to be insufficient."

We take this as supporting our view that the regulation requires the actuary to consider what would happen if there were an immediate rise in interest rates and an immediate fall in the value of equities having regard to the fact that liabilities would have to be set up to satisfy the requirements of the regulations, including Regulation 59.

It will be noted that this goes considerably further than the traditional matching concept, since a strain in this sense could arise as yields go up, even if the assets are perfectly matched to the liabilities. The strain arises from the greater margin required by Regulation 59 as interest rates go higher. A strain could also arise in respect of regular premium contracts because of the relative insensitivity of the net premium reserves to changes in the rate of interest.

There may be some doubt about the interpretation of paragraph 3.2 arising from the inclusion of the words "having regard to the consequences should the provision prove to be insufficient". The consequences referred to could be taken to mean the actual insolvency of the company, because it is unlikely to be able to fulfill its existing contracts, rather than the technical insolvency of the company because it is unable to maintain reserves as strong as required by the regulations. We believe, however, that a company's mathematical reserves ought to be sufficiently resilient to changes in market conditions to ensure that it does not have to stop writing new business just because interest rates rise by a few points. A closed fund position would not accord with the expectations of with-profits policyholders to be associated with an active company and would usually be an unattractive prospect for policyholders even in a wholly non-profit fund. There must always be doubts about a company's ability to cover its overheads as the fund runs down and a transfer of engagements at some stage is almost inevitable.

The precise range over which ability to meet the regulations should be tested should remain, we believe, a matter to be covered by professional guidance notes rather than in the regulations themselves since some degree of flexibility is desirable. The Additional Guidance Notes, in fact, do not give an actual basis for assessing the mismatching reserve but refer to the actuary using his professional judgment as an experienced financial practitioner in order to determine an appropriate range of possible future changes in the values of assets which should be considered.

This approach is not particularly helpful to GAD since in principle we must apply a common standard in testing the mathematical reserves of different companies. In practice, therefore, we in GAD need to adopt a general working standard on which to base our advice to the DTI about the adequacy of any particular company's reserving basis.

In determining this standard it seems appropriate to have regard to the maximum levels to which interest rates have risen in recent years, and the speed at which they have changed at certain times. The yield on Consols reached a peak of 17.6% on 11 December 1974, whilst the yield on the 20 year gilt index was 16.3% on that day and rose slightly higher to 16.5% on 3 January 1975. This was the highest point reached, although yields on 20 year gilts of over 13%, and sometimes over 14%, were common throughout 1974, 1975 and 1976. The most rapid changes in interest rates which we have experienced took place in 1973 and 1974. In 1973 they rose by some three percentage points from January to December, whereas in 1974 the corresponding rise was five percentage points. A fall of four pecentage points took place from January to November 1982.

One possibility would be to use as an upper limit the highest yield reached on relevant gilts but that could be over-stringent when current yields are considerably lower, as now. Moreover if some of the matching assets are invested in fixed interest securities other than gilts, a yield differential should be applied. It seems preferable, therefore, to use a defined movement up or down from the current actual yields. We have concluded as a practical expedient that for Regulation 55 purposes we should adopt a range of 3% above and below the current level of interest rates on the fixed interest assets held. This range may need to be reviewed from time to time if current interest rates are standing at historically high or low levels. When current yields are high, for example, it might be appropriate to assume a smaller increase and a larger decrease in yields whilst still maintaining a range of about six percentage points.

As far as equities are concerned, price falls of 15 to 20% have occurred quite often within the space of a few months. Falls of more than 25% within a year occurred in 1973/74 and 1976/77. For Regulation 55 purposes we should expect actuaries to test for a fall of at least 25% in the value of equities held and a similar fall for property. Again it might be appropriate to review the size of this assumed fall in relation to the current level of the market at any particular time. In view of the present high level of the equity market we should perhaps regard an assumed 25% fall as quite modest.

We would also expect actuaries to test for more extreme changes in conditions, say an increase in interest rates of 5% and a fall in the value of equities of 40%, under the first part of Regulation 54. In this case, however, it is reasonable for the actuary to have recourse to the margins contained in the minimum standards under Regulations 56 to 64 and to make provision for only a modest level of bonuses.

For even more extreme changes in conditions the actuary could rely on the explicit solvency margin in addition to margins in the reserves.

In the case of an old established with-profits office where the assets have been taken at book values which are substantially below their Asset Valuation Regulation (AVR) values the actuary might readily decide for the purposes of the mathematical reserves shown in Schedule 4 that no tests are required to establish that no mismatching reserve is needed. It should be noted however that since the implementation of the solvency margin regulations it is necessary to make a clear distinction between liabilities and margins in the calculation of the required solvency margin.

Therefore the actuary has also to consider whether any mismatching tests are necessary in relation to assets taken at their AVR values as in the balance sheet (form 13).

Although there may be a substantial margin between the actual valuation interest rate for the liabilities in Schedule 4 and the maximum rate permitted by Regulation 59, it will not always be apparent without conducting any tests that this implicit margin will cover any mismatching reserves determined in relation to assets at their AVR values. This is particularly the case where a large proportion of the assets held are in the form of equities or property.

In the case of non-profit annuity and income bond portfolios testing for an immediate rise in interest rates of 3% would often give a satisfactory mismatching reserve. However, we would also expect actuaries to look at the mismatching reserve from the different point of view of cash flow matching. In examining the cash flow of the assets and liabilities of the long term contracts it is necessary to make a deduction from the income and capital appreciation equivalent to the 7½% contingency margin in the redemption yield on assets, to avoid offsetting the margin required by Regulation 59(2). An adverse change in investment conditions consistent with the general working standard should also be assumed. Thus any reinvestment required after 3 years from the valuation date should be assumed to be made at no more than 7.2% gross, with a blend towards that rate in the first 3 years, and any disinvestment required after the valuation date should be assumed to be made at a yield of at least 3 percentage points above the current redemption yield for fixed interest securities. If there are any equity or property assets, sales on a correspondingly stringent basis should be assumed. For the purposes of discounting the requisite provision we would normally expect the mismatching reserve to be assumed to be held on deposit, yielding 7.2% gross after 3 years, unless there are special circumstances to justify a different approach.

CLC

I will be confining my remarks to the valuation of linked contracts, and to the main part of the liability in connection with those contracts.

The valuation of linked contracts was considered by a working party set up by the councils of the Faculty and the Institute under the chairmanship of Richard Wales, which reported in 1978. The principal conclusions of the working party were as follows:

1. A gross premium cash-flow approach to valuation is essential for investment-linked business.

2. Total reserves should be separated into two main constituents, namely, the unit reserve and the sterling reserve.

3. A matched position should normally be maintained and the unit reserve taken as the value of the matched units. If a matched position is not maintained a mismatching reserve is required.

4. Sterling reserves should be calculated policy by policy so that future cash flows are covered without recourse to additional finance.

5. The sum of the unit reserve and the sterling reserve must not be less than the current surrender value.

6. The sterling reserve should be such as to ensure that the conditions in 4 and 5 above can be satisfied in the future on the valuation assumptions and, subject to this, the sterling reserve may be negative.

7. Approximate methods of performing the valuation, such as the grouping of similar policies or the derivation of a formula, are permissible provided they can be shown to produce overall reserves at least as great as those produced by the cash-flow approach applied to individual policies.

8. Certain reserves, such as maturity guarantee and capital gains tax reserves, may be determined on an aggregate basis with appropriate allowance for withdrawals.

9. The actuary should state clearly his chosen assumptions which should have been consistent with the standard of adequacy implicit in the proposed valuation rules.

The essence of the concept of the sterling reserve is contained in the fourth of these conclusions, and it is echoed in section 56 of the 1981 Insurance Companies Regulations:

> "Avoidance of future valuation strain - the amount of the liability determined in respect of a group of contracts shall not be less than such amount as, if the assumptions adopted for the valuation were to remain unaltered and were fulfilled in practice, would enable liabilities similarly determined at all times in the future to be covered from resources arising solely from the contracts and the assets covering the amount of the liability determined at the current valuation."

The working party's proposal refers to the calculation of sterling reserves "policy by policy", but this is then modified by the proposal that approximate methods should be permissible. Some of the newer entrants to the business will have set up their computer records in a way which makes individual cash-flow projections possible, but for those whose records are not in a suitable form, the additional work involved would be formidable.

The question then is how the necessary sterling reserves can be calculated so as to make it possible to demonstrate their adequacy. My solution to this problem has been to determine a rate of sterling reserve per policy for the current valuation together with a formula for the expected variation in this rate at future valuations. The formula includes a rate of inflation which is also applied to the assumed expenses in the test cash-flows that are then produced. The test of the rate and formula is that they produce positive cash-flows at all future durations for all the test assumptions after allowing for additions to or releases from the sterling reserve as calculated.

This approach incidentally has advantages when attention is turned to the assessment of future profits. The sterling reserve formula which has been tested against conservative asssumptions, can then be used directly with realistic assumptions to give expected cash-flows net of reserving requirements.

We can now turn our attention to the question of the assumptions that should be made in testing the adequacy of sterling reserves. The mortality rate assumption is obviously important, especially with the new variable life plans, but that is a subject that requires a special discussion all by itself. The other important assumptions are the rate of investment return relative to the rate of expense inflation, and the rate of voluntary discontinuance taken together with the expenses of administration for continuing and discontinued policies.

Investment returns and inflation do not always change in step with one another, but there is some evidence of long-term correlation. It would seem to be over-optimistic to assume that current yields and the current rate of inflation will both persist in the long-term. At the other extreme, I do not think it is necessary to assume that we shall see a return to the conditions of a few years back when real rates of return were negative. Today it is possible to buy index-linked Government securities to yield 4%. I would therefore suggest that a central assumption for equity investment might be capital growth of 7% per annum plus 3% investment income against a 6% inflation assumption. The reserving level would then be chosen to cope with periods of significant adverse variation from this central asumption.

Turning to rates of voluntary discontinuance, it is not apparent in advance whether a high or low assumption will prove to be conservative, and a number of variations will have to be tried. For some contracts which include surrender penalties for part of their term only, the answer may well be a low rate initially and a high rate later.

Expense analysis is never easy, but I believe it is important for this purpose to distinguish between the cost of administering a continuing policy and the cost of dealing with a claim or surrender. I do not, however, believe that these costs should be applied on a policy by policy basis leading to positive sterling reserves on small policies and negative sterling reserves, that may have to be eliminated because of the surrender value test, on large policies. Theoretically, all the larger policies could be surrendered leaving only the smaller ones, but I have seen no evidence that this ever happens in practice.

It is, however, necessary to consider the likely variations from the central assumptions and their effect on the results. The guidance note for appointed actuaries put out by the Institute makes the point thus: "The actuary should consider the resilience of his valuation to changes in circumstances, with special reference to more extreme changes to which the office may be vulnerable, and provide appropriate margins in his valuation basis". Just how extreme a change should be considered is a very interesting question.

RJS

Summary of Discussion

The following comments were made on the interpretation of Regulation 55 by Mr C.L. Cannon:

Comment: Regulation 55 introduces different standards compared to the new guidelines.

Reply: Parity is desirable. The new guidelines are intended to give a practical standards measure.

Comment: Lapses offset the mismatching reserve that is required. When lapses occur there is a need to disinvest.

Reply: As a general rule the most stringent basis possible should be used - hence assume lapses.

Comment: After tests have been made and the Actuary is happy with the results of these tests, are GAD happy that the fund stays mismatched?

Reply: It depends on the portfolio, whether old or new, and upon the type of business. There is no strengthening of the law but limits are now being placed in order to sharpen up on the administration of the regulations.

Comment: For a largely with-profit fund you can regard part of the assets as matched to the liabilities and part to the surplus. If the 3% test is applied no mismatch may occur but the value of the assets covering the surplus may go down. However, a drop in free reserves from say £90m to £70m is not important in this context. Is a mismatching reserve required?

Reply: A £20m reserve is required but it would be sufficient to demonstrate that this is covered by margins in mathematical reserves or by a special reserve.

Comments: These guidelines will cause problems for us

(1) because no methods are available to do the calculations that are requested (how about a Paper on the subject?)

(2) because there are no extra resources available to do extra calculations

(3) the results will be horrific because I have a large with-profit portfolio, large equity holdings, hence a large answer (and still a solvency margin to set up!)

No agreement to these guidelines can be made, from a verbal presentation only, by this meeting.

Other comments were mainly on unit-linked valuation, and included:

You have mentioned the use of approximate methods of valuation. How approximate is approximate? Policy by policy cash flow projections are very sensitive to small changes in the assumptions. Will there be legislation on assumptions before money is spent on setting up systems?

So, design a policy that needs no extra reserves!

For an old portfolio you can get a different answer by working on a cost per policy basis and then grouping than by expressing expenses as a percentage. There is a different point at which the maximum sterling reserve appears, depending on the approach adopted.

Separate expense assumptions should be applied to continuing and discontinuing policies. The Sterling Reserve is the cost of surrender for policies beyond the surrender penalty point.

But it is different for each going at the worst moment for that policy to all going at one "worst" moment.

What about options? If there is a movement in mortality experience for example should there be similar tests and reserves set up to the mismatching concept? Referring back to the comment about designing a policy that needs no extra reserves, if the policy is priced to expect 90% of a certain mortality assumption and it is necessary to value at 100% then a reserve must be set up.

SOLVENCY MARGINS

M.B. Brown & P.H. Hinton

Introduction

From 15 March 1984 all companies carrying on long term business in the United Kingdom have had to maintain a margin of solvency in respect of their long term business calculated in accordance with Regulations 4-13 of the Insurance Companies Regulations 1981 (ICR 81). This requirement stems from the EEC Life Directive (implementing Articles 18-21) and therefore the Regulations should be construed, in case of doubt, to conform to the Directive. The Regulations do not apply to companies (other than pure reinsurers) with a Head Office in another EEC country, since under the Directive it is the home supervisor who is responsible for monitoring the maintenance of an adequate solvency margin.

Since the required solvency margin (RSM) is an implementation of Community Law, it is not open to the Department of Trade and Industry to vary, let alone waive, the obligation of a company to maintain its RSM, despite section 68 of the Insurance Companies Act 1982 (the Act), except in cases where the Directive does not apply. In particular the Directive does not apply to pure reinsurers, which is why ICR 81 prescribes a modified calculation for them, nor does it apply to companies which have had their authorisation to effect new contracts of insurance withdrawn.

The requirement to maintain the RSM in addition to the mathematical reserves contrasts with traditional actuarial practice, which, as a sine qua non, requires that the reserves be sufficient to enable a company to carry out its contractual obligations under all reasonably foreseeable contingencies. Under these circumstances the need to maintain an additional solvency margin might seem superfluous. However the obligation to maintain the RSM is now part of EEC law and there is little prospect of renegotiation. For the foreseeable future the rules are fixed. They reflect compromise between the Member States and must be applied even where they lead to results which some may consider illogical.

Investment Risk

The main misunderstandings about what the regulations require have arisen in regard to linked Class III or Class VII contracts where Regulation 6 provides for a 4% solvency margin only "in so far as an insurance company bears an investment risk". Some actuaries have interpreted this incorrectly, though understandably, as meaning that the rate of solvency margin should depend on the risk that the company actually carries in practice and that even where guarantees are given, as long as the risk is largely or wholly eliminated through the holding of appropriate matching assets the 4% solvency margin would not apply.

It is necessary however to interpret the regulations for linked business in the context of the general structure of the Life Directive and the provisions for non-linked business. It is implicit in the Directive that the rate of solvency margin will depend only on the form of the particular contract and not on the manner in which the business is operated, for example in regard to the investments held by the company. Under the Directive the rules concerning the reserving standards required and the nature of the assets in which the reserves may be invested are matters which are explicitly left to the national legislation of each Member State and there is no suggestion that the stringency or otherwise of the national requirements should affect the level of the solvency margin. Also with the type of solvency margin prescribed by the Directive it would not be practicable to vary the factor according to the extent of the risks borne by a company in practice. Thus for non-linked contracts the solvency margin is 4% of the mathematical reserves irrespective of the degree of risk borne by the company under the terms of the contract, for example whether any guarantees are of practical significance or are based on such a low rate of interest as to be purely nominal and also irrespective of the extent to which the risks are contained through the holding of matching assets.

The nil or 1% solvency margin for linked business (according to whether there is an expenses risk) is intended merely to give recognition to the fact that where the benefits depend solely on the current value of the linked assets the investment risks are borne wholly by the policyholder and not by the company. Any form of guarantee, however, will give rise to a 4% solvency margin on the whole of the reserves in respect of the contract, as with non-linked business. Thus a managed pension fund contract with a guaranteed annuity rate at retirement, however low, attracts a 4% solvency margin. A deposit fund with a guarantee that the unit price will not decrease is treated similarly.

Rate of margin on sterling reserves

One aspect of the solvency margin regulations which has caused some difficulty for DTI and its legal and actuarial advisers concerns the rate of solvency margin on the sterling reserves of linked contracts. Those who have been in touch with GAD or DTI on this question may know that the final view taken by the Department differs in some respects from the provisional advice given earlier. A case could be made for always applying a 4% solvency margin to sterling reserves whose calculation almost invariably involves an assumption about the return on investments. However this approach can lead to certain anomalies where a 1% or nil solvency margin applies to the unit reserve. It has therefore been decided to treat sterling reserves as subsidiary to but inherently linked with the unit reserve and to apply the same rate of solvency margin as applies to the unit reserve i.e. 4%, 1% or nil as the case may be. Except in extreme cases this will apply to the whole of the reserve for any mortality risks irrespective of the scale of the life cover, since for term assurance the solvency margin arising under the first calculation will in any event normally be small compared with that resulting from the 0.3% of the sum at risk formula.

Treatment of reinsurancce

In the case of reinsurance it makes no difference whether reserves are deposited back or not, although if they are the ceding company may retain the investment risk which in many cases is the major part of the risk associated with the underlying contract. Of greater consequence perhaps, it is worth noting that the Regulations do not distinguish between authorised and non-authorised reinsurers, though any competent supervisor will take into account the strength of any significant reinsurer when assessing a company.

Margins

In order to demonstrate that it meets its RSM, a company must clearly distinguish between mathematical reserves and free reserves to be counted against the RSM. Instruction 3 for the completion of Form 14 and paragraph (a)(ii) of the appointed actuary's certificate were designed to enable companies to do this in their returns to the DTI. Clearly there should be compatibility with the actuary's replies to the specific questions asked in paragraph 5(1) of Schedule 4, including the provisions for mismatching and CGT.

Effect of introducing Solvency Margins

For many companies the introduction of the solvency margin requirements has caused few fundamental problems. Their main problem has been the decision on how to present the company's position in its returns. For other companies, with fewer free assets, particularly a number of the newer, largely unit-linked offices, the introduction has caused greater difficulties. Provided the guarantee fund is met, a company which cannot meet its RSM but can demonstrate (via a plan as described in section 32(4) of the Act) that this will be only a temporary state of affairs may be permitted to continue to write new business.

Increased capital

The easiest way to meet the RSM is to increase the paid-up capital. This option is only open to companies with wealthy owners, though in some cases it has been combined with other strategies. It is noticeable that very substantial sums of money have been injected into specialist subsidiaries of major insurance companies, though this may also have been associated with the rapid expansion of linked business written by these companies.

Reinsurance Financing

Reinsurance financing may be considered to be a variation on this theme, where the additional capital remains in the hands of the reinsurer. Reinsurance itself reduces the RSM within the limits (15% of reserves and 50% of sums at risk) laid down in the Regulations. Typically the reinsurer contributes via commission towards the initial costs of the original contract. For the arrangement to be effective it is essential that the reinsurer bears the risk that these costs will not be recovered should the contracts lapse. The purpose of paragraph 10(2)(e) of Schedule 4 is to monitor this. A number of such arrangements have come to GAD's notice over recent years. While such arrangements are not novel, some of the details may be because of the formal requirement described above.

Subordinated Loans

In the past a number of companies have been supported via a subordinated loan. This is no longer effective because in considering the solvency margin of a company the loan counts at its full value as a liability. One variation that is effective is for a loan to be made to an (intermediate) holding company which then subscribes for additional capital in the subsidiary insurance company, provided that there is no question of any guarantee of the loan or interest thereon by the insurance company. The drawback of this arrangement from the standpoint of a supervisor is that there may be pressure on the holding company or directly on the insurance subsidiary to generate quick profits and declare dividends so that interest at least may be paid by the holding company on the loan.

Contract Design

The solvency margin applicable to a contract depends on its detailed design. It is therefore only sensible for companies when designing contracts to consider the solvency margin implications. The additional capital required to support the solvency margin of a contract will need to be serviced, and in general a higher rate of return will be required than that yielded by the investments backing the RSM.

In recent years many companies have redesigned their linked contracts so that they may increase their management charges without limit. In the absence of an investment risk this results in a nil solvency margin factor in the first calculation instead of 1%. The reduction in the RSM and also in the mathematical reserves (which may be a more important consideration) the company needs to carry should enable keener terms to be offered to policyholders.

However, the policyholder bears the risk that at some future date the company will increase charges to an unreasonable level. Such contracts have not been generally on offer to individual policyholders for an extended period, insufficient time for any evidence of abuse to surface or for a general code of practice for increases in charges to emerge. For companies writing new business competitive pressures should keep charges in line with those of the market. This would not be so for a company closed to new business which might fall into the hands of an unscrupulous or incompetent controller. While corporate policyholders, such as pension funds taking out managed pension fund contracts (these were the first linked contracts with open-ended expense charges to be sold in any numbers), can be expected to be able to look after themselves, individual policyholders may have to look to the "reasonable expectations" provisions for protection.

Not all linked companies have offered such contracts. Such companies will be aiming, deliberately or by default, at a different segment of the market.

Control of business

Some companies which have been fairly close to the RSM have adopted a strategy of restricting new business to a level at which they can support the RSM. Such a strategy has the advantage that the marginally cost effective producers of business can be eliminated and expenses thereby will be kept under greater control.

It should always be borne in mind that the RSM applies continuously and not just at the end of the accounting year when returns are due. Indeed if DTI suspect that a company is not maintaining its RSM then it has powers under section 37(2)(b)(i) and 42 of the Act taken together to require an actuarial investigation as at any specified date to establish the position then. The need to monitor their financial position closely has led an increased number of companies with borderline coverage of their RSM to make approximate actuarial valuations at intervals throughout the year.

Investment Policy

There are no restrictions on how the solvency margin of a company may be invested, except insofar as the asset valuation regulations act as a restraint. However it is only sensible for a company, particularly one which only marginally covers its RSM, to invest its solvency margin in such a way as to be able to maintain that cover. To maintain an amount reasonably constant in cash terms requires investment in short-term deposits or fixed interest stocks. To maintain in changing investment conditions an amount proportionate to reserves requires investment in assets of nature and term that would match the liabilities. Part of the cost of such investment policies might be that the return on assets is reduced.

When considering mismatching in his valuation basis the actuary is under no obligation to demonstrate in the published returns the adequacy of the solvency margin cover under changed investment conditions. However Paragraph 4.1(ii) of the Institute's Additional Guidance Notes for Appointed Actuaries (GN8) requires him to consider the effect of such changes on both the amount of the RSM and the value of the free assets.

Increases in RSM

Likewise for many contracts, as premiums are paid the RSM increases and again the actuary should consider how the increase would be covered, even though Regulation 56 of ICR 81 - avoidance of future valuation strain - applies to mathematical reserves, not the RSM. New business and lapses should be taken into account.

Change of valuation basis

A common course of action for companies under pressure has been to weaken the valuation basis. Indeed such a weakening is often the most obvious indication of the fact that a company is in difficulty. While many actuaries instinctively recoil at such a suggestion, it is not the intent of the Regulations to impose unreasonably strong valuation standards on a company. If it can be shown that the revised basis is prudent in the circumstances of the company and meets the valuation rules, then there is no intrinsic reason why the basis could not be weakened. Also paragraph 4.2.2. of GN8 takes into account that the RSM lies uneasily on top of the valuation rules in Part VI of ICR 81 and traditional actuarial practice (paragraph 3 above). This may under some circumstances provide justification for weakening the valuation basis, leaving the more extreme adverse contingencies to be covered by the RSM, always provided that the basis used remains reasonably prudent.

Implicit items

Implicit items may be taken into account provided a section 68 Order has been made allowing them. Details of the procedure for applying for an Order are set out in DTI's Guidance Note dated 5 October 1984 and I do not propose therefore to do more than make a few remarks here. Implicit items in respect of Zillmerising or hidden reserves would be based on draft returns. While the future profits implicit item may also be based on draft returns, normally it is based on the last returns submitted and covers the period until a new order can be granted after the next returns have been submitted.

All the Orders for the implicit items granted so far have been in respect of future profits. The main misunderstanding that has arisen is in respect of double counting, where interest on the surplus carried forward and investment reserves has mistakenly not been excluded from the surplus arising in the long term fund. The surplus taken into account should be after taxation. It should be noted that this implicit item only arises where there are past surpluses. Exceptional losses are not excluded. It remains to be seen how a decrease in free assets as a result of a substantial fall in stock market values, as occurred towards the end of 1974, would be interpreted in this context.

A hidden reserves implicit item will only be granted exceptionally where it is needed to maintain a company's RSM and where it is not expected to be required for more than a comparatively short period.

Closure to new business

A number of companies which have ceased or virtually ceased writing new business have formalised their position by applying for their authorisation to write new business to be withdrawn under section 11 of the Act. They then become eligible for a section 68 Order reducing their RSM. If the business is wholly reinsured then the RSM might be set at a nominal level. If not then the minimum guarantee fund might still be very much reduced. Any concession would depend on the circumstances of the case. In particular if the company had only just ceased writing new business, DTI would need to be fully satisfied that adequate provision was made for any overrun of expenses (this should be covered in any event by Regulation 61(2) but special attention would be paid to this factor under the circumstances), and might well prefer to wait until the runoff had begun to develop before considering granting a section 68 Order.

Summary

Although companies have adopted a number of strategies to meet their RSM, remarkably few companies have failed to do so. In some cases the failure has been been through a misunderstanding of the Regulations rather than from a fundamental inability to meet them. I know of no cases where companies actively writing business have been forced out of business by the solvency margin requirements, though for a very few undercapitalised companies they may have been a contributory factor to a decision to cease writing new business. In a few cases the introduction of the Regulations has led to substantial changes in the way a company operates.

Summary of Discussion

It was claimed that very few companies took the solvency margin into account in pricing their products, even though, particularly for small companies, they should. A little later one speaker stated that his company had explicitly allowed for it in designing its products.

It was suggested that a company use reinsurance to try and finance its solvency margin. However it was queried how in future the company escaped from its reinsurer and also how the reinsurer was meant to finance its solvency margin. Someone else commented that it had always been true that once a company had gone to a reinsurer to help finance expansion it was difficult to escape and the introduction of the solvency margin had only made this worse.

A speaker pointed out that one now had to set up the solvency margin in addition to the normal prudent valuation reserves. He therefore wondered whether the prudence could be relaxed. The response was that it would be possible to relax the prudent assumptions but the problem was that the profession had not decided what was prudent. The amount of any reduction would depend on the judgement of the actuary concerned and obviously the GAD would have views on the subject. In a similar vein someone asked if an order under Section 68 of the Insurance Companies Act 1982 could be made to allow a company to bring in margins in its valuation basis as a hidden reserve. It was pointed out that such margins in the mathematical reserves were expressly eliminated as hidden reserves by the Insurance Companies Regulations 1981. The only hidden reserve permitted in the UK might be certain inadmissible assets.

Some speakers thought that the introduction of the solvency margin had led to a significant change in the design of policies. For instance limits on annual management charges and guaranteed annuity rates had been removed. The contrary view was however put that the general unbundling of policy provisions that has recently taken place was part of a longer trend which had been taking place for 10 years. One speaker said that although his company had removed the restriction on increasing the annual management charge in its policies to avoid solvency margin problems, it had promised its field force that in practice it would not increase the annual management charge.

In response to a couple of closing questions to the audience from the chairman it was obvious that while most people had considered the problems arising from solvency margins only a few had solved them.

VALUATION REQUIREMENTS: RETURNS

M.A. Pickford & S. Thompson

The speakers made separate presentations, as follows:

As you will all be aware, new procedures have been agreed between Insurance Division of the Department of Trade and Industry and the Government Actuary's Department for the scrutiny of returns in respect of long term business. As a consequence of this, GAD has been writing direct to insurance companies over the past year to clarify various issues which have arisen on their returns. This clarification is broadly for two purposes; first, it is to ensure that the valuation of the liabilities conforms with the standards laid down in Part VI of the Insurance Companies Regulations 1981 and secondly, that the company has complied with the requirements of the Accounts and Statements Regulations in providing all the information required of it. The latter forms the companies' part of the bargain called "(relative) freedom with publicity". With the introduction of the life solvency margin for most companies from 15 March 1984, it is also necessary to ensure that the company meets the requirements of the solvency regulations.

With the advent of solvency margins, it is now necessary for companies to clearly identify in their returns liabilities on the one hand and free reserves on the other. You will recall that Form 14 in the Accounts and Statements Regulations 1980 did not try to distinguish between the two, but that form had to be amended in the 1983 regulations to distinguish between the liabilities comprising the mathematical reserves and other current liabilities, and the free reserves held in the long term fund either in the form of surplus carried forward or as part of the investment reserve - referred to in line 51 of Form 14 as the excess of the value of admissible assets representing the long term business funds over the amount of those funds.

The necessity for this line to be included in Form 14 arises because Regulation 38(5) of the Insurance Companies Regulations 1981 allows an actuary in his valuation report to assign their book value to the long term assets. This concession, if I can call it such, was agreed with the LOA and the Institute and Faculty of Actuaries back in 1979 at the time when the Accounts and Statements Regulations were being devised to replace the old Accounts and Forms Regulations. As some foresaw at the time, the use of different asset values in different parts of the returns has now caused some difficulties and confusion to arise particularly in regard to the demonstrating of the Life Directive solvency margin. As a result, GAD has had to send out a large number of letters to companies on the receipt by DTI of the 1984 returns, and I think it is necessary to use up most of the time allotted to me in this opening speech to explain in some detail what are the points at issue, because experience to date has indicated that the profession as a whole has not understood sufficiently the relevance of the amendments which have been made to Schedule 4, Footnote 3 to Form 14, and in the Actuary's Certificate.

The most important point to be noted in the first instance is that, if the fund has been brought into the valuation balance sheet at book value, the mathematical reserves established in Schedule 4 which meet the standards of the Valuation of Liabilities in that context may not be sufficient in the context of assets taken at market value under the Asset Valuation Regulations. In practice, they may be sufficient for most companies partly because the valuation rate of interest is already required under the Valuation of Liabilities Regulations to be determined in the context of assets taken at their market value, irrespective of whether book values are used, but also because the margins which the actuary has in his valuation basis may well be sufficient to cover the additional mathematical reserves which will be required when liabilities are determined in the context of assets taken at market values.

However, we have identified in GAD two respects in which the mathematical reserves may not be sufficient; these concern mismatching reserves under Regulation 55 and the provision for capital gains tax. Let me take Regulation 55 first. The first half of this regulation refers to determining the amount of the long term liabilities by taking into account the nature and term of the assets representing the long term fund <u>and the value placed upon them</u>. As a consequence, if the fund in Schedule 4 has been brought in at book value the actuary may, for the purpose of Regulation 55, take note of that fact and rely on a part of the difference between the market value of the assets and the book value of the assets to cover any further mismatching provision. However, although that may be sufficient in the context of a Schedule 4 valuation where the assets are taken at book value, the Actuary's Certificate and Form 9 (where the solvency of the office is demonstrated) requires the mathematical reserves to be assessed in the context of assets taken at their AVR values. The margin represented by line 51 of Form 14, if it is free of all foreseeable liabilities (in the terms of Article 18 of the Life Directive) would be able to be counted against the required solvency margin in Form 9. However, if the actuary in his statement under paragraph 5(1)(a) in Schedule 4 has said, in effect, that he is relying on part of the investment reserve to cover any mismatching provision, he actually has to identify that provision for the purposes of his certificate and for Form 9 to differentiate in the market value context what are mathematical reserves and what are free reserves.

In the past, it has been quite appropriate for the actuary to make a statement that, because the assets have only been brought in at book value, there is no need to establish an additional reserve for mismatching. Unfortunately, this can no longer be the position, without the actuary indicating what part of the investment reserve he has taken into account. (On the other hand, if the actuary has sufficient margins in his valuation basis to cover the mismatching reserve, he could of course say something to that effect instead.)

Furthermore, the second half of Regulation 55 refers to the fact that the actuary shall include appropriate provision against the effect of possible future changes in the value of the assets on their adequacy to meet the liabilities. This is interpreted as meaning that the provision must be such as to enable the company to continue to cover the liabilities calculated in accordance with the regulations as investment conditions change. As a consequence, the actuary has to ensure that his mathematical reserves are sufficiently prudent to withstand changes in rates of interest of the order of say 3% from those appertaining at the valuation date, with allowance for a fall in equities and property values of say 25% or more.

From a supervisory point of view, if an actuary provides absolutely no information about any tests he may or may not have performed in his valuation to ensure that he is meeting all the requirements of Regulation 55 noted above, GAD is left in a very difficult position. If it is not evident to us that in the context of assets taken at market value there is no need for a Regulation 55 additional reserve, we feel obliged to go back to the actuary to ask him what tests he has performed and to give us the details of such tests. This is in line with paragraph 12.6 of the Guidance Notes on the preparation of the annual returns where the last half of that paragraph states that "if the actuary has not carried out some of the tests implicit in the specific points raised in paragraph 5(1) as he considers the margins in his basis are already large enough to meet the minimum standard required by Regulations 55 to 64 and meet the requirements of Regulation 54, he should indicate this either directly or indirectly; he may however be required to justify his basis to the Department if it considers that it is not self-evident that there are sufficient margins."

Some companies, however, have provided information on the basis used to determine whether a mismatching reserve is necessary. For example, one company made alternative net premium valuations at 8% and 15% per annum when gilts were yielding about 11% on average. However, the actuary stated only that, after doing those tests, no specific provision was considered necessary, having regard to the fact that the assets are brought in significantly below the admissible values. The actuary did not go on to say that, for the purpose of his certificate, where assets have to be taken in the context of their admissible values, the amount of the additional reserve included within line 51 of Form 14 was a certain sum, or alternatively that he had sufficient margins in the valuation basis (through the use of strong rates of interest, for example) which would cover the costs of the mismatching reserve in the context of assets taken at their AVR values.

Indeed it was because we thought that a large number of traditional offices with very strong valuation bases would be able to say that the mathematical reserves which they had established in Schedule 4 would still be sufficient in the context of assets taken at their AVR values that we included in paragraph 7.7.7. of the Guidance Notes on the Preparation of Annual Returns that (and I quote);

> "it is anticipated that in practice for the majority of companies no adjustment will be required but, where an adjustment is made, the amount stated in the actuary's certificate is to be shown in a Footnote to Form 14 and included in the mathematical reserves in line 23 of Form 9."

That particular sentence appears to have caused some confusion amongst actuaries who, having read that we consider that for the majority of companies no adjustment would be required, have gone ahead in their valuation reports and have made no comments in their returns.

It is clear from the way that the profession has reacted to the existing Schedule 4 in the 1983 Accounts and Statements Regulations that paragraph 5 is not drafted in the clearest possible way. Ideally, the report would seem to need both a statement on Regulation 55 in terms of assets taken at book value where this has been the case and also assets taken at their AVR values, with some indication given by the actuary of the tests he has made to determine what additional reserves, if any, are required. Such a paragraph could usefully supersede the existing paragraph 5(2)(a) which has tended to mislead actuaries. In general, the more information that is given by actuaries in their Schedule 4 reports, the less will be the GAD's need to ask perhaps unnecessary questions of the actuary.

A similar point arises in regard to the provision for capital gains tax on unrealised gains. In the simplest case where assets have been kept at their historical cost value, it is clearly unnecessary for the actuary to make any additional provision in Schedule 4 with regard to future tax on unrealised capital gains. However, when considering the reserves required by the company to meet such a tax when assets are considered in the context of their AVR value, i.e. broadly a market value basis, the actuary will have to consider some provision if the company has not provided for this tax elsewhere in the returns, perhaps in Form 14. Such a provision will be calculated on the basis that the company ceases to transact any new business.

In exactly the same way as the reserve required under Regulation 55, the actuary should either say in his valuation report that he has sufficient implicit margins in his valuation basis to cover the additional capital gains tax reserve required for assets taken in the context of their market values, or indicate in the Footnote to Form 14 what this additional reserve would be. I would repeat, however, that if the company has incorporated such a reserve in Form 14 already, perhaps in line 44 if this is agreeable to the company's auditors, the actuary will not have to make such a provision again.

MAP

Introduction

The last detailed discussion of DTI returns by the Institute was 12 years ago, in a paper by Alan Ford (JIA 101, p.53). This identified two main purposes of the DTI returns:

1. To provide the supervisory authorities with sufficient information to determine that a company is solvent and is not following a policy which could lead to future insolvency, and

2. To provide sufficient information to allow for an independent assessment of the assets and liabilities (consistent with the concept of "freedom with publicity").

It was recognised that the word "solvency" could not be interpreted too narrowly, and there was considerable discussion of the concept "reasonable expectations of policyholders".

Recent years have seen a significant increase in the statutory control of life insurance, in particular by the introduction of regulations for the valuation of liabilities, including a minimum statutory valuation basis and also the requirement to demonstrate a specific solvency margin. This has led to a greater need to demonstrate that the valuation methods and bases conform to the regulations. So for example, companies which do not adopt a net premium valuation method for some or all of their business have had to go to considerable lengths to demonstrate conformity with Regulation 57. This raises a general question: to what extent should the actuary merely state the basis and methods that he has adopted, and to what extent should he be required to justify them in the DTI returns? The traditional view has been that it is sufficient to state what has been done, together with sufficient data to allow another actuary to carry out an alternative valuation with different methods and assumptions. Is this still appropriate or should we be looking for more explanation from the actuary as to why he has chosen the specific methods and bases used?

The topic of bonus expectations has already been discussed at some length. The concept of "freedom with publicity" suggests that it should be possible to assess from published returns the bonus prospects of companies and to judge the equity of treatment of different classes of policyholders. However, as was pointed out this is an area where a large amount of freedom is combined with little publicity and I agree with the suggestion that further information should be given by the actuary in the DTI returns.

Unit linked business

There now seems to be general agreement that the methods recommended by the Institute and Faculty working party on valuation of unit linked business are appropriate and most companies with significant volumes of unit linked business adopt these methods. There is still difficulty in deciding on the specific assumptions to use for this method and to demonstrate that they lead to adequate reserves. The crucial point is to produce a consistent and reasonable set of assumptions for the assumed growth rate before tax and charges, the assumed rate of inflation and the interest rate used to discount sterling reserves. At present various actuaries adopt significantly different assumptions and I understand that this is an area of active discussion between the GAD and individual actuaries. The matter will only be resolved if a consensus emerges within the profession as to a set of assumptions which are considered to make an adequate provision for the various guarantees in unit linked business.

Provision for tax on unrealised capital gains

This is an area in which many published returns say little. I shall deal only with the tax provisions for unit linked business. The difficulties experienced by companies adopting a terminal deduction method as a result of changes in CGT legislation are well known. It is difficult to show that any reserves are adequate if the rules are likely to be changed in the future although we may have reached the position where further changes in legislation are more likely to reduce the required reserves.

Turning to the more usual net pricing method, we are concerned less with adequacy of reserves and more with equity between different policyholders. The levels of CGT reserve within internal funds do vary quite significantly between different companies and anyone who has tried to explain the subject to sales staff will know that this whole matter is not well understood in the market place. If we accept that DTI returns are intended to illustrate more than mere solvency then we should be looking for much more disclosure here with details of the levels of reserves and the assumptions used to arrive at those levels being stated.

Provision for future expenses

This is of course particularly a problem for unit linked and other non profit business. It is straightforward from the returns to arrive at figures for the total maintenance expense loadings in the valuation and to compare these with the current maintenance expenses in schedule 3. However there remain two areas of difficulty in demonstrating conformity with Regulation 61:

1. Demonstrating that the assumption as to future inflation makes adequate provision for future expenses. This seems to be another area where there needs to be a general agreement within the profession as to an adequate assumption.

2. Demonstrating that adequate allowance has been made for the contingency of closing to new business. There is nothing in the returns which is likely to give much of a guide for what the cost of such an action would be, indeed it may be very difficult in many cases to assess accurately what the cost would be, for example, an industrial office with a large regional network. Perhaps the general view is that the contingency of closing to new business is so remote that no allowance needs to be made for it. However, I am not sure if this is the correct interpretation of the regulation.

Information on options and guarantees

The last 15 years has seen much work in developing techniques for dealing with options which had already found their way into insurance contracts, for example guaranteed surrender values for annuity bonds, maturity guarantees for unit linked business, flexible with profit endowments. The latest additions to this list are indexation and other options allowing non-underwritten increases in life cover. Almost every new contract which appears contains some option of this nature but there is still a lack of data which can be used to arrive at a precise cost for the option.

The crucial step is recognising that an option is financially significant, for example a maturity guarantee would probably have been regarded as trivial when they were first introduced but it has subsequently transpired that this is far from the case. It follows that returns need to give a detailed description of all the options in policies; indeed information on the company's normal practice in promoting options might be very relevant to assessing the cost of, for example, indexation options. Conformity with regulation 62 is always going to raise problems in the absence of generally recognised methods of costing options.

Relations with supervisors

These should of course be as amicable as possible. There is surely considerable benefit for both sides to have regular discussions on matters of mutual interest. Therefore I welcome the recent change whereby the Government Actuary's Department will deal directly with the appointed actuary on all actuarial matters.

However, it seems inevitable that there will at times be differences of opinion between the GAD and individual actuaries in insurance companies. We now have the position that the phrase "actuarial principles" has been enshrined in legislation without there being any comprehensive statement of actuarial principles. Who is to be final arbiter in the event of dispute over whether or not a valuation has been done in accordance with actuarial principles? Clearly no individual actuary can decide in his own favour, nor, I suggest, is it appropriate for the GAD to have the final word. The profession as a whole, operating particularly through published guidance notes, should be able to resolve major problems, but as GN1 states it can only be a guide and there will always be areas where differences of opinion can justifiably arise. Now that "actuarial principles" have been incorporated in law the final arbiters will presumably have to be the courts although most would agree that this should be avoided if at all possible.

Other problems

Finally, I would like to look briefly into the future. It has become commonplace to say that we are experiencing a financial services revolution, with the convergence of hitherto unrelated financial activities. This is already leading, and will increasingly in the future lead to a significant reorganisation of many life insurance companies. They will be one company within a group offering a whole range of other financial services with activities such as sales, marketing and investment via unit trusts organised on a group basis. It will be difficult to judge the activities, or even the financial position, of such an insurance company without looking in great detail at its relationship with the other companies.

Transactions between an insurance company and other connected persons are tightly controlled by Section 31 of the Insurance Companies Act and almost any activity in that area seems to require a Section 68 order. However, only limited disclosure is required in the DTI returns. In particular the need to disclose whether or not a reinsurance treaty is with a connected reinsurer, and the requirement for the directors to certify that the returns have not been distorted by arrangements which could affect the apportionment of expenses and income between the company and any other insurance company with which it has some form of link. The word "distort" with its pejorative overtones is unfortunate and I have never seen anyone admit that their returns were distorted. In any event the current level of disclosure seems quite inadequate to cope with the changes in organisation which we are beginning to see and I would expect to see developments in this area.

ST

Summary of Discussion

On the subject of mismatching reserves, one contributor asked how he could give details of tests which he has not carried out. Guidance Notes paragraph 12.6 stated that tests need not be carried out if the actuary considers he already has large enough margins in his valuation basis. Another contributor said that although he was starting to believe that a net premium valuation was right for solvency purposes since it gave a reasonable answer within a range of conditions, there was no sense in determining a mismatching reserve for a net premium valuation of traditional business. He would prefer to see the whole of the GAD's proposals discussed more fully before deciding what to do.

On the subject of a provision for Capital Gains Tax on unrealised gains, several contributors queried whether such a provision is necessary, and if so how it should be calculated. If the admissible assets were well in excess of the liabilities and solvency margin, any CGT could be met out of the excess assets, so did not need a provision. To include a provision in the actuarial certificate now would question the integrity of the actuarial certificate over the immediately preceding years, when such a provision was not mentioned. An actuarial certificate based on market values is akin to a winding-up certificate, so should the provision for CGT be discounted to the point when the gains would be realised? If the Fund included Pensions Business what rate of tax should be used and how should Case VI profits be determined?

Mr Pickford answered questions raised by both Mr Thompson and the contributors. Offices were not being asked to assess the probability of closing to new business, but to determine the costs if that happened. CGT would have to be paid on realising gains and therefore a provision should be established so that it could be seen that the solvency margin was still sufficient. Options and guarantees were an important issue and many returns did not give enough information; it was necessary to know what the liabilities were in order to assess whether they were covered, so all significant ones should be stated. Distortion in expenses caused by management service agreements were mentioned in the certificates, and information was now required in Schedule 3. Paragraph 8 of Schedule 4 had not been well understood and was re-written in 1983, but some actuaries still don't give details of parameters. The principles of bonus distribution were often stated to be in accordance with the articles of association, or something similar, without any reference to what is stated in policies, or new business quotations, and actuaries were being asked to give further information.

ACCOUNTS & ACCOUNTANTS

M.J. Burns & J.D.F. Dickson FCA

It was intended that the discussion should be centred on the statement issued by the Accountancy bodies in the UK entitled "Auditors' relationship with Actuaries concerning Actuarial Valuations of Long-Term business funds of Insurance Companies", a revised version of which was issued in December 1984. Members were recommended to read the Accountants' statement, copies of which can be obtained from the Secretary-General, and the guide prepared by the Institute and Faculty referring to the document (GN7) which was circulated to all UK Fellows in May 1985.

Summary of Discussion

The Chairman introduced Jeremy Dickson, a Chartered Accountant and a member of his Institute's Insurance Committee, and Michael Burns, a co-chairman of the Auditors and Actuaries Working Party which had helped to draw up guidance notes issued by the two professions to their members.

Mr Dickson began the session by reminding the meeting of auditors' duties. It is the auditor's duty to form a view of the accounts produced by the directors of his audit client. In the case of a life office, forming a view on the accounts necessarily entails forming a view on the life funds. However, the auditor is not qualified (Mr Dickson said) to take a complete view himself so he must rely on relevant and reliable audit evidence. Case law indicates that an auditor is expected to have a general business knowledge but does not require him to have the detailed knowledge of a specialist.

Mr Dickson quoted relevant extracts from guidance notes issued to auditors emphasising that, in his view, it is a fundamental requirement that an auditor should have an understanding of the actuary's objective in carrying out a valuation and should understand the valuation findings. In Mr Dickson's view, the auditors' guidelines were unclear as to the delicate demarcation lines between the respective roles of the office's appointed actuary and auditor. In this respect he quoted the requirement that an auditor should "carry out such tests as are appropriate in the particular circumstances to obtain reasonable assurance that the procedures and controls are operating satisfactorily in practice". Mr Dickson deduced from this that the auditor may need to test the actuary's arithmetic unless he can obtain assurance by other means.

In conclusion, Mr Dickson said that it was no part of an auditor's duties to suggest alternative valuation assumptions. He had, however, to understand the assumptions, recognise whether the valuation approach had changed from previous years and consider whether the assumptions were reasonable. Mr Dickson acknowledged that this final requirement begged the question of what the auditor should do if he considered the assumptions to be unreasonable.

In his opening remarks, Mr Burns recalled that, in the past, some actuaries had resented enquiries from auditors. Their attitude may have been exacerbated by questions from the auditor which appeared to show a lack of understanding. However, the actuaries on the joint working party with the auditors had reluctantly accepted the position in the terms outlined by Mr Dickson in his comments. One argument put to the actuaries was that other professional valuers were also subjected to audit enquiry. For example, the valuation of property shown in a company's balance sheet must be audited.

The Institute of Actuaries had made representations to the DTI that the certificate of the Appointed Actuary be deemed to be acceptable to auditors. This representation had not proved successful, Mr Burns said, in respect of a life office's Companies Acts accounts, although he noted that the actuary's valuation for the purposes of the Insurance Companies Acts is not subject to audit.

In the discussions that followed, a number of contributors took up the point made about the auditor's possible need to test the actuary's arithmetic. There was general agreement that the auditor should test the collection and maintenance of valuation data, but it was suggested that this could be seen as quite separate from testing the actuary's valuation of the liabilities. Only one of the actuaries who addressed this point thought that the auditor should extend his work into testing the valuation.

The possibility that an auditor might query the actuary's assumptions was a topic which attracted some discussion. Most contributors were concerned as to whether the auditor's expertise was sufficient to enable him to do this. One speaker thought that it was perfectly possible for a layman to ask very penetrating questions and to reach a view on the assumptions. Mr Dickson thought that it might be sufficient for the auditor to review the assumptions at a totally superficial level; it would be a brave auditor (he said) who actually challenged the assumptions.

Some speakers were interested in the role of an actuary employed by an auditor: whether this created an extra and unnecessary layer of work and whether it imposed a greater duty on the auditor. It was said that some appointed actuaries found it had proved helpful for the auditor to have an actuary on his staff, although the auditor may find that he takes on an extra duty of care if he is holding himself out to have a special expertise by virtue of his employment of an actuary.

Other topics covered in the discussion included the presentation of actuarial information in accounts and the progress of an EEC directive on insurance company reporting.

SURRENDERS, ALTERATIONS, LAPSES

A.M. Burnett-Brown, Dr S. Haberman & N.H.Taylor

Two papers were presented for this session, the first by A.M. Burnett-Brown and N.H. Taylor, and the second by Dr S. Haberman and Dr. A.E. Renshaw.

Introduction

Our interest in this subject stemmed from our office work 10 years ago when one of us looked after the actuarial aspects and the other the administrative aspects of surrenders and alterations. We wrote a brief paper on the subject for the Bristol Actuarial Society and were encouraged to try to turn this into an Institute paper. We carried out a survey amongst a number of offfices and drafted a paper but this would not have merited discussion at the Institute. The last Institute paper on surrender values was in 1936 and there has never been an Institute paper on policy alterations - Whitehead's paper was published in JSS in 1953. The Faculty discussed a paper on surrenders in 1969 and alterations in 1974.

In our notes below we have concentrated on traditional business, not least because that is where our experience lies but discussions could well be widened to include unit linked business.

We have set out some headings with a few points under each, in order to set the scene.

Consumerism

Not much has changed since A.H. Bailey, who was the President of the Institute in 1879, stated during a discussion on surrender values:

> "I am afraid that, work on the subject as we will, the results, as far as the public are concerned, will always be unsatisfactory. The popular notion is - and I believe always will be - that, when a man is unable or unwilling to continue the payment of his premiums, he ought to have returned to him, in full, with or without interest - this being a moot point- the amount he has actually paid. Of course, that is impossible........".

There was considerable consumer pressure and much press comment 10 years ago when surrender values were reduced after a long period of stability but, in recent years, the press have been concentrating on pensions. However, we need to be prepared for future pressure on the level of surrender values. Are we right always to argue that the long term benefits are what we must concentrate on when so many policies prove to be unsuitable to the consumer's needs? We know that policies will be surrendered and possibly should arrange for our investments to match our predictions. Maybe the public are prepared to see slightly lower long term benefits and higher surrender values. Our definition of equity is queried. There would still seem to be an element of thinking by offices that those who surrender are breaking their contract and should be penalised. The public see the flexibility of monies held in banks and building societies and also do not like the high front end charges inherent in life assurance policies.

As far as normal alterations are concerned, it would be unusual to find any consumer pressure unless a paid up value seemed particularly poor.

Approach To Calculations

A surrender can be considered as a special alteration where the future term is reduced to zero. Making a policy paid up can be considered a special alteration where the future premium is reduced to zero. These are the limiting points; to what extent should there be consistency between normal alteration bases and the surrender and paid up bases, particularly as these limiting points are approached?

Methods

When we carried out our survey it was clear that many offices had used the same methods for calculating surrender values and alterations for many years. They were relatively unsophisticated as they had been designed for manual use. At that time many offices had computers but were only considering transferring these manual methods across without considering alternatives. We wonder if this position has now changed or whether anyone uses a profit testing approach on alterations for traditional policies. Many offices have on-line terminals at branches which may lead to a demand for instant surrender values. The method used for this may depend on the data available.

As a reminder the usual traditional methods for surrender are those based on paid up values, on policy values, on gross premium prospective values, on valuation reserves and premiums paid. For alterations and paid up values, apart from the special proportionate paid up formula, methods include equating prospective reserves, net premiums, gross premiums or surrender values. One can also look at the difference in reserve values, accumulate premium arrears, spread reserves as a premium reduction, or make the existing policy paid up and re-enter.

Administration

It would be interesting to know how many offices have fully automated surrender and alteration processes which not only provide values but also the appropriate documentation.

AMB-B and NHT

STATISTICAL ANALYSIS OF WITHDRAWAL EXPERIENCE OF ORDINARY LIFE BUSINESS

The Data

Data have been generously supplied by the Faculty of Actuaries Withdrawals Research Group. These cover the 1976 experience of seven life offices. An extensive analysis was published in 1979 in the Transactions of the Faculty of Actuaries. The approach outlined here is, we believe, better able to describe the structure of the data than the detailed tabulations of the 1979 paper. We take advantage of the G.L.I.M. statistical package in carrrying out the modelling described.

The 1979 paper describes the 1976 withdrawal experience and examines the variation of withdrawal rates with type of policy, sex of policyholder, age of policyholder at entry, duration of policy, premium frequency, premium-paying term, sum assured, class of agent, office. There are some missing data. The total exposed to risk is in excess of 3/4 million.

Withdrawal is used to denote the removing of a policy from the live file due to early termination of the contract, with or without payment of a surrender value (it does not include the conversion of a policy to a paid-up amount, the reduction of premium and/or sum assured or the surrendering of bonus).

The analyses published in 1979 suggest that the main factors are the type of policy, age of policyholder at entry, duration of policy and office. The identification of these four factors is the starting point of the analyses described here. More detailed investigations have been carried out and these will be published in due course.

From the point of view of "underwriting for withdrawal" many factors which might be significant were not recorded in the original investigation including income, area of residence, occupation, tenure (including house ownership), number of years at that address, reason for effecting the policy.

Linear Models With Normal Error Structure

Generalised linear models can be written by way of the identity

RESPONSE = SYSTEMATIC COMPONENT + ERROR COMPONENT

or as $Y_u = M_u + \varepsilon_u$ for each unit u.

The response Y and its error component ε are treated as random variables, but the systematic component, M, as its name suggests, is treated as a non-random variable. In any application of this decomposition, it is necessary to

(a) select a suitable variable y
(b) nominate a structure for the systematic component, M
(c) select an error structure.

It is not possible in the limited space available to describe further how such a linear model is fitted to data and assessed. The testing of hypotheses is similar to (and can be regarded as a generalisation of) analysis of variance with which many readers might be familiar.

Proposed Model

The raw data were edited and the nature of the dependence of the withdrawal pattern, the response variable, on the following explanatory factors, was investigated.

(i) A - age at entry with 3 categories
$i = 1$ (15-24)
$i = 2$ (30-39)
$i = 3$ (40-64)

(ii) D - duration of policy (in years) with 3 categories

$j = 1$ (1-3)
$j = 2$ (4-8)
$j = 3$ (9 and over)

(iii) F - office. There are 7 identified by

$k = 1, 2, \ldots, 7$

(iv) T - type of policy with 5 categories

$l = 1$ with profit endowment
$l = 2$ non profit endowment
$l = 3$ with profit whole life
$l = 4$ non profit whole life
$l = 5$ temporary

The cross-classification of factor categories gives rise to a set of cells or units $u = (i,j,k,l)$. The number of withdrawals r_u, out of n_u exposures, for different u, are available for analysis. 2 types of policy (open ended and unit-linked endowments) were excluded at this stage because not all the offices issued such policies and there were no such policies at the longer durations.

Attempts were made to fit various model structures with normal errors, using the G.L.I.M. package, to the following response variables:

(i) the annual withdrawal rate r_u/n_u

(ii) the frequency of withdrawals n_u/r_u

(iii) the log odds of withdrawal $\log (r_u/n_u - r_u)$

The first two cases proved to be inadequate. A satisfactory fit was obtained using (iii) with the following model:

Decomposition $Y_u = M_u + \varepsilon_u$

Response $Y_u = \log \left(\frac{r_u}{n_u - r_u}\right)$

Error structure $\varepsilon_u \sim N(u, \sigma^2)$ independent and identically distributed.

Systematic component $M_{ijkl} = \alpha_i + \beta_j + \gamma_k + \delta_l$

Each of the four factors contributes significantly to the model.

The model has the advantage of a particularly simple and readily interpreted structure, i.e., additive with no interactions. So a comparison is possible between the relative effects of the different levels of any one factor in isolation, and without interaction from the different levels of all the other factors. The estimators of the model parameters are shown in Table I. It should be noted that the estimator for the initial level is equated to zero in each case and that the magnitude of the parameters is measured on the log-odds scale.

Table I may be interpreted thus. Consider age at entry. Group 2 has a lower rate of withdrawal than Group 1 by 0.28 on the log-odds scale. The actual difference in the rate of withdrawal between Group 1 and Group 2 will depend on the level of the other factors because of the need to convert from the log-odds scale.

Conclusions

The following broad conclusions may be drawn from Table I:-

(i) The withdrawal rate decreases with increasing age at entry.

(ii) There is a dramatic reduction in the withdrawal rate for policies of long duration.

(iii) Withdrawal rates are roughly identical for offices 1, 2 and 6 while the remaining offices experienced lower rates of withdrawal. Office 7, the office with the lowest rate of withdrawal, had missing observations for policies of long duration despite the effect of duration noted in (ii) above.

(iv) The withdrawal rate for non-profit policies is much higher than for with-profit policies. The withdrawal rate for whole-life policies, either non- or with-profit, is slightly greater than for the corresponding endowment policy. The withdrawal rate for temporary policies is much higher than for with-profit policies but somewhat lower than for non-profit policies.

TABLE I : Estimators of parameters for linear model

			1	2	3	4	5	6	7
A	age at entry	$\hat{\alpha}_i$	0	-0.28	-0.54				
D	duration	$\hat{\beta}_j$	0	-0.16	-0.90				
F	office	$\hat{\gamma}_k$	0	0.02	-0.20	-0.34	-0.17	0.05	-0.43
T	policy type	$\hat{\delta}_l$	0	0.77	0.16	0.82	0.63		

SH and AER

Summary of Discussion

The first part of the discussion centred around Dr. Haberman's work on the analysis of lapse rates. Asked to rank the various factors affecting lapse rates in order of importance, Dr. Haberman responded that duration was the most significent factor, followed by type of policy, age at entry and office, in that order. The fact that withdrawal rates in the investigation increase with duration for the first three years puzzled some people, who would have expected declining rates. Dr. Haberman stated that this was a genuine feature of the data used in the original Faculty paper. The feature is not removed by attempting to carry out the analysis on a policy year basis rather than the calendar year basis actually used in the Faculty investigation. Neither is the feature explained by any minimum duration before a surrender value is acquired.

It was pointed out that the data used in the Faculty investigation is now rather old and Dr. Haberman was asked whether he had any plans to test his model on more recent data. He replied that the Faculty had a Withdrawals Research Group and he hoped to persuade them to use his tools in any future investigation.

The discussion then moved on to the commercial and actuarial aspects of surrenders. One contributor referred to a recent survey of with-profits endowment business which showed how the surrender value after 15 years of a 25 year policy compares with the maturity value on a 15 year policy for a variety of offices. The ratio of the surrender value to the maturity value ranged from about 70% to 95%. He felt that in current market conditions, the lower percentages in this range were indefensible and he would expect figures around the 90% mark.

One person pointed out that poor surrender values are a source of surplus which of course boosts maturity values for continuing policies. Another suggested that, as for unit-linked policies, we should allow for withdrawals explicitly in setting premium rates for conventional contracts and also invest the assets to match the anticipated average longevity of the policies allowing for withdrawals. This approach would enable the asset share on surrender to be similar to that on maturity. However, it was pointed out that some of the wide range of ratios of surrender to maturity value could be explained by the high terminal bonus element in the maturity value and the varying practice of offices as to the allowance made for terminal bonus in surrender value payments. It was generally felt that most offices now make some allowance for terminal bonus on surrender. Certainly, if surrender is not regarded as a breaking of the original contract, allowance should be made for terminal bonus. It was observed that the use of the 'asset share' concept as a guide in setting the level of surrender values is fairly common practice nowadays.

There was a brief discussion about whether there would be a reduction in complaints if potential policyholders were informed clearly at the point of sale what the surrender penalties were. It was observed that in many cases for unit-linked policies the surrender penalties were set out in the policy document but that complaints were still received.

Finally, the discussion turned to the practical and administrative aspects of alterations and surrenders. A "straw poll" was conducted to ascertain the progress offices have made towards the mechanisation of surrenders and alterations. One office had achieved complete mechanisation based on Torkington's method, with the computer also producing the required quotation and documentation forms. This, however, was far from typical; some offices have partially mechanised surrenders, but far fewer have made progress with alterations. Policies which have already been altered, and old series of policies, pose the greatest difficulties in mechanisation.

It was suggested that perhaps offices do not spend enough time actively considering surrender and alteration bases, but only amend them in response to sudden changes in conditions. However, it was generally agreed that market pressures were the most prominent factor prompting changes in bases.

PRODUCT DEVELOPMENT: LIFE

P.W. Wright

Introduction

The abolition of LAPR was a watershed in our business; in one blow what had been the unique selling proposition for regular savings contracts was taken away. I will consider the effect this has had and the response to it. It seems reasonable to consider unit linked and conventional assurances separately. In the final section of the paper I consider possible developments.

Unit Linked

There really is very little justification for a knowledgeable person to save through the medium of a regular premium unit linked life assurance policy and there will be even less reason if unit trusts are able to offer managed funds (which at present are a monopoly of life assurance companies). A regular savings plan with a unit trust offers greater tax efficiency and flexibility and the financial press are very well aware of these two points. The one remaining situation where the life assurance route could prove attractive is for a higher rate taxpayer who wishes to invest in a high income fund; here the income tax advantages of a qualifying policy can outweigh the capital gains tax disadvantages. This is a very small market and not one which can sustain the necessary volume of business for all the insurance companies currently involved!

For savings contracts the immediate reaction of some offices was to introduce 5 year non qualifying contracts. It is clear that these do not provide a very attractive return to the policyhlder. From the results of a Planned Savings survey published in February of this year a growth in unit values of 10%, equivalent to a net of tax return of 10¾% on underlying assets, comes through after five years as a return to a basic rate taxpayer of under 7% on premiums paid. Comparisons made between these contracts and regular unit trust savings plans usually ignore the effect of capital gains tax in the unit price and the fact that the unit trust management charge is deducted from income (thus effectively only costing the unitholder the notional rate (plus VAT) x (1 - his marginal rate of income tax)), but still show the former in an unfavourable light. Life cover is virtually non-existant under the policies; in fact the DTI have questioned whether they are life insurance policies at all.

For lump sum investment similar arguments apply in favour of unit trusts despite the fact that some offices' literature for investment bonds refers to the 'advantageous' taxation position. There is a theoretical advantage for bonds when a higher rate taxpayer whose tax rate is expected to fall, typically on retirement, wishes to invest in a high income fund but I feel that in the main these products are missold for pure investment. Much is made by some offices of the switching facility and there has been a growth in broker funds (where an insurance company establishes an internal fund in the name of a broker who then invests the fund in units of the office's main funds in the proportions he deems appropriate from time to time). Whether or not the facility is of any real advantage must be doubtful.

Capital conversion plans were withdrawn by many offices following the 1984 budget. They now seem to be reappearing with one office using unit trusts as the funding vehicle. I would be interested to know how these can be justified other than on the basis of the salesman's commission.

The one genuine market for investment bonds is probably in the CTT avoidance field. For some offices this must represent a relatively high proportion of total business, with most companies now offering inheritance trust and/or discounted gift (PETA) schemes.

The growth of the latter seems to have been encouraged by recent actions of the Capital Taxes Office.

The final area of the unit linked market is, of course, protection. Before the abolition of LAPR offices were bringing out versions of the flexible whole life policy in great numbers.

There is very little advantage now in these products being designed as qualifying policies (as chargeable gains are likely to be small) and non-qualifying plans have been launched by many offices. To the office the non-qualifying policy has the clear advantage that it is no longer necessary to guarantee a minimum level of sum assured. To the policyholder, much greater flexibility is possible with regard to levels of life cover, premium payments and partial withdrawals than under the qualifying contracts.

The unit linked whole life policy has always offered rather poor value for money, largely due to the high commission payable and possibly also because many of the offices originally in this field cannot afford to give the full benefit of net E. Of course the poor value for money is not so obvious in a contract providing a high level of life cover, and the position is even more obscured by the now common addition of Rider benefits such as additional accident cover, waiver of premium on disability and payment of the sum assured on permanent disability (whatever that is).

One recent development with this type of benefit is the bringing forward of profit emergence, typically to year 2. Where shareholders require a rate of return in excess of the likely investment earnings of the life fund's assets, this enables better value for money to be given to those whose policies become claims by death or surrender at advanced ages. However, combined with the very high commissions paid on these products this approach leads to appalling surrender values at early durations.

In my view this practice could bring the industry into disrepute. To the general public it must seem unreasonable for shareholders' profits to be virtually independent of the duration for which the policy stayed in force particularly when the company sells through its own field staff and hence both shareholders and salesmen have an active interest in persuading policyholders to lapse and re-enter.

Conventional

The system of with profits assurance under which the investment returns on equity type assets are smoothed before being passed on to the policyholder is unique to life assurance and hence there would seem to be a future for this type of business. There is no doubt, however, that the abolition of LAPR has drastically reduced the attraction of this form of saving.

At first sight the results of the May Money Management with profits survey are reassuring; the average of the top five performances in the ten year achieved results tables had given a tax free yield on the gross premiums paid of 14.8% p.a. - comfortably ahead of the achieved yield (net of basic rate tax) under a building society regular subscription account (9%). However, for these same offices the yield on a five year surrender value ignoring any tax on the chargeable gain was 6.6% p.a. and that for a ten year surrender value under a 25 year term contract only 7.5% p.a. Whilst some differential between maturity and surrender yields is justified (higher commission, more life cover and some allowance for mismatching) this latter result seems to indicate that the bonuses of continuing policyholders are being boosted by penalising early withdrawals and I wonder what returns a building society would have produced if it were generally able to do likewise (to a very limited extent some do with 90 day accounts).

Following the introduction of MIRAS, mortgage related business became for many offices the major source of new with profits endowment policies. The raison d'être of this product is the hope that the net return to the policyholder (after allowing for the cost of necessary life cover) represented by bonuses declared (and in turn reflecting the net of tax investment returns earned on the funds less expenses and possibly shareholders' dividends) will exceed the interest rate charged by the lender after allowance for tax relief on the mortgage interest payments.

After the abolition of LAPR it would seem rather doubtful whether this will be the case for a basic rate taxpayer, particularly as building societies now seem to be charging a higher rate of interest, relative to the expected long term rate of return on a life fund's assets, than has traditionally been the case. For higher rate taxpayers the costs of servicing the loan, provided it is less than £30,000 is lower and the endowment route could still prove attractive. No-one given a choice should consider an endowment mortgage for a loan of over £30,000 although this is clearly not yet fully understood by the market.

Whilst the above represents the theoretical position, the percentage of new mortgages covered by endowment policies has only fallen from 60% to 38%, still substantially in excess of pre MIRAS levels and higher than the demand generated by higher rate taxpayers! To limit the damage caused by the loss of LAPR offices have (with the encouragement of the building societies) resorted to two cosmetic devices; both of these reduce the initial premium which is seen as the main selling point.

The first approach is to raise the percentage of future annual bonuses assumed in setting the with profits endowment sum assured. A number of offices now offer a policy with a 100% annual bonus allowance, with provision to review the premium and endowment sum assured following a reduction in bonus rates. (Reviews had previously been the preserve of the unit linked policies in this field.) The size of possible premium increase is limited by the (understandable) wish to offer qualifying policies so in some circumstances it may be necessary to effect new policies to satisfy the lender that the maturity sum will repay the loan without reliance on terminal bonus. Any policy issued within ten years of the maturity date would be non-qualifying, a point some offices seem to be reluctant to point out to prospects. In fact the possibility that further policies might be required at all tends not to be highlighted in the marketing literature and is often relegated to the small print of the policy document.

The second method is to offer low start policies where premiums increase at a predetermined rate, the most common being 20% p.a. simple for five years and this method permits the illustration of big cash surpluses at maturity. The levels of increase are all chosen to be within the qualifying conditions. It is noticeable that there is quite a discrepancy between the rates of interest chosen by the various offices to respread their equivalent level annual premium. ROLAC, as things now stand, would alter the standard commission basis for this type of policy as it insists that initial commission on each premium increase is only paid after the increase has taken place and it will be interesting to see if this affects sales volume.

There have been no moves in the traditional market comparable to the short term plans introduced for unit linked assurances. The minimum ten year period for endowment assurances pre-dates the introduction of the qualifying rules by over one hundred years. A period of ten years is possibly the minimum which will permit the level of "equity backing" required to ensure a worthwhile rate of return to policyholders.

Product Development in the Future

"The withdrawal of life assurance premium relief has guaranteed that the expected returns from saving through life policies are much lower than those from unit trusts or more direct investments, at least for basic rate taxpayers" - FT, June 23 1984.

"Following the abolition of tax relief on life assurance premiums in Mr Nigel Lawson's 1984 budget, any form of savings through a life policy has become unattractive - at least for people who pay only the basic rate of tax" - Economist, August 4 1984.

The assuring public have not yet reacted in so extreme a way as some elements in the financial press and indeed may never do so. The recent run of quarterly annual premium new business figures have been as follows:

£m

Year	1982				1983				1984				1985
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1
Non-linked	86.0	99.5	106.5	128.0	159.5	267.7	199.9	189.0	232.6	156.7	134.0	136.0	127.2
Linked	46.2	53.3	53.7	64.4	64.3	76.2	74.9	85.4	109.0	63.0	58.3	61.9	67.8
Total	132.2	152.8	160.2	192.4	223.8	343.9	274.8	274.4	341.6	219.7	192.3	197.9	195.0

For the future I would put forward the following ideas.

1. In the long term I see little future for unit linked business, except possibly for protection policies. In the short term I think mortgage repayment policies will find greater acceptance, and this is one area where unit trusts cannot (at present?) compete because they are not accepted as collateral by building societies.

(The future for mortgage related endowments as a whole is not very bright, however, particularly if the £30,000 limit for tax relief is not regularly up-dated. With profits sales could be affected by the forced introduction of a more realistic illustration basis which inter alia could try to ensure more consistency between bonus assumptions and mortgage interest rates.)

2. I feel that eventually there must be a move away from the traditional bonus system (which despite the text book comments about 'consent of the assuring public' no-one really understands) towards a deposit administration arrangement, which is already in use for individual pensions. These contracts could be offered on a non-qualifying basis with the facility to take partial withdrawals and pay additional single premiums. Life cover could be granted on a flexible basis, with the costs met in a similar way to that adopted for unit linked whole life policies. I do not see a short term contract as being viable mainly for the reason set out in the previous section.

3. For the long term health of the industry there should be a move towards changing the current system for remunerating salesmen. Greater emphasis must be placed on rewarding good persistency and in return initial commission rates must be drastically reduced (or subject to a much greater degree of clawback on lapse/surrender). For proprietary offices it is arguable that the current levels of shareholders proportion of surplus should also be reduced, particularly while bonus rates remain at present levels.

Summary of Discussion

A long but interesting debate ensued on the competitiveness of our current life UK market compared with other sectors offering alternative financial services. In the unit linked savings market for example there were distinct advantages for the saver investing directly in units rather than saving via a unit linked life contract.

The meeting felt that the main problem which the life insurance industry had to face was the very heavy charges which were levied on life products - in particular:

1. It was felt that the industry paid too much to producers in the way of commission.

2. Although expenses could be recovered thoughout the term of the contract, when expressed as an up-front charge the cost appeared to be unacceptably high and it was felt that the industry had got away in the past with artificially heavy loadings for expenses because of the previous advantages offered to the life industry through LAPR. (The author expressed the view that the abolition of LAPR would not be fully felt by the public until they came to surrender policies which had not received the benefit of tax relief.) If the life industry was to survive into the 1990s serious consideration must be given to reducing the distribution and on-going costs of writing and servicing life business.

The meeting agreed that the main trump card which the life insurance industry could still offer was in the area of protection, where no other institution could offer a similar benefit. It was suggested that it may be a good idea to reduce initial expenses by reducing initial commission payable to intermediaries and to pay higher renewal commissions. One speaker pointed out that there would still remain the problem of high initial expenses other than commission.

It was felt that in the short term, product design would not change unless the industry receives a major shock; a cut in bonus rates was put forward as one such catalyst. This might then lead to the lowering of payments at the front end of a contract and might lead to the intermediaries accepting lower commission. While the insurance industry continued to develop in a vacuum, it would be very difficult to cut down costs significantly. Amalgamations and mergers could take place, but unlike the banks and building societies, insurance at the moment is the only product offered by companies and thus could not be financed on a marginal cost basis. The industry must look in its product design to providing products which represented better value for money and should make further emphasis on the importance of protection and the unique role offered here by the life companies.

One speaker pointed out that if the industry were to change totally to products related to protection, consideration would have to be given to trying to change the basis of taxation of life funds.

The author's brief was for the paper and discussion to concentrate on OB business as opposed to Industrial Business. Having said this, however, several speakers raised ideas for innovation and product design which in actual fact very much reflected certain facets of IB Life business. One speaker suggested that one way round reducing initial commissions was to pay a much lower commission up-front but to pay a much higher renewal commission. This is very much as for IB business. Another speaker suggested that the Broker then be given the right to sell his flow of commission either to a third party or back to the insurance company. Again this is very similar to the concepts some IB companies use in selling books of business. One speaker suggested that a contract which provided some form of cash bonus every so often may appeal to savers; again an IB concept. Several speakers felt that there was a lot to commend some of the principles followed by IB Offices and the general concept of loyalty helped to maintain both existing and new business.

The plight of the early leaver is a cause which is being taken up by the consumer interested Press, and it was suggested by one speaker that currently life offices designed products in such a way that the life office made virtually no loss whenever a contract was terminated. This compared adversely with, say, the building society movement, where the saver can establish an account one day and go back the next day, receive his money back and not be charged for the establishemnt of all expenses in setting up the account. Maybe the time has come to accept that at early durations a loss will be made if a contract is surrendered - the costs of this being met by the continuing policyholder or shareholders depending on the nature of the business and the constitution of the office.

At the moment mortgage linked business has stood up well despite the loss of LAPR. It was felt that this was mainly due to the building societies being dependent on life commissions. The long term future of this market, however, was questioned.

Product design would gradually appear to be passing on more and more risks to the policyholder, especially on the unit linked side where mortality and expense deductions were becoming more variable and being deducted at the whim of the actuary. One speaker commented that LAPR was still available in the Irish market and he felt that more consideration should be given to alternative areas of marketing, where costs could be kept to a minimum. He suggested bulk deals with employers, the banks, building societies and the Post Office, where he felt it may be possible to reduce overall selling costs.

The meeting concluded that product design needed to be radically changed to keep up with other sectors of the financial services market. The biggest problem the life industry faced was the heavy cost of distributing its products to the market. Until this problem was solved it was felt that the industry would be faced with severe problems of contraction. Little help could be gleaned from overseas markets where both the distribution and type of life products had grown up in very different financial environments. The author in his closing remarks emphasised that the discussion of his paper concerned life assurance only. The generally gloomy view put forward did not necessarily translate into poor prospects for life assurance companies which were also involved in such areas as pensions and unit trusts.

PRODUCT DEVELOPMENT : PHI

E.A. Hertzman & R.J. Sansom

A. INTRODUCTION

Reference may be made to the limited penetration of PHI in both individual and group markets, based on figures published by the LOA on new business and in force statistics for the past 5 years. Only about 7½% of the working population are covered.

A comparison with other lines of insurance business shows for 1983 new PHI policies of 98,900, compared to 4.72m on ordinary life, 3.55m on industrial life and 431,000 personal pension policies.

Again for 1983 PHI in force premium income was £100m, with ordinary life 37 times this level, industrial life 11 times, and personal pensions 7 times.

The market seems ripe for new product developments, or a different marketing emphasis.

B. BASIC CONCEPTS

1. Terminology and data

Until about eighteen months ago, there have been few changes in individual PHI product design. Perhaps one of the reasons for this is the difficulties of working with Manchester Unity type sickness functions. To illustrate some of the principles underlying different product designs, I will introduce the terminology and formulae used in North America and show how the commutation functions given in formulae (2) and (3) may be built up from the basic function given in formula (1).

(1) $S_x = l_x \times v^{m/12} \times a^{-1}(x + \frac{1}{2} + \frac{m}{12}:\overline{n|}$

(2) $H_x = S_x \times \overline{D}_x$

$$(3) \quad K_x = \sum_{t=0}^{64-x} H_{x+t}$$

The notation used above is largely self explanatory; "m" denotes the deferred period and "x" is the age at the start of the deferred period.

Reference may be made to the US Exposure Draft proposals for a new disability valuation table. The data required to compute the function given in formula (1) are the claim inception rates and claim termination rates. The CMI statistics already show claim inception rates and good progress is being made with the claim termination rates. The UK data on claim termination rates will not incorporate as many variables as the US data; it will concentrate on rates for males in non rated occupations. Some differentiation of claim termination rates by deferred period will be included at the shorter durations.

2 Practical Formula

The formula for the net current cost premium is easily evaluated and is given by :-

$$(4) \quad \text{net single premium} = \frac{H_x}{D_x}$$

The net level annual premium is usually given by :-

$$(5) \quad \text{Net level annual premium} = \frac{K_x}{N_x - N_{\sigma_s}} = P_x$$

It should be noted that these formulae do not make any special adjustment to the mortality table for active lives to include the decrement of falling sick. Formula (5) is thus a slight over estimate of the net level annual premium for benefits including waiver, as terms in both the numerator and denominator are not adjusted to exclude lives that are claiming.

Apart from specific reserves for claims in course of payment, it is necessary to take account of the "active life reserve"; this is the reserve required because an increasing risk is being covered by a level annual premium. The formula commonly used is:-

(6) Active life reserve = $(P_{x} + t - P_{x}) \times \ddot{a}x + t:\overline{65 - x - t}|$

Again some approximations are present in this formula. It is applied to all policies in force and not just those not on claim, and is thus an over-estimate of the correct reserve.

Reference may be made to the size of these reserves calculated on US data. For issue age 30 this reserve builds up to over 12 annual premiums; for issue age 40 the reserve reaches about 5 annual premiums at duration 10 and for issue age 50 the reserve at duration 5 is less than one annual premium.

C. PRODUCT DESIGN

1. Individual PHI

The concept of long term guarantees on PHI rates is, to my mind, dangerous. It is difficult to project the changing social and economic factors that can influence claims cost over the next 40 years; at least one European country has seen a very substantial increase in these costs during the 1970's and it is fortunate that contracts in that country did not have guaranteed premium rates.

One approach would be to offer a long term contract with the office maintaining the right to increase rates in line with changes in the experience. Such a contract would have substantial active life reserves and changes in experience requiring a change in rates would necessitate an increase in active life reserves and hence increases in premiums varying by duration in force. One way to reduce this latter problem is to offer a 5 year renewable contract. The principal features of this contract are as follows:-

Contract renewable to selected expiry age.
Claims in payment continue to expiry age.
No long term guarantee of rates.
Renewal premiums based on attained age and then current rates.
Small active life reserve.
Selective withdrawals
Premiums and benefit can be linked to the annual change in the Retail Price Index, but not exceeding, say, 15% per annum.

An alternative approach is to use a current cost charging basis, with premiums paid allocated to unitised funds to facilitate the calculation of policyholder benefits. The principal features of this contract are as follows:-

Morbidity deductions collected monthly by deduction from unit value.
Benefits prior to claim may be linked to RPI.
Claims in payment may be escalating or linked to RPI, but not exceeding, say, 15% per annum.
Morbidity deductions are not guaranteed.
PHI benefits can be part of life contract or independent contract.
Sterling reserves can arise as a consequence of the disabled lives claim reserve.

No talk on product development is complete without some reference to profit testing. Although in theory the approach is straightforward, algebraically and computationally it is very complicated. The complications arise because the valuation basis may be more stringent than the premium basis in respect of claim termination rates and interest on the disabled lives reserves.

2. Group PHI

Little is new in product designs for Group PHI, but the following topics could form the basis of a general discussion:-

(i) Rating bases

Use of experience rating/credibility theory, and geo-occupational differentials.

(ii) Profit-sharing Schemes

(a) Minimum scheme size?
(b) Maximum profit refund?
(c) Extra premium?
(d) Claims reserving basis?
(e) Cash or premium offset?

(iii) Benefit levels

(a) Percentage of salary?
(b) Inclusive - of pension contributions?
- of national insurance contributions?
(c) Integration?
(d) Implications of SERPS Green Paper?

(iv) Continuation options

On leaving service (including redundancy?)
On termination of scheme (including bankruptcy?)
Irrespective of new occupation? At all ages?
For claimants? For substandard risks?

(v) Free Cover levels

Based on percentages of average and total sums insured e.g. average sums insured plus 5% total. Maximum £50,000 p.a.
Application to voluntary schemes?
Entry Requirements?
Occupation, aviation, etc.

SOME REFERENCES

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The Actuarial Aspect of Disability Income Insurance - W.G. Westwood; TIA ANZ 1972

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Summary of Discussion

Members of the Workshop first considered the statistics supplied showing the amount of new PHI business written, and in force, in the United Kingdom and agreed without dissent that the market penetration was very small. For example the estimated number of lives covered at the end of 1983 of less than 2 million was compared with the 25 million in the working population although it was acknowledged that many workers had insufficient earnings to make PHI attractive to them. Amongst reasons advanced for poor sales were:-

(a) the time and expense taken to make a sale, compared with that needed for, say, a temporary assurance; one speaker mentioned costs being double those incurred in the latter class of business.

(b) the failure on the part of workers to appreciate their need for disability cover.

(c) low commission, although one member reported that doubled commission produced little perceptible increase in the flow of new business.

The lack of satisfactory morbidity experience was also stated to be a factor inhibiting offices from aggressively developing the market.

Difficulties were also experienced with underwriting, in particular where occupational classifications produced rates above those expected by the proposer.

The data examined did not extend beyond the end of 1983 and it was felt that the withdrawal of LAPR on new contracts issued after 13 March 1984 should assist in the development of the PHI market. The possibility of business being sold by direct mail was suggested but again underwriting problems were cited as reasons why there appeared to be so little enthusiasm for this development.

New Developments on Group and Individual PHI

It was accepted that there had been no significant recent developments in Group PHI, nor, until the last 2-3 years, in Individual PHI.

One of the main difficulties had been the absence of a satisfactory statistical base. The impending production of new data in the American notation was welcomed, being in a form more easily manipulated than the Manchester Unity functions. In particular, the use of claim inception rates and claim termination rates enabled trends to be discerned more rapidly. The expectation of the group was that the latest experience would show higher claim inception rates, and a lower termination rate on long-term claims (but higher for short-term claims) as a result of higher rates of unemployment, and the apparent insecurity of those in employment.

The figures for American experience were discussed with interest, with the much wider differences in experience by occupational classification, and fluctuating differences between the morbidity rates by sex, being particularly noted.

The specification of a 5 year renewable contract was discussed at some length. The contract design was recommended as the opportunity to re-set rates after 5 years gave protection against uncertain experience. It was agreed that the underwriting of such a contract needed to be as stringent as a long-term contract expiring at the normal retirement age. Discussions centred upon the rates of withdrawal after 5 years and the possibility of anti-selection on re-entry. It was concluded that, if new initial commission was paid, and rates were not significantly altered so that business was not actively re-broked, there would be a considerable chance of renewal at the end of 5 years without change of office - this was considered to be akin to the renewal of a motor insurance. Indeed, it could be argued that those prudent lives reviewing their insurances might equally prudently watch over their physical welfare.

Rapid changes in the morbidity experienced in other countries, particularly Holland, were cited which underlined the wisdom of maintaining only a short term guarantee on premium rates.

The contract design of a unit-linked policy subject to monthly morbidity costing was also favoured for the same reason, but there was doubt as to the taxation basis which would apply, if such benefits were written as an independent contract.

Developments in the underwriting area were next discussed. There was thought to be little experience of non-disclosure, or unsatisfactory claims. The normal insistence of potential loss of earnings as well as on disability to establish a claim was upheld although some consideration was given to the possibility of PHI or disability insurance for housewives and others in non-gainful employment. The need was recognised but no great move in this direction was observed except in the area of unit linked life assurance with disability benefits attached. In general, the feeling of the group was that, where disability insurance was granted as an ancillary benefit to a life assurance, say as waiver of premium benefit, the experience was very satisfactory, possibly as a result of the presence of the benefit being overlooked when, in theory, a claim should be submitted.

PRODUCT DEVELOPMENT: INDIVIDUAL PENSION

O. Thoresen FFA

Background

No workshop on individual pensions could afford to ignore the subject of SERPS and the Fowler Green Paper. In fact it could be seen as the biggest challenge currently facing the Actuarial profession. The almost unanimous condemnation of the proposals by the Insurance industry was indicative of poor communication during the period leading up to the publication of the Green Paper, and it was important that the implications of the proposals were understood by the public at large.

The Consultative Document on Personal Pensions, published in July 1984, had been the Government's response to a rising tide of adverse comment in the press and elsewhere on the plight of the early leaver. It suggested, among other things,

- i) Personal Pension accounts which the employee would carry with him from one job to another - so-called Portable Pensions.
- ii) Money purchase type benefits.
- iii) Investment choice by the individual.
- iv) A wider choice of issuing institutions, e.g. banks, building societies, unit trusts.

There followed a period where interested parties were invited to comment on the proposals. This proved virtually impossible since it was very difficult to be certain what exactly the proposals were! Personal Pensions were soon forgotten, however, in the period before the Budget earlier this year when the tax treatment of pension schemes was rumoured to be threatened with change. The industry concentrated on putting the case for continuation of favourable tax treatment and succeeded in preventing change, at least temporarily.

Hardly had it become clear that no changes in taxation were proposed, however, than a strong rumour emerged that the State Earnings Related Pension Scheme (SERPS) was to be abolished. The publication of the Fowler Green Paper confirmed these rumours, and also indicated the Government's alternative proposals.

The Target Market

a very small proportion of the population held stocks and shares, or Unit Trusts. Most of those who would fall within the Portable Pension net would have some form of investment, but it was far more likely to be in the shape of a bank or building society account. This had several implications for the design of the product.

Method of Distribution

How many types of institution would wish to offer portable pensions? Would the business be sold by Building Society clerks, direct salesmen, or insurance intermediaries?

The Individual Pension Product

Points on product design which might be discussed include:

a) the flexibility of premium payment
b) the investment medium
c) expenses
d) administration systems
e) how best to cover the market, from the director at one extreme to the labourer at the other extreme.
f) other ancillary benefits (e.g. loanback, waiver of premium etc.).

Communication

It was likely that the 'SERPS - substitute' would be sold to people with little technical knowledge, by people with only marginally more. The current discussion on methods of quotation and illustration of expected benefits had considerable relevance in this area.

Some Problems

The following problems of practicality suggest themselves :

a) unisex annuity rates
b) low average premium
c) coping with job changers

d) seasonal employees
e) irregularity of payments
f) poor premium persistency
g) keeping track of the policyholder

The effect of most of these seemed to be to push the expense costs up. Is the business worth having at all?

Summary of Discussion

In considering product design it was agreed that the Fowler minimum may have restrictions. The final pension would be sensitive to investment returns and the interest rate current at retirement. Contributions would be flexible. Which medium would be chosen - with-profit, unit-linked (too risky?), Building Society account (understandable?), or Bank account?

There was a worry that other institutions would take a large share of the market. In the United States Banks and Savings had taken 60% of the market.

Fear was expressed over the problems with unit-linked contracts. Initial loadings and capital units were too complex. Simplicity was the answer with one single charge at the front which could be explained.

Building Societies didn't see themselves as much more than house finance providers, they were mutual and not commercial, but things could change. They didn't pay commission and they had no front end loading. How could insurance companies compete?

Amounts of premium would be variable and random so direct debit would be useless. High volume, low premium and random periods would suit Building Societies and Banks since they already have the administration to cope.

It was pointed out that the equivalent of capital units for deposit administration contracts is to take a margin on the interest rate. This is exactly what the Building Societies and Banks do. To keep up the rates of interest would need equity and property investment. This would create mis-matching since the Green Paper was phrased in terms of capital guarantees.

The problems of small/variable amounts of premium didn't suit Life Assurance companies. One possibility was that initial contributions could be locked into a Bank or Building Society but after some time an employee could draw a cheque or standing order on his account to pay into an insurance company policy which would give better returns. The insurance company could offer the option to add ancillary benefits, for example death/waiver of premium needing insurance. Others thought it would be dangerous for Insurance companies to opt out of round 1. We might not be able to join the game in rounds 2, 3 and 4.

Some thought that Banks and Building Societies would be the natural recipients of contributions. They would offer a range: deposit account; index-linked mortgage account; and more sophisticated unit-linked accounts. Insurance companies would be selling their products to the Banks and Building Societies otherwise they would be setting up a banking system which would be costly.

A link with the employer and salary deductions were fundamental. SERPS at maturity is approximately equivalent to a 70% increase in the basic pension. A 4% contribution doesn't quite replace SERPS using one projection.

Life Assurance offices were good at some forms of premium collection, investment and paying out claims. However, the following areas should not be forgotten: Accounts, Systems, Valuation Returns. To avoid solvency margin problems a contract should be unit-linked but there would be no guarantees. There could be no annuity guarantees, only the rates available at retirement.

Capital units could not work with fluctuating monthly contributions. Would initial commissions be paid? It would be much better if the Revenue could define maximum limits in relation to contributions rather than benefits.

Individual pensions were meant to give a choice but there would still be a concentration of investments in Banks, Building Societies and Insurance companies. These would end up owning British Industry and it only took a Government to nationalise these institutions to end up owning most of British Industry.

The Speaker summed up as follows:-

1) Accumulating in a Building Society or Bank and then switching to an Insurance Company would involve two sales. There would be a certain amount of inertia: would they transfer?

2) The policyholder would receive a superior return from an Insurance Company compared with a Building Society, but he doesn't necessarily appreciate this.

3) Front end charges have been too high in the past for pension contracts. This may mean that a lot of the extra business does not come to us.

The Chairman summing up said that group and individual pension scheme business would merge. One would have a group scheme which consisted of a series of individual accounts. The employer would have to be involved, unlike Section 226 contracts. Catering for 10 million employees would mean that the product design had to be innovative.

<u>PRODUCT DEVELOPMENT : GROUP PENSIONS</u>

or

The development of products with sufficient flexibility to cope with changes in legislation, policyholders' requirements, competitive pressures and investment opportunities, whilst satisfying the requirements of long term security and minimum overall cost.

P.R. Hogley

Group Pensions is a very wide subject and therefore we must begin by narrowing down the field. I want to concentrate on genuine insured group pensions business as viewed through the eyes of the insurer. I want to consider the fairly basic questions

(1) What is the market for genuine insured group pension business?

(2) What basic structures are available for the product?

(3) What charging structures are available?

(4) What bonus structures are available?

Before turning to these questions I want to briefly mention the features the client is looking for in his chosen pensions vehicle and to mention the problems the insurer has to contend with in his product design.

By the term "client", I am thinking primarily of the Employer although the Intermediary, Trustees, Employees and various Government bodies all have an effect on the product design.

The major features the client requires are:-

(1) Low cost given the benefits promised to members
(2) Security of benefits
(3) Stability of costs

(4) Flexibility to cater for his own changing business needs
(5) Flexibility to cater for legislative and environmental changes
(6) Simplicity

The problems the insurer has to contend with are:-

(1) Strong, varied and sophisticated competition
(2) Variety of client needs/benefit structures
(3) Effect of product changes on the existing portfolio
(4) Variability of unknown future conditions in investment, legislative and mortality fields
(5) Extent to which cross-subsidies between clients are allowable in expenses, bonus allocation, discontinuance terms, anti-selection
(6) Capability of his administrative systems to handle the product's complexities
(7) Development of appropriate valuation bases

What is the market for genuine insured group pension business?

What size of employer or category of employee should the insurer be aiming at in designing his product? Clearly, a small employer with two or three employees would be better off with a collection of individual policies and a large employer with thousands of lives should be self-administered. To narrow down the range one has to ask why have an insured scheme at all.

The employer does not need to have an insured scheme to obtain pensions expertise or an administration facility or investment expertise. These can all be obtained separately and the insurer is just one of a number of available media.

The unique features the insurer can offer are investment insurance, mortality insurance and economies of scale. Prior to retirement, mortality is not really a risk because death gives a release to the fund. In retirement longevity is a risk, but that is only an argument for Immediate Annuities rather than for group pensions.

The investment risks are also minimal provided cash flow is large enough to meet expected outgo without the need for disinvestment. For a small scheme an unexpected early retirement or an unusual flow of withdrawals can lead to disinvestment at an inopportune time and so there is an argument for obtaining capital or other investment guarantees.

An employer can always pay separately for an investment manager, employee benefits consultant and administration package. However, the economies of scale are such that overall it may be cheaper for a small employer to bundle everything together and use an insured vehicle.

One ought also to ask the question, "Why shouldn't the employer have an insured scheme?"

Apart from the obvious (that by doing so he is contributing to the insurer's profits), enjoying the benefits of an insured scheme means also enjoying the discipline in terms of a restricted range of benefit formulae, restricted investment philosophy, restricted use of monies for other than normal extractions and restricted treatment of normal extractions.

Who wants an insured group pension product?

<u>What basic structures are available for the product?</u>

Essentially there are only two structures:-

(1) Conventionally costed or chargeable rate structures whereby benefits are purchased for particular members in advance of maturity.
(2) Deposit administration whereby a pool of money is built up to meet maturities as they arise.

The former is currently out of fashion and probably doomed to the history books because it fails to cope with inflation or abnormal changes to membership or benefits. From the insurer's viewpoint it required substantial reserves, but did have the advantage of giving an opportunity for mortality and interest profit.

The latter usually incorporates a capital and income guarantee with a series of pools relating to the year of initial investment. The pools are usually employer specific although unitised versions are being developed.

Such pools give the required versatility for normal ongoing scheme operations, but the insurer finds it harder to hide away profit margins and has to protect himself against the cost of abnormal extractions at an inopportune time. Annuities are compulsorily purchased at maturity, usually with an open market option.

If one views current interest rates to be high in relation to future expected investment yields, then there is an argument for using non-profit deferred annuity rates to secure some of the accrued liabilities, leaving the insurer to worry about the problems of long term investment and reinvestment yields.

An amalgam of NPDAs and Pools may prove an interesting concept!

Pools on their own have the disadvantage that, in theory, the underlying investments are invested to produce a fixed amount of cash at maturity. How does one cope, then, with volatile immediate annuity rates? The capital guarantee is fine if interest rates are rising, but a handicap when they are falling.

Is there a better structure available?

<u>What charging structures are available?</u>

It's a fact of life that employers never appreciate the size of the real cost of running group pension schemes. It's also a fact that most employers only look at overt charges and forget about the covert ones.

The charging structures used are a combination of:-

scheme charges
per member charge
premium charge
extraction charge
yield subsidy

where the level of charges varies with size and complexity of the scheme. Some are completely overt, some covert and some disguised as with an initial and accumulation pool structure.

The insurer's dilemma is, if he makes the charges more closely fit the expenses of handling the particular scheme, then he has to make the charges more overt.

If he makes the charges covert, for example, relying on a yield subsidy, then the discontinuance terms must recoup the unrelieved expenses and the apparent yield on pool monies is depressed.

Compared to the cost of obtaining investment, actuarial etc. services separately, the insurer's economies of scale ought to be such that completely overt charges, split by type of service provided, should prove competitive in the face of non insurer's competition. It will be a brave insurer that adopts that ploy in advance of his fellow insurers!

What bonus structures are available?

Let's assume, here, we are considering pure deposit administration with a conventional mixed charging structure. There is a tremendous range of choice. At one extreme there is the conventional with profits approach of declaring a single bonus rate each year to apply to all pools irrespective of the different investment conditions at the date the money was received. At the other, there is a complicated array of bonuses matching the flow of investment income generated by different tranches of premiums. A typical structure would be to split the total pool by calendar year of premium payment. On each subpool one gives a guaranteed yield from outset and each year declares a bonus on the subpool. The bonus additions can be added to the original subpool or credited to the newest subpool or both. Extractions would be taken from the newest subpool or oldest subpool or some combination of pools and possibly a terminal bonus can be granted as well. As I said there is tremendous array of choices!

We have to ask, "what is the bonus structure trying to achieve?" Given that the policyholder cannot get his hands on the nominal pool without going through the discontinuance terms other than by a steady flow of normal extractions, the bonus structure has a cosmetic element as well as a long term equitable disposal of surplus element. It is better for the bonus system to release the investment proceeds at as high a level as possible and as early as possible by reversionary additions to the pools than to hold them back until extractions take place. (i.e. using a market value as opposed to book value approach for declaring the pools).

The marketing advantages of a high declared yield and making the yield respond more closely to the variations of stock market performance have to be offset by the problems of reducing bonuses when the investments have not performed that well and handling a decline in the capital value of the underlying assets given the capital guarantees in the product.

In group pensions business the impact of the bonus system on the discontinuance terms cannot be ignored because discontinuances are a fact of life. In recent years company liquidations, takeovers, mergers, rationalisations of pension arrangements, switches to managed funds and self-administered arrangements have all increased. Is it better to declare high bonuses and give on discontinuance less than the nominal value of the pool or to give lower bonuses and give at least nominal value of the pool on discontinuance?

Summary of Discussion

The workshop was given four broad questions by the presenter to consider as a basis for discussion:

1. Do we need a group 'insured' vehicle?

2. Is deposit administration the right vehicle?

3. Is the current charging structure right?

4. Is the current bonus structure right?

In true actuarial fashion the discussion largely side-stepped these direct questions and a lively exchange of views developed. There were some 25 separate contributions which encompassed as many viewpoints!

The main discussion points centred on the relative merits of 'money purchase' group schemes versus 'final salary' arrangements, unit-linked (managed funds) versus with profit (deposit administration), 'open charges' versus a hidden charging structure and the usual contentious subject of the early leaver and the calculation of discontinuance terms.

Some of the individual views expressed are paraphrased as follows:

'Money Purchase'/'Final Salary'

"Traditional employee benefit brokers ignore the small end of the market. More aggressive direct sales brokers and companies are taking advantage. Trend is towards 'individuals' being administered as 'groups' - on a money purchase basis".

"Money Purchase becoming increasingly popular".

"There is a need to show more openly to the individual what benefits have been accumulated - advantage of individual accounts".

"You can't bridge the gap between money purchase and final salary".

"Some new plans <u>can</u> bridge the gap between money purchase and final salary".

"You can always target towards final salary related benefits using money purchase".

"We should defend final salary schemes".

<u>Managed Fund/Deposit Administration</u>

"Deposit administration is being squeezed between money purchase and managed funds".

"Why have deposit administration?"

"A scheme needs to be able to grow with the employer from 2 members to 1000 members - insurance companies need to design such schemes".

"Insurance companies set up barriers between deposit administration and managed funds".

"Insurance companies ought to fight harder for all aspects of pension schemes, life assurance, PHI <u>and</u> administration services - it's our strength".

"Why not unit-linked for 2 members?"

"Could unitised With Profit funds provide an answer?"

<u>Charging Structure</u>

"Charging structures are complex but are preferable to fees because of the need of a degree of cross-subsidy between large and small schemes".

"Cross-subsidy is unfair - it is a weak argument - open fees are preferable".

"Small schemes are, in fact, often self-supporting. Large schemes are subject to much more competitive pressure by brokers and charges are much more marginal".

<u>Early Leaver/Discontinuance</u>

"We need to get our act together before the building societies and the banks do - we must reduce our front end costs".

"Deposit administration funds are portrayed as being like a Building Society account - except they have a habit of disappearing on surrender".

"It's strange how insurance companies can miraculously improve their discontinuance terms when challenged by a broker".

"More often than not it is the employer who doesn't want to improve early leaver scale benefits".

"The pensions industry is to blame".

PRODUCT DEVELOPMENT : A TRANSATLANTIC VIEW

P.S. Carroll

Introduction

1. Do recent developments in North American Life Insurance provide useful indications as to the development of UK Life Insurance since the demise in March 1984 of Life Assurance Premium Relief - LAPR?

The pattern in North America has been encouragement of Life Assurance by way of tax free rollup in the Life Assurance fund rather than by LAPR. Often indeed States in the USA levy premium taxes on Life Assurance. So with the demise of LAPR, UK Life Assurance has moved closer to US Life Assurance. There is not yet, however, tax exemption for investment income on Life Assurance funds in the UK unless such Life Assurance is part of a Pension fund.

Life Assurance is a mass market of individual consumers (unlike Group Pensions Business). It often happens that developments in a mass market in the US become rather important in the UK. Equally the different character and conditions governing the British market may make what is successful in the US less so in the UK. I plan to consider in turn three major recent US developments.

A. Universal Life. This is flexible, unbundled Whole Life Assurance with the capacity to vary premiums and benefits and to vary the mix of savings and life cover, and other benefits.

B. Payments of Life Assurance premiums by Deduction from Payroll.

C. Select/Ultimate Term Assurance. This is term assurance with initially low premiums in the first year or two when the life assured has been shown to be in good health.

A. Universal Life

2. Will the advent of Flexible Unit-linked products in the UK have the same consequences as the advent of Universal Life in the US?

Whereas unit-linked Life Assurance in the UK has for some time made available a considerable degree of unbundling so that policyholders are aware of how many units stand to their credit at any time and what their life cover is, Universal Life in the USA is a more radical development in itself. The same move to separating the savings or investment element from the Life Cover element is to the fore in the USA - "Buy Term and Invest the Rest". But in the USA there is more emphasis on Life Cover as the first objective. Extra savings that exploit the high gross interest rates in the USA in recent years are then an added attraction. In the UK unit-linked products have often been marketed (before the demise of LAPR) as the most advantageous way of buying units with the minimum of Life Cover. Since the demise of LAPR the flexibility of the new plans in the UK may be regarded as a selling point which can be used in a marketing campaign now that LAPR is not available. Even greater flexibility with the capacity to vary the premiums each year is possible with a non-qualifying Life Policy.

3. Which is better now, a Qualifying or a Non-Qualifying Policy in the UK?

A qualifying Policy retains some tax advantage - the proceeds are free of all UK tax. A non-qualifying policy offers more flexibility.

4. Why not just sell units? - Is Life Cover so essential?

Tax considerations seem to favour units per se except for higher rate tax payers. But the greater freedom of action in marketing Life Assurance and, of course, the traditions of the Life Insurance industry favour some measure of Life Cover or at least the status of a Life Policy.

5. What makes a Life Policy a Life Policy?

Various definitions have been suggested

(i) Death Benefit $>$ Surrender Value.
(ii) Death Benefit $>$ 101% of Premiums Paid.
(iii) Death Benefit $\geq$ Offer Price of Units.

6. <u>What form of flexible policy will prove most advantageous in a time of continued high interest rates and high inflation?</u>

Index linking of Premiums is even rarer than index-linking of Life Assurance benefits in the UK. Index-linked investments are available in the UK. The emphasis in unit-linked products is investment in Ordinary Shares rather than Index-linked Gilts. Also, of course, the Qualifying Policy rules have hampered index-linking of premiums. A traditional (even non-profit) Whole Life Policy that is fully index-linked might be a success in the UK.

7. <u>What is to be learnt from the marketing of Universal Life products in the US?</u>

The marketing of Universal Life in the US has been very vigorous. Offices which have not developed a Universal Life Policy seem rather ashamed at not having done so. Yet the leading Life Insurance salesmen seem often to use Universal Life as a talking point and prefer to actually sell traditional Whole Life. Incidentally the projections used for the latter are not very different from our Reversionary Bonus system of participating Whole Life. American cash bonuses calculated on the contribution principle can be reapplied to increase the sum assured.

As an American actuary, Hobson D. Carroll of Minneapolis has said about Universal Life "It's got a lot of pizzazz." He later amplified his remark by saying "I believe my term for Universal Life was that it has "pizzazz", meaning that the name has a lot of charisma to it. My point was that it is quite faddish to have a Universal Life product, and there is a bit of public relations value to the name itself, whether or not the product is sold and/or administered for the true value and uniqueness of its features. All the agents want to be able to answer "yes" when asked if they can illustrate a Universal Life policy to a client".

"My impression, however, is that the name Universal Life is an attention getting device simply because it's "in the news". Often, the features illustrated are current interest rates and guaranteed mortality charges, both of which are now commonly available with products which are not "Universal" in nature. The real value of Universal Life, in my opinion, is the single policy concept, where you need never again buy a separate contract to fulfill your insurance needs. And, of course, there are some additional bells and whistles. Flexibility is the key, and rear-loaded, surrender charge products are beginning to be favoured in some quarters." Sales personnel may be influenced by the greater transparency of commission rates in such new products.

B. Payroll Deduction of Life Assurance Premiums

8. Why is this a major new business in the US but not really promoted in the UK?

The American Pru has stopped issuing new IB and set up a new company specialising in deduction business. There are several new American Life Offices that specialise in Payroll Deduction. In Ireland, where the legislation is similar to the UK with LAPR surviving, Payroll Deduction accounts for perhaps one-third of all new Life Business.

The large life offices in the UK do not perceive a market for Deduction business. They regard Ordinary Branch Life Assurance with premiums paid monthly by direct debit as the best arrangement for individual business and Additional Voluntary Contributions to Pension Schemes as the only form of Deduction Business they wish to promote.

9. What are the advantages of Payroll Deduction?

It is interesting that American Life Offices, with a less centralised banking system, do not encourage monthly payment of premiums. In fact our own monthly direct debit system could be rather expensive for a policyholder with several policies with several different life offices. Even greater cost savings of course could be achieved in relation to IB business. Group Life cover is often wasted on those who have no dependants and do not want a large death benefit. An employer may spend 1% of his payroll on Group Life but a deduction scheme costs him nothing.

Payroll Deduction as in Ireland can claim to reach a new clientele intermediate in social class between OB and IB. The administration and sales of Deduction Business in Ireland is included in the OB (and the higher mortality of Assured Lives in Ireland is attributed by Irish actuaries to the presence of a sizeable contingent of deduction business). In Ireland Deduction Business is not seen as displacing IB but rather complementary to it. IB is on the man's life but paid for by his wife as a household item. Deduction life Assurance is on the employee's life.

In Ireland the minimum premium for deduction is that for OB (Ir £15) whereas in America small premiums for deduction business are accepted, e.g. US $2 or even US $1 per week. American Payroll Deduction Offices would like to increase these small premiums by using Universal Life type products to index-link (or at least increase) the premiums. Hobson D. Carroll went on to remark: "An interesting, but not very recent, development in the US is the combination of your first two topics: Universal Life as a Payroll Deduction product. UL, or something like it, is being illustrated quite often as a payroll deduction offering, with a large "PR" job including slide and/or film presentations utilizing the old "savings" approach to selling life insurance. This is done in both group and individual meetings with employees."

C. Select/Ultimate Term Assurance

10. Will an increase in Term Assurance rates in the UK be followed by American style promotion of initially low cost Term Assurance?

When premium rates in the UK for Term Assurance are so low there is not much temptation to introduce extra low rates when the life is select. If however premium rates for Term Assurance do increase as some say is necessary there is the possibility of allowing a reduction in premium for select lives. Term Assurance has in the past been regarded as a way of attracting new customers who may also take out Whole Life or Endowment Assurance or later convert to what is a more profitable class of policy for the office. Term Assurance in the UK is always non-participating so there is no mechanism to compensate the policyholder if experience later shows that the premium rates were initially too high. Reinsurers allow direct writing offices a low select Risk premium rate for the first year of a Life Policy and in the US support from reinsurers has enabled even small life offices to make available low cost select rates to policyholders. However, this is not regarded as an American success story and the lesson to learn from this development in the American market is that it is best avoided. There were problems with deficiency reserves and lapse and re-entry. In practice in the UK it may be that Term Assurance rates will remain low being influenced by the UK Life Assurance tradition of providing this service at low cost. Also the continuation of high interest rates may offset other cost factors in the premium basis making an increase in premiums avoidable.

Summary of Discussion

In introduction it was noted that a number of influences on our general life style had been imported from North America, and that these had included both successes and failures. Accordingly, it was felt appropriate to examine the Life markets on both sides of the Atlantic to examine differences particularly with regard to product developments.

Universal Life

In recent years a major development within the United States of America has been the Universal Life Policy. Such policies are very similar to flexible unit linked whole of life plans currently on offer within the UK. However, the lack of qualifying regulations has resulted in a more flexible product being available in the USA. Further, the dominant product within the USA is linked to a deposit fund rather than an equity type fund. This results from legislative difficulties concerning the sale of equity linked life policies which are subject to the control of the Securities and Exchange Commission.

The apparent flexibility of the American product is not as great as might be thought, as a number of UK companies have managed to allow indexation of premiums by the simple expedient of issuing increment policies. Concern was expressed that a number of American companies appeared to have experienced difficulties because the front-end load is not acceptable in the USA and also the surrender charges were proving inadequate to cover initial costs.

Offices appear to have had mixed experiences of lapse rates with this particular type of plan, with one office claiming a lapse rate of below 10% per annum, whereas another had suggested that the term "Plan for Life" should be replaced by the term "Plan every year for Life". Mention was made that one company was experiencing mortality of approximately 70% of the inter-company 65/70 experience, which was acceptable. A facility for paying additional first year premiums, "dump-ins", is proving particularly popular.

It was noted that the Universal Life plan came about in the United States as a result of dissatisfaction in the 1970's with poor investment returns from Insurance contracts at the same time as high interest rates prevailed. It was suggested this might be a short-term problem and the question raised as to whether, as interest rates fall, it will remain a popular plan. Concern was expressed that, by investing the funds associated with these policies in long term bonds, there was a danger of a mis-match and it was noted that this might cause particular problems if there are high lapse rates. The original plans were issued with low commission, but commission rates have since been increased, aggravating the problems on early surrender.

The unit linked version of this plan, Variable Universal Life, is subject to monitoring by the Securities and Exchange Commission. Salesmen require to be licensed and examined, and maximum expense loads are specified for this class of business.

This particular type of plan has not become popular in Canada, and in many respects the plan has its origins more on this side of the Atlantic than in North America. It was suggested that in fact this was an example of traffic the other way across the Atlantic. Though here it was seen as replacement for the non-profit whole life policy, in the United States it was intended as a replacement for yearly renewable term assurance which was having an unsettling financial effect on the market.

Payroll Deduction

This system of premium collection though used in the UK does not appear to have the same impact as in the United States. Delegates contributed their experiences from other territories.

It was estimated that in Ireland approximately one-third of new business originates through this form of collection with some companies receiving up to 50% of their new business through payroll deduction. Currently seen as a bridge between Industrial business and "UK style ordinary business," the origin of this large class appears to be historical, arising out of the state service. However, it was noted that many difficulties arise with this type of business and, in particular, there is a very high Not Taken Up rate.

It was noted that the provision of credit terms for employers was a requirement under these schemes, and that a handling fee, typically 2½%, would normally be required or else the provision of some additional benefit to the workforce, such as double accident benefit.

Considering the Australian markets, it was noted that Universal Life policies tended to be written by small offices. This had resulted in considerable problems of reconciliation for their payroll deduction schemes, these being compounded as a result of internal problems within the Civil Service.

In the UK Civil Service schemes are also available, but local rules in Civil Service administration can often restrict operations. The Post Office and British Telecom are large users. The Australian offices have a large stake in the UK market, possibly because this is such a major feature of the Australian markets. It was noted that in addition to the high N.T.U. rates, this market is also noted for low average premiums, high mortality but a lapse and surrender rate which is somewhat lower than that which is experienced by direct sales forces.

It was noted that there are many private sector pension Additional Voluntary Contribution schemes operating in the UK and that in many instances these probably meet similar needs to those policies with premiums paid by salary deduction. Private medical schemes are already offered by a number of offices within the UK and it was likely that the Fowler proposals would result in considerable growth in salary deduction for pension provisions. It was thus suggested that it may well be proved popular to add a Life Insurance rider on top of the "Fowler 4%".

It was concluded that a lot of payroll deduction is probably going on in the UK though it does not receive the same amount of publicity as in other countries.

Term Assurance

Some consideration was given to the use of select/ultimate charging for term assurance. The American patten in this market seems to be to offer one year renewable term assurance with select charging in year one. Clearly, this offers an enormous lapse and re-entry option, which sees a coincidence of interest between client and intermediaries. As a result there is a very high lapse rate, and a consequential worsening of mortality experience. To some extent the direct writer is able to recover the resulting losses by reinsurance; however this is not viewed with continuing optimism.

There was a general agreement that the UK would not wish to enter into such a market.

Influence on Legislation

It was noted that within the USA there was considerably greater lobbying by the Insurance Industries.

It was generally agreed that such lobbying would be helpful for the industry in this country, and consideration was given to possible areas in which lobbying might be desirable in the near future.

One possible area for such lobbying would be with regard to a new framework for qualifying policies. Alternative views were expressed requiring either a greater consistency of tax treatment between different forms of investment, or a suggestion allowing exemption of policyholders' proceeds from tax with expenses being non-allowable for tax purposes. Under this regime it is presumed that only "shareholders' profits" would be taxable.

PERSONAL COMPUTING

N.F.C. De Rivaz

Summary of Speaker's remarks and Discussion

The Evolution of Personal Computing

The subject of personal computing, in the actuarial context, has been taken to include any form of 'on demand' computing power, whether using a micro computer, or a terminal onto a mainframe system.

The present position in different companies can vary widely, and is often linked to the date on which computing power first became available. Technological developments have proceeded more quickly than companies could respond, so that those who computerised earlier will lag behind on the latest advances.

Development within life offices has also been coloured by the need to analyse large volumes of data; thus until recently increasing the attraction of mainframe terminals as opposed to micro computers. However the power of modern micro computers has allowed the development of quite complex business models. Profit testing for new product design is now a well established application.

Lessons that have been learned

Anyone can learn to program, and actuaries in general enjoy it; but should actuaries become involved in programming at all? Programming takes time and is a waste of a valuable resource. Some offices are in the lucky position of having ex-actuarial students within the DP area, which makes the delegation of the programming an easier task. Otherwise it can be quicker to do the job yourself rather than explain what is required to DP.

Personal computing is usually concerned with small jobs that are created by one person to solve a particular problem. The solution, once created, then tends to grow gradually into a more complex system. This emphasises the need for proper design of such applications in the first place, or strict control to stop systems being misused for purposes other than that originally intended. Even within actuarial applications, such as office models, future maintenance of the programs can become a very time consuming occupation.

While packages are available for certain applications, it can often take so long to evaluate the available packages that it would have been quicker to do the job directly.

Current Applications

The most significant application of micro computing power is model building. Profit testing models have been in use for some years as a tool in the development of pricing of new product designs. This is an ideal micro computer application involving considerable computing power but little data storage. The development of graphical capabilities gives scope for ingenuity in the presentation of the results of modelling exercises.

Generalised package programs such as LOTUS SYMPHONY are being increasingly used. The capabilities of such spreadsheet packages are now such that when used on a powerful micro computer, it is possible to carry out modelling exercises completely within the package. This removes any direct programming requirement from the actuary, and probably produces an easier to follow model as well.

Data transfer links to mainframes are becoming more common, although it is generally not efficient to transfer large volumes of data. Mainframe programs are used to summarise the in-force data of a life office into 'model points' which can then be transferred across to a micro computer for input to the profitability modelling process.

Looking to the Future

As the pace of technological change in the micro computer industry slows is it likely that more standard packages will develop? Alternatively if the generalised packages continue to improve the ease of direct use of micro computers, specific packages may not be necessary.

Specialised languages (such as APL) are available for particular purposes although FORTRAN is probably still the most efficient for programs requiring frequent running. APL has a band of enthusiastic supporters within the profession, who maintain that its use for on-line work gives great advantages. However others have found that it is slow, especially if dealing with large volumes of data, and can consume excessive amounts of memory. Programs written in APL can be very difficult to follow.

The continuing growth in data requirements will often make a mainframe essential if only as a data store and maintenance machine, with most of the processing being performed by micro computers. More efficient data interfacing will be required.

Various smaller models in use, such as sales forecasts, taxation, expenses, product profitability etc. can be combined to produce a more complete 'office model'. In the case of very large modelling exercises it may again be necessary to process the initial stages at least on a mainframe.

Portable micro computers open up the opportunity to develop 'expert systems' for use as sales aids at the point of sale. The use of portable computers had been tried by at least one office who found it to be very successful. However, the point was made that this was an area where, once entered, it is difficult to back out later. In order to keep maintenance under control, it is important to avoid any departures from the standard programs.

It was clear that the requirements of the different groups within the industry differ substantially. Larger, older established offices need significant mainframe power for normal data administration purposes, and the availability of such machines has tended to keep personal micro computers more in the background. The consultancies have almost the opposite position. In between are the smaller life offices some of whom are taking the networked micro computer route. Continuing developments are allowing greater volumes of data storage to be attached to these networks.

<u>Overall Aim</u>

Finally it was emphasised that the objective of using any form of personal computing remains to free the actuary to concentrate upon the more important parts of the job.

TAXATION

J.R. Coomber & C.B. Russell FFA

1. Is there a best tax position for a life office?

It is generally agreed that a tax paying life office can quote better terms in respect of regular premium business than an office with excess expenses. Most life offices would regard regular premium business as that which they most seek and might tend to prefer this tax position.

It is generally recognised that excess expenses represent an off balance sheet asset.

Is there a conflict between these two propositions and can they be reconciled?

2. Tax in product pricing

An office with excess expenses can quote more favourable terms for guaranteed single premium bonds. A similar conclusion must apply to single premium unit linked bonds. What adjustments to product terms should be made to allow for the excess expense position?

What adjustments should be made in respect of regular premium business when immediate tax relief on expenses is not available?

In making calculations, should any term of years before relief is available be based upon existing business only, or should allowance be made for future business?

3. Appraisal Values

A number of life offices seek a regular independent "appraisal" valuation of their business so as to assess progress. It may be used as a measure for management incentives, or it may be relevant to the way in which the value of the company is treated in the accounts of a parent.

It may be arguable whether appraisal value is an estimate of market value, but it will be common ground that appraisal valuation should take account of all relevant factors which will affect the proprietors' profit however far into the future. An appraisal value is likely to be based on existing rather than potential business.

What account should be taken of excess E for this purpose?

If excess E is an off balance sheet asset, is excess I also an off balance sheet asset? If the first calculation of appraisal value allows for tax at the normal rate on excess I, should account be taken of the fact that by various means it may be possible to reduce or eliminate that tax by issue of future business or otherwise?

4. <u>Investment</u>

Most life funds include a mixture of gross and net business, and funds from the latter may or may not be taxpaying at any given time. Some offices make investment decisions using the assumption of a marginal rate of tax based on the percentage of business which is in the net fund.

Offices do not calculate premium rates based on the mean tax position as between net and gross. Is it legitimate to use a mean marginal rate for investment purposes?

5. <u>Corporate Structure</u>

Some offices compartmentalise various categories of business such as pensions, PHI and unit linked into separate companies. Others write some or all of these categories in one company.

Do these differences result from the various situations in which offices find themselves, from differences of opinion as to the best strategy, or from different philosophies as to risk?

<u>Summary of Discussion</u>

In discussing the overall tax position, while most contributors accepted that a tax paying office can quote better terms for regular premium business than an office with excess expenses, some doubt was expressed as to whether, in general, an office could be better off by paying tax. Attention was drawn to the extraneous influences on some offices' positions - for example where they are the UK Branch of an overseas Life office - and to the erratic nature of capital gains, fluctuations in which can quickly alter the overall position.

In considering the effect of taxation on premium calculations much of the discussion centred around how relief on expenses should be shared between new and existing business. It was suggested that new business should be priced by looking at its likely effect on the office's future tax position, possibly requiring several estimates of new business volume on different tax bases.

Lastly the influence of different contracts on an office's tax position was considered. Whereas it had been common practice for developing offices to issue single premium bonds to obtain relief on expenses as quickly as possible, the appearance of new contracts, such as unit-linked whole life policies, which entail heavy expenses, raises the question of whether an ofice can price such products on a net basis with confidence or whether they will necessitate the issue of single premium bonds by traditional offices. The importance of tax to the profitability of all unit-linked business was stressed.

Although there was some discussion about the way in which excess expenses should be treated in formulating investment policy some contributors felt that for mixed life and pension funds the average marginal rate method should be used as too sophisticated an approach might distort investment policy unnecessarily. For unit-linked funds there was usually a difference in treatment between the individual fund and the office as a whole and although this presented a dilemma one contributor was unhappy with the suggestion that it could be resolved by moving away from a matched position.

CORPORATE PLANNING

A.R. Bland, K.H. McBrien & J.L.Riley

Why Planning?

1. For Planning to be able to contribute towards an organisation's future development, necessary (but not sufficient) conditions are:-

1.1. The organisation must be motivated by longer term goals than immediate survival.

1.2. There must be sufficient economic stability to make forecasting credible.

1.3. The organisation must take planning seriously.

2. Planning is an essential attribute of the good manager, so does good management need a formal planning function?

2.1. A formal set-up allocates experienced people to a role where they can look ahead without the priority pressures imposed by line management responsibilities.

2.2. Although the Chief Executive is, by definition, the Chief Planner, a formal function enables him to delegate and so concentrate on the exceptional issues within the total planning process.

3. What can Planning promise and deliver?

3.1. Cohesion, consistency and coherence in a world beset by a multiplicity of short term decisions.

3.2. A map of future alternatives.

3.3. A narrowing of the choice of available options by clearing the wood from the trees.

4. What can Planning not deliver?

4.1. It cannot provide unique solutions to all problems.

4.2. It cannot usurp the Chief Executive's management responsibilities.

5. What are the key issues for planners?

5.1. Organisational goals and objectives.

5.2. Identification of major corporate issues.

5.3. Reconciling the allocation of discretionary corporate resources.

5.4. Forecasting the most likely outcome scenario for future performance.

5.5. Catalysing/questioning/prompting the generation of top management ideas.

5.6. Thinking about the unthinkable.

5.7. Action.

6. So why planning?

6.1. Planning provides a benchmark against which to judge and measure departures from a predicted future.

6.2. Planning helps the organisation to manage surprises.

6.3. Planning acts as a catalyst to provoke change.

7. Finally, Planning has to practise what it preaches and justify its role by example. It has to demonstrate its <u>own</u> ability to develop in response to rapidly changing environments.

ARB

<u>Strategic Aspects of Corporate Planning</u>

This is approached from a particular and personal point of view - that of the Planner supporting his CEO - who must be THE Planner.

The Corporate Planner must think medium to long term. Others in the organisation deal largely with the short term in their day to day work and it is necessary to ensure a balance across Senior Management. The Planner should set his sights on "where we want to be" and then consider how to get there. Progress founded solely on where we are now and the next logical step inevitably leads up the wrong mountain.

Strategy

Approach it by looking at the elements which are felt to comprise a Strategy.

1. Assessments of situation

2. Exposition of OBJECTIVES

3. Resource Availability

4. Production of Business Plans

5. TACTICS - detailed action plans

6. (most important!) Control Procedures

This paper concentrates on the first two.

Assessments

These are required firstly of the internal situation within the company or group;

- look for assessments of the ability of the company to operate and compete at the business level (Where? How? Where not? - and why not in case it can be altered).

- look at Capital Resources: what financial limits (both in terms of existing funds and the ability to raise funds). Personally, I feel that this is often the most limiting feature - it is not always easy to raise extra capital when required and it can inhibit expansion more than staff or system constraints - the latter can in the last resort usually be bought!

Secondly, one needs to make assessments of the external environment. This means consideration of key issues likely to affect the business and the industry in which it operates. These assessments should be carried out in terms of opportunities and threats - and of course some issues can be both, if looked at from the point of view of different elements of the Group business.

These assessments must be carried out business by business for both the business being considered and its relationship with competing businesses.

This particular area is perhaps the closest point of contact between Marketing and Corporate Planning.

In carrying out these assessments one must bear in mind:

(i) Be realistic.

(ii) Acknowledge alternatives and uncertainties.

(iii) Produce an internally consistent scenario of the world in which the business will be operating.

Preferably, one should produce a range of views, but it is eventually necessary to adopt a "most likely" scenario if all members of senior management are to be carried forward - but then it is important to later remember to come back and test the robustness of the strategy derived against other likely scenarios.

There is no magic formula as to how to achieve this. It does depend largely on the company infrastructure within which the Corporate Planner must operate and this perhaps leads to a particularly important point. The planning structure and processes <u>must</u> fit the organisation. There is no necessarily right or wrong way to organise planning but the Corporate Planner most certainly <u>cannot</u> superimpose a structure which is inconsistent with the nature and style of Group Management.

Sometimes the Planner does it. He will produce ideas, etc., and bounce them off others in senior management. This often happens when dealing with new and uncharted areas of potential development.

At other times, one can ask the experts - if it is their subject or topic then they should know! The difficulty here is the problem of shifting their thinking from day-to-day problems to that of looking at an uncertain future.

The reality, of course, is a balance or mixture between these two extremes. And this, perhaps, leads on to the key role of the Planner - he must provide the structures - he is the CATALYST to get it all together.

This can often mean questioning views and ideas right to the very top of the company management pyramid. He is really the only person who can question the CEO and get away with it - rather like the Court Jester and his relationship with the King in days of olde.

Objectives

First, it should be noted that again there is no set process to the derivation of objectives. Ideas emerge in the previous discussions, or are built upon. Very often it comprises the interpretation and clarification of the ideas of the CEO and other members of Senior Management in a formal manner into a consistent set of intentions and objectives.

Objectives must be set in relation to

1. Strategic positioning - what business will we be in, where will they be operating?

2. They should include Qualitative objectives - the style and nature of the business operations.

3. But also, wherever feasible, they should be quantitative. It is important to identify measures of success (or perhaps more importantly sometimes measures of failure!). Objectives should be set with regard to profits, new business targets, total premium income etc. - whatever is relevant or appropriate and practicable for the particular business.

4. But they must also be clear, succinct, and well defined - it is necessary to progress steadily and avoid muddled thinking - back to the success or failure point. The purpose, of course, is not necessarily to punish failure but to identify reasons for failure as the next stage in what is, in effect, an iterative process of moving forward.

JLR

Summary of Discussion

The points arising from the discussion can be summarised under three headings:

Planning Structure

A number of questions on this subject were asked from the floor. These have been compiled into two questions together with the replies from the planners.

What structure do you use for corporate planning, should there be a separate planning department, should there even be a planning department for each division?

It depends on the organisation. The main point to realise is that planning is done by managers not planners. A planner is needed to see that things get done and to question the Chief Executive. This is probably best achieved by a small department outside the normal divisional structure. A straw poll revealed that only half of those present worked for organisations where there was a full time planner or planning department.

How long should people spend in a planning department and should actuaries be involved in planning?

Staff should be involved for at least two years to gain experience but no longer than three years or they become too set in their ways. A spell in Corporate Planning provides a good development role for young people, giving them an overview of the way the company operates. Actuaries are not essential but their training to cope with uncertainty in a financial environment means that they are suited to such a position. A straw poll revealed that about half of those in charge of planning are actuaries.

Modelling and Forecasting

Differing views were expressed as to whether the corporate planner should be responsible for model office work. The corporate planner needs a broad model of the office and, if possible, the competitive environment as well.

There is a need for internal consistency of assumptions between profit testing and model offices. Someone thought that this is best achieved if the model office is built from the profit tests. The planners felt that a less sophisticated model was sufficient.

There is also a theoretical need for consistency between offices in the assumptions made but this is difficult to achieve in practice e.g. it is quite possible that all offices are assuming that their market share will increase. There is, therefore, a need to judge what your competitors are doing and how they are likely to react to a major change in your policy.

It was questioned whether forecasting was credible, particularly when events such as in 1973/74 occur. The main point, however, is that forecasting provides a benchmark from which deviations can be measured. Even such methods as scenario planning can be useful if they open minds to possible problems, enabling quicker reaction times.

Communications

How do planners deal with marketing departments? There can be a blurred division between responsibilities but the basic roles are different and the two need to work together not against each other.

How do planners present forecasts and targets to salesmen? There is a need to distinguish between forecast and target sales. Forecast sales should be a best estimate and influenced by the planners. Target sales are for the sales division to set and explain to their salesmen as motivators.

How much of the corporate plan should be made public? There is no point in having a corporate plan if no one knows what's in it. The extent to which it should be communicated to others is, however, best left with each individual manager.

An example was given of how a corporate plan had enabled an overseas operation in a number of territories to be controlled. Managers were more prepared to accept and implement a plan that they helped to devise.

Perhaps the most interesting question raised during the session was, "Does planning inhibit opportunity and innovation?" The planners thought not, rather it provided a disciplined framework within which ideas can be assessed.

TRAINING OF ACTUARIAL STAFF

Dr S. Haberman, S.P.L. Kennedy & W.W. Truckle

The three speakers made separate presentations: however, for the purposes of these Proceedings they have been combined into two, by S.P.L. Kennedy and Dr. S. Haberman.

1. Theme of the Session

The theme of this session is the co-ordination of the three institutions responsible for education and training; that is,

the Universities,

the Actuarial Education Services,

the Employers

2. My role

I am the past Chairman of the Education Committee and the past Chairman of the Review Committee.

I propose to bring you up to date on the progress made in implementing the recommendations of the Review Committee.

3. Main recommendations of the Review Committee

A) Post-graduate university diploma course

We were faced with a dilemma - whether to introduce the courses this year with a short lead time or to wait until next year.

To wait until next year would have been to lose a whole year's benefit - and to lose the momentum and sense of urgency created by the Review Committee's Report.

Professor Gray at Heriot-Watt and Dr Haberman at City were resolute in their opinion that we should not wait, so we went ahead in the knowledge that some students might already have made their plans and would not wish to change them.

In the event this was the case and a number of employers who offered to sponsor students failed to find students able and willing to go on the courses. However, both courses now have a viable number of students and I am now sure it was right not to wait a year.

B) Actuarial Education Service

The theme of the Review Report was development of a professional education service.

Two major developments have since taken place

a) the Institute and Faculty have agreed to run their own education services: this is really a recognition of a de facto situation. On the face of it, it may look like a step back from mutual co-operation, but I believe it is a step forward, because the large numbers in the Institute do pose problems for the Institute which the Faculty does not have.

I believe co-operation will actually be easier now because we have recognised differences. The J.E.C. continues as a permanent joint committee for liaison on education and we do have joint examinations in statistics.

b) Appointment of full-time tutors - was not seen by the Faculty as necessary for their needs. The Institute has been able to go ahead with appointing full-time staff tutors. The first two (Tony Fletcher and Ian Caldicott) were appointed in April and the next two (Peter Fox and Graham Luffrum) have now been appointed.

So that section of the recommendations is now implemented - and reflected in your subscription!

C) Examinations

The training of students cannot be divorced from the exams they have to sit. So, although this is not the time for discussion of the examinations themselves, I want to say a few words about concepts and progress.

As a result of views expressed at provincial society meetings and finally at the Seminar in Staple Inn in December 1984, the recommendations of the Review Committee were modified.

The salient features of the proposed examinations are now:

Group A examinations will not be extensively altered

1] no major changes are planned for Compound Interest and Life Contingencies although the new textbook by McCutcheon and Scott will be introduced.

2] Statistics will be extended to include the statistics now included in General Insurance and pruned of some of the elementary statistics.

3] Investments will be reduced by eliminating the overlap with B1 on investment principles and by some pruning.

4] Mortality and other Actuarial Statistics will be reduced in content.

Group B examinations will need extensive revision for the introduction of 2-level examinations.

Only one subject will be taken at specialist level (not two as proposed in the Review Report).

I want to say a bit about the concept of the two-level 'B' exams. This is very important.

The specialist level is intended to be a test of the student's detailed knowledge and understanding in his chosen field.

The ordinary level is intended to provide the student with a background knowledge, relevant actuarial expertise and awareness of what he would need to know as a specialist in the field. It will provide him with a stepping stone part way across the river - probably 2/3rds across - at any rate enough for him to see what is needed to get to the far side.

His ability to make the final step across will be demonstrated by success in the specialist level exam.

If he should wish to enter a new field, he will not be expected to sit a further specialist level exam - but he may well wish to take the relevant tuition course to help him.

The overall aim is to reduce the total content of the exams.

The Timetable is not yet fixed, but it seems probable that new 'A' exams will be introduced in 1987 and new 'B' exams in 1988. This is a very big task. The need for speed must be reconciled with the importance of getting it all right. The right syllabus, the right examination standards, the right textbooks, the right courses.

4. Why we need to worry

Finally some figures that should worry you.

a) Pass rate in exams

Table 1 shows the fairly consistent overall pass rates for the A (Intermediate) exams. But note the dramatic fall in pass rates for the B (Final) exams with the introduction of the new syllabus in 1978.

b) Percentage of UK entrants completing exams

In the seventies (under the Skerman Syllabus), as shown in Table 2

20% of entrants passed in 5 years

42% of entrants passed ultimately

In the eighties (under the current syllabus) 15% passed in 5 years. Only 9% passed in 4 years compared with 60% for Graduate Chartered Accountants.

Estimating how many will ultimately pass is like estimating claims with a very long tail! My estimate is that at present little over 30% of our entrants will ever qualify.

In the Review Committee we set a number of broad objectives. The first was to enable the holder of a good honours degree to complete the examinations in 4 years.

We have a long way to go.

SPLK

TABLE 1
UK PASS PERCENTAGES 1969-85

Year	Intermediate (Group A) (May examinations)	Final (Group B)
1969	44	48
1970	47	48
1971	52	51
1972	46	51
1973	41	47
1974	45	36
1975	45	39
1976	39	33
1977	33	29
Average 1969-77	43.6	42.4
1978*	43	32
1979	42	31
1980	38	31
1981	40	28
1982	48	32
1983	38	32
1984	47	27
1985	41	27
Average 1978-85	42.1	30.0

* first year of current syllabus

TABLE 2

PERCENTAGE OF UK ENTRANTS COMPLETING EXAMINATIONS

	1970-7	1979-85	I.C.A. Graduates
Within 3 years	6	3	
Within 4 years	13	7	60
Within 5 years	20	13	
Within 6 years	26	17	
Within 7 years	31	21	
Within 8 years	34	24	
Within 9 years	36	26	
Within 10 years	38	27	
Ultimate	42	31 (estimated)	
Range in ultimate proportion	35-52	28-37	

POSTGRADUATE DIPLOMA IN ACTUARIAL SCIENCE AT THE CITY UNIVERSITY

Because of the general concern about the increasing time to complete the actuarial examinations the Joint Review Committee recommended the establishment of postgraduate diploma courses in Actuarial Science at The City University and Heriot-Watt University. These two courses have now been set up. I propose to describe some of the features of the City University course and also raise some issues for discussion. I understand that the Heriot-Watt course will have a similar format.

Entry Requirements

Students should have a good honours degree in Mathematics, Statistics, Economics or a related subject and should have covered sufficient probability and statistics to merit exemption from subject A1.

Course structure and examinations

The course will run for 3 ten week terms from October to June. Six separate subjects are covered. These are listed in Table 3 below together with the average number of hours per week teaching involved (comprising lectures and tutorials) and the examination arrangements. We see that there are on average 18 contact hours per week programmed. The first four subjects cover the corresponding Institute of Actuaries' syllabuses for subjects A2, A3, A5 and A6 up to exemption standard. The last two subjects are designed both to cover communication skills (attempting to bridge the gap between the 'A' and 'B' subjects) and to cover about 2/3 of the A4 syllabus. The Economics course will include lectures on Economic Theory, Economics of Uncertainty and Industrial Economics.

The examination structure comprises 7 three hour papers, with 5 being sat in June 1986 and 2 in March 1986 to reduce the study burden on the students. The examination papers will be set by the University staff and will be overseen by an External Examiner who will be a member of the Institute's Board of Examiners.

The pass mark for being awarded the Diploma will be 50% averaged over all subjects. The exemption mark will be 60% in individual subjects.

Applicants

In total 34 applicants have been considered to date.

13 applicants have been sponsored by UK life offices - 12 of these have been accepted. Other applicants come from home and abroad and fall into the following categories:

a) still seeking sponsorship

b) privately financed

c) overseas Government support

It is difficult to estimate how many students will appear at the start of the academic year - a reasonable guess at the moment would be somewhere between 17 and 23.

Course Administration

Each lecture course will involve a considerable amount of coursework. The marks will not count towards the award of the Diploma or an exemption, but it will be necessary for students to adhere to a strict timetable of completing the work set. Sponsoring employers will be sent regular (i.e. termly) reports on the students' progress.

As has been pointed out elsewhere, a course like the Diploma has several educational advantages over tuition by correspondence course. These include the availability of direct, personal tuition; the examiners not being divorced from the tutorial role. In addition, it is hoped that the advent of the Diploma course will reduce the burden on Institute 'A' subject tutors and examiners and bring closer links between the Universities' actuarial staff and practising actuaries, with particular implications for research.

Course Review

During and at the end of this first year of the Diploma a review will be carried out in conjunction with the students and the sponsoring employers. Any consequent amendments will be enforced in time for the 1986/7 year.

Other Universities

Once The City University and Heriot-Watt have well-established courses with a total intake of about 60, it would then be the time to consider encouraging other universities to set up

Diploma courses - preferably those universities with a geographical connection with actuarial employers or those who have gained a reputation for producing graduates who go on to take up actuarial careers.

One problem stands as a barrier to this expansion: the widening salary gulf between the actuarial world in general and the academic world. This gulf has become increasingly difficult to bridge and makes the recruitment of able actuarial staff almost impossible.

Other Entry Requirements

If increasing numbers of graduates appear with exemptions from A5 or A4, it should be possible to adapt the course structure to cater for their different backgrounds, so that ultimately there might be a 3 stream entry:

a) those exempt from A1

b) those exempt from A1 and A5

c) those exempt from A1 and A4

Syllabus Changes

The syllabus changes mentioned by Paddy Kennedy and being actively considered by Institute Committees could be accommodated within this course structure. The structure might be a Diploma providing the possibility of 5 not 4 exemptions from the 'A' subjects.

SH

TABLE 3

COURSE AND EXAMINATIONS STRUCTURE

Course		Average no. of hours per week	No. of 3 hour exam papers
A2	Mathematics of Finance & Investment	2½	*1
A3	Life and Other Contingencies	4	2
A5	Statistics (and Risk Theory)	4	2
A6	Actuarial Statistics and Demography	3½	1
	Introduction to Economics	2½	*1
	Introduction to Accounts	1½	
		18	7

* examinations in March 1986 rather than June 1986

Summary of Discussion

The new Institute of Actuaries Education Service is a major step forward in the development of a professional service for the education and training of actuarial staff.

Although the costs for the various components of the service would increase appreciably over the levels of the past few years, it was felt that fees had not increased in real terms over those in operation a quarter of a century ago. It was hoped that the more professional approach would lead to fewer examination failures in future and this in turn would mean that the overall cost to employers should not change very much. Costs in respect of actuarial trainees would now be more in line with those for trainee accountants.

It was appreciated that a few employers preferred a system of rewarding successful students after the event rather than subsidising them all at the start.

The dramatic fall in the percentage of students ultimately qualifying from 40% prior to the 1978 syllabus revision to about 30% since then was a matter for concern. It was thought that it could be a deliberate policy on the part of the examiners to try to keep the pass rate at the same level from year to year, and that the profession would not favour a substantial increase in the pass rate, in that this could imply a drop in standards. However, the only way in which standards would be eased in the new syllabus would be in the two levels for each Group B subject. This was hardly revolutionary as this system was operated for many years some time ago.

It was hoped that under the new syllabus the majority of entrants would qualify within 4 years, as was currently the case with accountants.

There was some disappointment that the post-graduate diploma course at City University would not lead to full exemption from the Group A subjects. The course did cover most of the ground, however, and by the end of the course in June a student would have covered about two-thirds of the A4 course and would have an excellent base for going on to complete Group A at the Institute's September examinations. It has been found from previous experience that students graduating from diploma courses do not perform particularly well in the Group B examinations and City University is now preparing students for Group B type questions.

Some employers felt that students taken on subsequent to completing post-graduate courses often do not perform as well in the office as would be hoped and also often suffer from the loss of a year's practical office work.

Individual counselling of students by employers has led in many cases to improved results in the Group A subjects. The Group B results have been less successful. It was felt that in many cases students did not really know what was required and where they had gone wrong when they failed. More feedback from the examiners would be appreciated.

Although not all professional research needed to be done at university it seemed preferable that some should be, and it was disturbing therefore that salary differentials should make it difficult to obtain the required people to take part in this research. Maybe some way could be found of subsidising the necessary people.

It was felt that the Institute could well be at a disadvantage compared with the Faculty in that the latter did not have an examination on General Insurance, nor an experience requirement for qualification as a Fellow. However it was pointed out that the Faculty were now waiting to see the Institute's new syllabus and at that stage could well introduce their own General Insurance examination.

Doubts were expressed about whether the Certificate in Finance and Investment was a valid qualification for the Institute to be offering. The advent of the proposed Certificate in Actuarial Techniques would make the continuation of the Certificate in Finance and Investment even less desirable.

PROGRAMME

THURSDAY 12 SEPTEMBER

09.00 - 09.30	OPENING	
	President	
09.30 - 11.00	MARKETING: ROLE OF THE INTERMEDIARY	
	Speaker:	B.C. Crittenden
	Chairman:	N.H. Taylor
	Rapporteur:	M.R. Poulding
	MARKETING: DIRECT SALES	
	Speaker:	G. Westall
	Chairman:	M.R. Granville
	Rapporteur:	C.A. Evers
	MARKETING: MASS MARKETING	
	Speakers:	A.J. Cadge and S. Shah
	Chairman:	M. Christophers
	Rapporteur:	J.W.P. Earle
	EXPENSE CONTROL AND BUDGETS	
	Speakers:	M. MacFarlane FCA and A. Turner ACMA
	Chairman:	A.G. O'Leary
	Rapporteur:	J.D. Hunter

11.30 - 13.00	PROFIT TESTING: ADVANCES IN METHODS AND DEVELOPMENTS FOR TRADITIONAL BUSINESS	
	Speakers:	R.P. Burrows and J. Goford
	Chairman:	P.J. Turvey
	Rapporteur:	G.J. Allan
	INVESTMENT: LONG TERM OBJECTIVES & SHORT TERM PERFORMANCE	
	Speaker:	A.J. Frost
	Chairman:	K.E. Ayers
	Rapporteur:	D. Sheraton
	SEGMENTATION OF THE LIFE FUND	
	Speakers:	G.D. Clay and D.W. Hanson
	Chairman:	J.A. Geddes
	Rapporteur:	N.B. Masters
14.00 - 15.30	REASONABLE EXPECTATIONS: BONUS & GROWTH ILLUSTRATIONS	
	Speakers:	C.S.S. Lyon and F.R. Wales
	Chairman:	E.B.O. Sherlock
	Rapporteur:	D.B. Sammons
16.00 - 17.15	VALUATION REQUIREMENTS: BASES & METHODS	
	Speakers:	C.J. Brocksom, C.L. Cannon and R.J. Squires
	Chairman:	P.E. Felton
	Rapporteur:	D.M. Riddington

SOLVENCY MARGINS

Speakers:	M.B. Brown and P.H. Hinton
Chairman:	S. Benjamin
Rapporteur:	H.E. Clarke

SURRENDERS, ALTERATIONS, LAPSES

Speakers:	A.M. Burnett-Brown, Dr S. Haberman and N.H. Taylor
Chairman:	C.G. Thomson FFA
Rapporteur:	J.W. Osborne

17.30 - 18.30 VALUATION REQUIREMENTS: RETURNS

Speakers:	M.A. Pickford and S. Thompson
Chairman:	P.H. Grace FFA
Rapporteur:	D.W. Debenham

PRICING TERM ASSURANCE PRODUCTS

Speaker:	D.J. Le Grys
Chairman:	D.E. Purchase
Rapporteur:	R. Rae

MORTALITY

Speaker:	P.J.L. O'Keeffe
Chairman:	R.F. Hubbard
Rapporteur:	N.S. Parrack

FRIDAY 13 SEPTEMBER

09.30 - 11.00	PRODUCT DEVELOPMENT: GROUP PENSIONS	
	Speaker:	P.R. Hogley
	Chairman:	B.W.T. Dawson
	Rapporteur:	G.V.A. Budd
	PRODUCT DEVELOPMENT: LIFE	
	Speaker:	P.W. Wright
	Chairman:	V.G. West
	Rapporteur:	R.C. Wilkinson
	PRODUCT DEVELOPMENT: PHI	
	Speakers:	E.A. Hertzman and R.J. Sansom
	Chairman:	M.B. Brown
	Rapporteur:	B. Dejean
	PERSONAL COMPUTING	
	Speaker:	N.F.C. De Rivaz
	Chairman & Rapporteur:	A. Saunders
	TAXATION	
	Speakers:	J.R. Coomber and C.B. Russell FFA
	Chairman:	J.H. Webb
	Rapporteur:	R.B. Davison

11.30 - 13.00	TRAINING OF ACTUARIAL STAFF		
	Speakers:	Dr S. Haberman, S.P.L. Kennedy and W.W. Truckle
	Chairman:	H.J. Jarvis
	Rapporteur:	A.J. Fletcher
	PRODUCT DEVELOPMENT: INDIVIDUAL PENSION	
	Speaker:	O. Thoresen FFA
	Chairman:	R.E. Brimblecombe
	Rapporteur:	D.J. Fenna
14.00 - 16.00	CORPORATE PLANNING	
	Speakers:	A.R. Bland, K.H. McBrien and J.L. Riley
	Chairman:	K.H. McBrien
	Rapporteur:	R.E. Lee
	ACCOUNTS AND ACCOUNTANTS	
	Speakers:	M.J. Burns and J.D.F. Dickson FCA
	Chairman:	C.S.S. Lyon
	Rapporteur:	S.A. Carne
	PRODUCT DEVELOPMENT: A TRANSATLANTIC VIEW	
	Speaker:	P.S. Carroll
	Chairman:	A.E.G. Round
	Rapporteur:	R. Frankland

ORGANISING COMMITTEE

E.A. Johnston, CB - Chairman

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)Honorary Secretaries
N.H. Taylor)

P.E. Felton

P.H. Hinton

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