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THE DISSOLUTION OF A PENSION FUND

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> Consider what you think justice requires, and decide accordingly. But never give your reasons; for your judgement will probably be right, but your reasons will certainly be wrong.
>
> William Murray, Earl of Mansfield 1705–93

PART I. INTRODUCTION

A PENSION fund is created for what it will do while in full operation—not for what will emerge when it is wound up nor for what it might provide for members during their employment. Nevertheless, the dissolution provisions are important: they may reflect the philosophy on which, or the limitations within which, the fund is financed but it is of paramount importance that they should make allowance for the considerable problems that can and do arise on a dissolution actually taking place.

2. The Protection of Pension Rights Bill which was read in the House of Commons in the spring of 1970 but not enacted sought to turn the hope of a benefit from a pension scheme into a statutory right and, inevitably, revealed the difficulty of trying to define the expectation so that it might be conferred as a right. It is for those who appreciate the difficulties to bring them to light lest legislators, taking it upon themselves to create rights where none previously existed, also create confusion which will only be resolved at the expense of a lot of time, money and exacerbated industrial relations. The subject of 'preservation of pension rights' of a member leaving a continuing fund has been discussed by the profession from time to time but there is no recorded discussion of the member's 'rights' on leaving a discontinuing fund, whether or not he changes his employment at the same time although this will doubtless become the subject of legislation in its turn. In any case dissolution provisions of trust deeds and rules usually leave much to be desired and it is time to give the subject an airing.

The Background

3. No actuary who has had to advise on pension fund matters during recent years could regard the dissolution of a pension fund as a theoretical possibility of little practical importance. Company takeovers and amalgamations of companies and the tendency to improve and rationalize pension arrangements have all caused pension funds to be wound up and will no doubt continue to do so. Normally they will be replaced by others, but not necessarily. Changes in Social Security benefits have caused pension funds to be terminated with or without replacement. Sometimes an employer goes into liquidation and the

employees' pension fund dissolution rights may be all that they can salvage from the ruins of their expectations. It will be recalled that when the *News Chronicle* was acquired by Associated Newspapers it was found that the employees' retirement benefits were substantially unfunded. An attempt made by the management to provide for the prospective pensions of the employees out of the acquisition price was frustrated by some of the shareholders of *News Chronicle* who exacted their legal rights. There can be no guarantee that a long-term promise of benefits will be fulfilled except to the extent there are assets to back it and these are appropriately applied.

The Bargain between Employer and Employee implied by a Pension Fund

4. The reasons for establishing pension schemes and funding their liabilities in advance of their having to be met are too well known to need further discussion but the process has implications which are relevant to the dissolution procedure. Effectively the employer enters into an agreement with his employee that, in return for a given contribution or perhaps no contribution, the employee will be paid a retirement income possibly of unknown amount which may, however, bear some specific relationship to salary and service, sometimes after taking account of whatever State benefits may then become payable. The pension ultimately payable may be a higher proportion of the accumulated contributions paid by some members than it is in other cases, but this may be the price that is paid for the guaranteed relationship between pre- and post-retirement income. To make the deal palatable the employee's prospective retirement benefit is invariably greater than he could provide for himself with the same outlay as that which he himself is required to make. In the case of the final salary/service type of scheme the bargain is provision of a guaranteed relationship between post-retirement income and some part of pre-retirement income in exchange for a fixed proportion of pre-retirement income, subject possibly to the employer being able to discontinue the bargain if circumstances prevent him from fulfilling his part. The establishment of a fund gives the employees security that the bargain will be honoured to the extent that the accumulated fund can be applied for their benefit. There is not necessarily, and indeed only rarely, a pre-established relationship between the contributions of any employee and the employer; the relationship usually depends upon the cost of benefits on the one hand and the employee's contributions on the other. On a winding-up the relationship between the employee's contributions and the share of the fund applied for his benefit should be that which results from an attempt to ensure that, so far as possible, the initial bargain between the employer and the employee is not frustrated by the winding up of the fund. It will be seen that this concept contains within it the seeds of dissension between lawyers and actuaries unless care is taken with the drafting of the dissolution rule.

PART II. THE FACTORS RELEVANT TO THE METHOD OF DETERMINING DISSOLUTION SHARES

The Dissolution Rule

5. The accumulation of assets from which to finance pension benefits can be of little reassurance to the beneficiaries and prospective beneficiaries unless they are held by trustees for specific purposes laid down by the trusts. In order to be able to determine the trusts the trustees must have power to do so. There must be a clause of the trust deed or a rule which prescribes the circumstances in which dissolution may or must take place and a rule which prescribes what the rights of the members and beneficiaries will be in that event. Such a rule will be written when the fund is established and the circumstances attendant will almost certainly differ from those in which the fund dissolves.

6. It could happen that a fund might, for compelling financial reasons, be established with a minimal rate of contribution. The employer may regard termination of contributions and distribution of the accumulated assets as a very real possibility and may have very strong views on the different degrees of priority which he would wish to accord to the members and beneficiaries. He may in consequence adopt a dissolution rule which is so rigid as to be completely inappropriate if, when the fund ultimately winds up, it has a superfluity of assets rather than a shortfall.

7. Experience suggests that most dissolution rules drafted years in advance of the dissolution will either be so vague as to give little assurance to the members and beneficiaries that their respective benefits will bear any particular relationship to each other, or so rigid as to be embarrassingly constrictive. There is only one point upon which the trust deeds of pension funds are almost unanimous and that is that pensions in course of payment or contingently payable as a result of surrenders of benefit made by members who are themselves in receipt of benefits, should be a prior charge upon the available assets. Subject to that, the dissolution rules are normally vague. Beyond stipulating the priorities of the various classes of participant and that the amounts of the annuities purchased must not exceed Inland Revenue limits, which, unless there is power to pay surplus to the employer, implies a degree of successive approximation to the final answer which is too horrible to contemplate, the dissolution rule is seldom helpful to the actuary. It may require a division of assets proportionate to, say, the members' 'actuarial interests' in the fund; this will not necessarily mean the same thing to all actuaries and even if it were to do so there is ample scope for different actuaries, acting in good faith, to place different relative values upon the 'actuarial interests' of the participants in a dissolving fund.

8. If a benefit is insured, on anything other than a controlled funding basis, actuarial interest might, at first sight, appear to be the sum of money or the value of the benefit which would be paid by the insurer in respect of that member if the contract were to be terminated. Even so, this might be thought to bear

hardly on some members if, for the sake of the administrative convenience of the insurer, the premiums required to meet a partially funded back-service liability were applied first for the benefit of the members nearest retirement age. Such a hypothecation of assets to individuals need by no means be thought of as sacrosanct in the circumstances of a dissolution however appropriate or expedient it may have been while the fund continued. Why should the oldest members have fully-funded benefits and the younger members completely unfunded benefits in respect of service before the scheme was established or before an additional liability arising on a reconstruction had been fully met? Conversely, if the policies participate in the insurer's profits, why should the youngest members, who would participate for the longest period, get the benefit? If the scheme is financed on a controlled funding basis, the situation is analogous to that which obtains in a privately invested scheme because the available moneys can be redistributed between the members in accordance with any principles which do not conflict with the terms of the policy or the trust deed and rules. In passing it should be noted that the terms of the policy should match the trust deed and rules, otherwise the trustees may be liable for not properly arranging for the financing of the benefits.

9. Ideally, the winding-up rule should provide for

(i) the relative priorities of different classes of members,
(ii) the nature of the members' rights,
(iii) the determination of shares in the assets,
(iv) the application of shares so as to secure the members' rights.

A draft of such a rule is shown in Appendix V but the reader is urged to defer consideration of it.

The Power of Alteration

10. If the winding-up rule is not helpful in the circumstances in which a fund winds up, the sensible thing to do is to change it. The powers of alteration should be wide enough for this to be done and the actuary should ensure that the legal advisers who are responsible for the drafting when a scheme is established are well informed on this point. In existing schemes the alteration power may be inadequate. It may, for example, prescribe that no alteration shall be made if it prejudices the rights of any member; if a fixed amount of assets is distributed between a body of members, it is clearly not possible to alter the method of apportionment without prejudicing some of them. If, however, the existing rule of a 'no prejudice' fund is so vague that no member could successfully demonstrate that an alteration caused a diminution of his benefit, the obstacle is removed—provided the trusts are not in consequence held to be void for uncertainty! Pending achievement of better winding-up rules, we have to take them as they are and interpret them the best way we can.

The Powers and Responsibilities of the Actuary

11. Before proceeding to the consideration of the things that may be done on a winding up, we should fortify ourselves with a consideration of the legal position of the actuary who advises on a winding up. His responsibilities are well defined in Basten (*J.I.A.* **96**, 136–7) which drew attention to the case *in re George Newnes Group Pension Fund*,* heard in the Chancery Division of the High Court of Justice, and which quoted the learned judge's comments in regard to the responsibility of the actuary. The judge also said, in another passage referring specifically to the facts of the case before him, that the method of calculation of dissolution rights rested in the discretion of the actuary, and he went on:

> Where a discretion of this kind is reposed in an expert, the burden rests on any party who criticises the decision of the expert to show that the expert has acted fraudulently, or with some improper motivation, or that he has been guilty of a mistake of a substantial character, or has materially misdirected himself.

Subject to those conditions, the position of the actuary advising on a dissolution is virtually unassailable and his responsibilities are correspondingly heavy.

12. It is not inconceivable that a dissolution may form the subject of a lawsuit if any of the interested parties considers that he has been unfairly treated. The paper by Basten will give some idea of the legal position but not perhaps of the different approach of lawyers and actuaries to the same problem. The lawyer understands the law and can quote the authorities, if any: he does not readily appreciate the technicalities even if he understands them; he is concerned to secure a sensible and equitable solution. The actuary on the other hand would happily disregard all that the lawyer holds dear if it enabled him to secure what, in the circumstances, appeared to him to be a sensible and equitable solution. Sensible and equitable to the lawyer implies the satisfaction of legally expressed rights however inappropriate these may be in the context of changed circumstances. To him the dissolution is a circumstance in its own right. To the actuary a dissolution may be no more than a technicality standing in the way of an intrinsically desirable reconstruction of a continuing and changing provision. Conflict may well arise if the wording of a trust deed or the rules of a fund has a legal significance which is not perceived by the actuary. If his approach to the problem is likely to be challenged he would be well advised to take counsel's opinion before advising his client.

13. The form of the report which the actuary finally publishes will depend upon whether it is his responsibility under the trust deed of the dissolving fund to prescribe the rights of the beneficiaries and prospective beneficiaries or that of the trustees after they have sought his advice. If the responsibility is his own he should not attempt to justify his award in advance of criticism. The more he seeks to do so the greater will be the risk that he will stimulate objections and the greater will be the difficulty of a speedy acceptance of the award. Once he has issued his certificate there should be no room for argument. If,

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however, the responsibility is that of the trustees, he should by all means explain his reasons for adopting his approach so that they may, as reasonable laymen acting on behalf of the interested parties, decide whether they are justified in endorsing what are no more than the actuary's proposals. In passing, it should be noted that once any considerations have been brought to the notice of the trustees, however inconvenient they may be, the trustees ignore them at their peril, unless they have good reason for doing so, as those responsible for looking after the interests of those who are concerned in the fund.

The Volume of Assets

14. Provided that there are always funds available to meet any excess of outgo over income, the extent of a pension fund's assets is of significance to the members only in the event of its dissolution. A member's right on a dissolution to a share of the fund's assets carries with it no legal obligation to accumulate any particular volume—though there may be a strong moral one. Few people would happily acquiesce in the accumulation of less than the total of the employees' own contributions plus the cost of providing pensions in course of payment; most would look for a comfortingly larger accumulation. Widows' funds are a possible exception, though, where the risk runs side by side with the payment of the contributions from which the cost has to be met.

The Rate of Funding

15. The volume of assets is normally the consequence of the contribution rate and it is rare for an employer deliberately to adopt a particular contribution rate with a view to achieving a particular relationship between the volume of assets at any time and the 'accrued' liabilities. It is doubtful if the employer has more than the haziest notion what the 'accrued' liabilities are, and if he does it is probably wrong. Whilst in an insured career-average type of scheme an employer might adopt single premium funding of the pension accrual from each year's service, he most probably would do so because it would have been represented to him, without elaboration, as the lowest 'sound' level of initial outlay. It is doubtful whether many employers deliberately set out to pay such a contribution level as would enable them to provide 'accrued' benefits in the event of a dissolution of their funds. The problem is more usually an uneasy balance between the desirability that the long-term commitments should be financed from current production and the need for economy and stability in the contribution rate in relation to payroll. Except during the early years of a fund's existence, or after a benefit improvement, the consequence will normally be a steady accumulation of assets extending beyond the cost of 'accrued' pension rights.

16. A 'sound' level of outlay is one which will ultimately enable a fund to meet the cost of its 'accrued' liabilities (whatever they may be) but views might vary as to how long a period should elapse before it does so. It is of little practical help to say that the period over which the liabilities are funded should expire before the liabilities have to be met: the uncertainties of present-day life are such that it is very difficult to say when that is likely to be. Even in the case of the

most prosperous of industrial giants, a particular subsidiary may be sold and the pension fund, so far as it relates to the subsidiary's employees, will effectively have to be wound up, even if only to be replaced.

17. It would be most undesirable if a statutory requirement to cover 'accrued' pensions over a prescribed period of years were to give pause to an employer contemplating an improvement of the benefit scales of an existing scheme, or the establishment of a new one offering benefits for service already rendered as well as for future service. On the other hand, the cost of unit benefits rises as age increases and a basis of funding which no more than covers liabilities as they accrue has a smaller prospect of indefinite continuance than a more rapid one; the annual outlay as a percentage of payroll would tend to grow, more particularly if the scheme provided benefits related to some form of final salary or if it were to become closed to new entrants, another possibility which should not be overlooked.

18. Clearly, if when a scheme is established rights are granted in respect of previously rendered service, the cost of thereupon funding 'accrued' liabilities in full by a lump sum is almost certain to be prohibitive. It might, at first sight, appear attractive to separate the liabilities for service already rendered from the rest of the liabilities and adopt a different funding rate for each. Except in the case of a scheme untrammelled by the history of its predecessors, however, the division might well be a matter of considerable complexity or even uncertainty likely to absorb much effort for very little practical advantage. One has only to consider the case of schemes under which members may be given a choice of benefits under different scales according to their memberships of previous schemes to see the practical difficulties in the way of defining the two categories of liability. One concludes that the formulation of an objective statutory definition of a 'sound' rate of funding is unlikely and would, in any case, be unlikely to serve any useful purpose. The most that could be hoped for would be a statutory requirement that the employer's outlay each year should tend to raise the ratio of the value of the assets to the value of the expected benefits for service already rendered. It would be necessary to rely upon the opinion of an actuary that this was so in much the same way as the opinion of an accountant is relied upon that a company's accounts are drawn up in such a way as to give a true and fair view of its affairs. There would also have to be provision for dealing satisfactorily with a situation when the ratio actually dropped during an intervaluation period.

The Member's Benefit on Withdrawal

19. Although it is reasonable enough for an employer to hold out to his employees an expectation of benefits notwithstanding that they are not then fully funded, it cannot be assumed that nothing will ever interrupt the progress of a fund towards whatever may, in the context of the fund, be regarded as a fully-funded condition. This may be regarded as a matter of concern to its members. Indeed a fund's continuance, in whole or in part, cannot be taken for

granted, and a member could not be considered unreasonable if he wished to know the extent to which the expected benefits could be provided if, for any reason, the fund, or that part of it in which he was interested, were to be wound up, or if the employer's contributions were to cease for any reason. Subject to an adequacy of assets, a member might expect to be provided with the most valuable benefit he could have taken had he left the employer's service immediately prior to the interruption of the normal progress of the pension fund. It is nevertheless unlikely that withdrawal benefits would, on their own, prove a satisfactory standard for apportioning the assets of a pension fund on winding-up.

20. If the withdrawal benefit were limited to a refund of the member's own accumulated contributions, it is unlikely that there would be many who would be disposed to agree that such a basis was an adequate measure of the member's rights in the fund on its termination. A better basis for a dissolution might be the deferred pension or the transfer value to which the member would have been entitled on withdrawal at the dissolution date but for a requirement that he should have rendered a specified minimum period of service or have attained a certain minimum age. It should nevertheless be regarded as axiomatic that, under no circumstances, should an employee receive less from a pension fund than his own contributions—unless, of course, the assets are inadequate to permit even this. A minimum benefit of a refund of contributions is an even more fundamental right on the winding up of a fund than that priority should be given to pensioners, which is almost invariably taken for granted and which, if the fund dissolves before accrued liabilities have been funded, is grossly unfair to active members. This is just one example of the sort of point to be considered when the dissolution clause is being drafted—such a priority need not necessarily be given but at least the express provisions of the clause should not be inconsistent with it.

21. Notwithstanding that the prescribed benefits on immediate termination of service, i.e. the withdrawal and early retirement benefits, and the benefits in course of payment may not form a satisfactory basis for the apportionment of a fund it might nevertheless be thought reassuring to members if the ratio of assets to the value of such benefits were calculated and published at say three- or five-yearly intervals. There would be difficulties and dangers in doing so. On what basis should the ratio be calculated? Might not the members press for a winding up if for any reason the realizable value of the accumulated fund vastly exceeded the value of such benefits? Would not the expense of making the calculation be an irritating burden? To meet such difficulties the published statement might be by the actuary and take the form:

> In my opinion the assets of the fund at the valuation date would suffice to cover at least (25%, 50%, 75% or 100%) of the value of the benefits then in course of payment or which would then have become payable under the Rules had all the active members thereupon left the service of the employer.

22. Once criteria, statutory or otherwise, have been adopted and published

as an indication of the adequacy of the funding of a pension fund, it must be anticipated that, in the event of a dissolution, members will expect assets to be shared out in a consistent manner. Nevertheless, according to the circumstances in which the dissolution takes place, there is a wide variety of ways in which the available assets may be apportioned.

The Member's Interest in the Fund

23. It is implicit in the foregoing that a pension fund may quite properly be set up to provide benefits which it could not meet if all the members were to resign *en bloc*, provided the contributions are such that the fund's vulnerability to such a mass withdrawal is reducing and provided the members are from time to time given some indication of the extent of the fund's vulnerability. When an employee's service comes to an end, the amount of benefit payable to him from his employer's pension fund ought not to depend upon anyone using judgment and, provided a pension fund represents an honest attempt to provide a scale of benefits subject to the availability of assets, there is no need to relate the amount of any benefit directly to the rate of funding of the liabilities. A pension fund is an instrument of company policy and any instrument which is uncertain in its operation is apt to be unsatisfactory. For this reason the rules should define the normal benefit scales in such a way that, given the relevant facts of the employee's career, a numerate layman could calculate their amounts. Membership of a pension fund, if offered, is a part of the employee's conditions of service and, whether or not he is asked to pay contributions to a fund, he ought to be in no doubt about the method by which the minimum amount of his benefit will be calculated under all the circumstances in which a benefit might become payable. Membership of a pension fund is an inducement to enter or remain in an employer's service and the employee ought to know what it means. It is recognized that, in certain circumstances, such as early retirement, the cost of a given amount of benefit might be very much greater than if retirement took place at the normal age and, in order that the employer should not undertake a greater burden than he wishes, it is reasonable that there should in such circumstances be a reduction of the normal scale of benefit. The scale should, however, be published, and the amount of benefit calculable, rather than be of an amount equivalent to, say, the member's 'actuarial interest' in the fund, or something equally shrouded in obscurity. If, in a particular case, an employer likes to be more generous than the conditions of employment require him to be, that is his affair and, provided the cost of his generosity is not at the expense of other employees' contractual expectations, there is no more reason to prevent him than there is to prevent him paying a higher salary to one employee than to another.

Back Service Liability

24. Before proceeding further it is necessary to define the concept of the liability in respect of service already rendered. By this is meant such part of a

benefit or benefits prospectively payable, on the assumption that the fund continues in full with unchanged rules, as the member would not have become entitled to had he not rendered the service already rendered. In some cases, such as where pension is unrelated to service for example, this concept may require modification before it is useful but it is sufficient for the purpose of the following discussion and present elaboration would not be helpful.

25. Suppose the employer pays a global contribution rate expressed as a percentage of the relevant payroll. This may be such that in the opinion of the actuary its continuance would cause either a surplus or a deficiency so that, in default of unforeseen changes in the benefit scales or experience, a change in the employer's contribution will sooner or later have to be made. The implication is that if the contribution rate is too high the employer has already met a part of his liability in respect of service yet to be rendered—however that be defined. Similarly, if the contribution rate is too low, he will not have made adequate provision for his share of the liability for service already rendered. How then should the excess or shortfall, as the case may be, be apportioned between the members if the fund has to wind up? If there is a shortfall, should the liability for the most remote calendar years be met in full leaving that for the most recent years uncovered, a course which is palpably unfair to the most recent entrants to service? Or should the first years of service of each member be covered leaving the later ones uncovered—equally unfair to the longest serving members? Or, having provided a refund of the members' own contributions, should the employer's liability for each year of service already rendered be met to an equal proportionate extent? This appears to be a reasonable compromise; effectively the employer pays his pension fund members x pence in the £ of that part of the liability he undertook to provide.

26. A fourth possibility presents itself. This is that the assets should be shared in proportion to the contributions paid by each member. Though attractive at first sight, and possibly appropriate in some special circumstances, it is apt to be inconsistent with the implied bargain between the member and the employer that payment of contributions gives a right to certain benefits on termination of service. Of course there can be funds of increasingly uncommon types in which the contribution scale is devised on such a basis as to result in every employee paying the same proportion of the cost of his prospective benefits. In this case apportionment by reference to past contributions accumulated with interest might not be unreasonable; it would, in fact, lead to a similar result if the fund paid to each member the same proportion of the liability undertaken by the employer.

Excess of Assets over Back Service Liability

27. Suppose the accumulated assets are more than sufficient to provide the prospective benefits in respect of service already rendered. What should be done with the surplus? If the view is held that this is an advance funding of future service liabilities, should it be used to provide the employer's share of liability

for each future year of service in turn, starting with the year after the dissolution? To do so would imply that if the scheme had continued instead of dissolving, the employer would have suspended payment of contributions; that might not be an unrealistic assumption in the context of a dissolution. Alternatively, the surplus might be apportioned *pro rata* to the employer's share of all the future service liabilities for the participating members. The justification for this course would be that the employer considered himself as having just as big a proportionate obligation in respect of future service to the younger members as to the older members, so that if the scheme had continued he would have reduced his contributions rather than suspended them. If the surplus was more than sufficient to provide the employer's share of the future service liability, the excess might be apportioned *pro rata* to the value of the employees' future contributions, the implication being that if the scheme had continued the employees' contributions would have been reduced. This method has the effect of increasing the relative share of the youngest members and if the fund is being succeeded by a new one this may avoid a duplication of contributions by the employer.

28. The method of apportionment outlined in §§ 25 and 27 is as follows. First consider the case when pensioners have priority in a winding up but no share in any surplus assets:

(i) From the realized value of the assets set aside the cost of providing for the pensioners;
(ii) From the balance deduct the past contributions paid by the active members;
(iii) From the value of the past service liabilities of the active members deduct their past contributions;
(iv) Take the ratio of (ii) to (iii) but limit it to a maximum of $1 = R_1$. If the limitation operates proceed:
(v) Deduct (iii) from (ii);
(vi) From the value of future service liabilities deduct the value of the members' future contributions;
(vii) Take the ratio of (v) to (vi) $= R_2$.

The active members' share of the assets is then:

> Members' past contributions $+R_1$ (Value of past service liabilities − members' past contributions) $+R_2$ (Value of future service liabilities − value of members' future contributions).

29. If pensioners are not a prior charge, the procedure becomes more complicated. It is an underlying principle that the member's own contributions are the minimum that may be applied for his benefit, and that any surplus or deficiency is apportioned primarily by reference to the balance of the liabilities. It is hard to see how this is to be done in the case of the pensions in the course of payment except on arbitrary lines. It would be possible to regard that proportion of the value of the pension in course of payment, which the pensioner's accumu-

lated contributions at the time of retirement bore to the value of his pension at that time as being the residue of the contributions he paid and proceed as for the active members. There is, however, no such thing as a future service liability for a pensioner. Consequently, although the method is complicated, it will not be possible to apportion any part of a surplus to a pensioner by this method. Some employers might take the line that there is no reason why the pensioners should participate in any part of the surplus remaining after past service liabilities have been met in full; it may be that the pensioner would not have participated in any surplus had the fund continued in existence. It nevertheless seems harsh that if pensioners are liable to have their pensions cut in the event of the assets available on dissolution being inadequate to cover the past service liabilities, they should be unable to share in any surplus if the assets are more than sufficient to provide the past service benefits. This leads to the conclusion that if pensioners rank equally with other members there is no merit in apportioning surplus in relation to the future service liabilities minus the employees' future contributions. If this line is taken, it is hard to defend the complication of first setting aside out of the realized asset value the past contributions of the members and that proportion of the pensioner's liability which relates to the contributions he had himself paid prior to his retirement; we may as well go straight to a proportionate increase of the pensions in course of payment, and of the value of the past service accruals of the active members.

30. It may be inquired whether any regard should be paid to the sources of surplus when adjusting the basic right to the benefit in respect of service already rendered. It is implicit in § 27 that, under the circumstances there envisaged, the surplus has arisen because the employer's contributions are too high. It may be, however, that the employer would have no prior right to any surplus which might have emerged if the fund had continued. If so it may be asked what would have happened to the surplus under those circumstances. It is unlikely that the answer will be more than a matter of opinion. Nevertheless, an actuary might well regard the likely destination of surplus which might have arisen had the fund continued as a factor which would influence his decision as to how to apply any surplus which there might be on a winding up after providing for the accrued benefits. It might be thought that the source of the surplus might have some relevance to its destination. If, however, a pension fund is regarded as an advantageous method of implementing a part of an employer's policy towards his employees, it is only in relation to funds where a predetermined standard of equity exists that the source of surplus is likely to be relevant to its disposal. Funds established for groups of non-associated employers may be a case in point and this matter is returned to in §§ 42 to 46. Even there, however, the standard of equity may well be formed with the respective interests of the employers in mind rather than the respective interests of the members.

The Circumstances Surrounding Dissolution

31. If the closure of the fund was due to the collapse of the business and the

discharge of the employees, a different view might be taken as to the proper method of distributing surplus assets after providing in full for the liabilities in respect of service actually rendered from that which would be appropriate if the winding-up was in connexion with a reconstruction which would protect the members to the full extent of their prospective rights had the fund continued. In the event of a business collapse the employer would have no liabilities in respect of the future service liabilities because they would be non-existent. If, however, the business continued, the fund being replaced, the employer's future service liabilities would continue. In the former event, it might well be a matter of indifference to him if the surplus were shared out in relation to past service liabilities, thus giving the greatest uplift of prospective pension to the longest-serving employees with the highest salaries, although this might cause anomalies as between members on the point of retirement and those who had just done so, if pensioners do not share in surplus on a dissolution. In the event of a reconstruction however, it would be in the employer's interests if the surplus were applied towards a reduction of his future service liabilities—the way in which it would have been applied had the dissolution not taken place.

32. If the basis for the determination of the member's dissolution rights were taken as the difference between the value of the prospective liabilities of the fund towards him and the value of the future contributions receivable by the fund as a result of his membership, it would be necessary to decide how much of a global contribution payable by the employer was needed for the particular member. If this were not so, there would be the fundamental defect that the amount of the employee's dissolution right would be affected by an allowance made for contributions which his own continuing membership would not have necessitated. This is illustrated by the possibility that without such an apportionment the reserve in respect of a member admitted immediately before the dissolution might be other than zero. If, however, we regard the accumulated fund as being in part attributable to members' contributions and first set aside that part appropriate to each member and proceed as indicated in §§ 25 and 27, there will be no necessity to apportion the employer's future global contribution between the members although, a decision having been taken as to the correct method of apportioning the excess of assets over the liabilities arising from service already rendered, such an apportionment could be made. On the definition of liability arising from service already rendered which is contained in § 24, it is of course necessary to determine the liabilities attributable to service which would have been rendered after the date of dissolution before the § 28 procedure which seeks first to satisfy accrued expectations can be carried out.

PART III. THE FACTORS RELEVANT TO THE CHOICE OF ACTUARIAL BASES

The Need for the Best Estimate

33. If a routine valuation is made of a continuing fund there is a wide variety

of actuarial bases which might be adopted and many of these will produce similar valuation surpluses or deficiencies. The important result of the valuation, however, is not the disclosure of a surplus or deficiency, but the disclosure of a range of available courses of action increasing or reducing benefits or contributions to bring the assets into balance with the liabilities. There is only one basis which will produce the right range and that is the basis which is the closest possible approximation to what will actually happen in future to all of the factors which will determine the future income and outgo of the fund. Departures from that which is, in the judgment of the actuary, the best estimate may be made only as a matter of deliberate policy and not because the net effect on the monetary surplus or deficiency is negligible. Two different bases may produce the same monetary surplus but of the possible consequential contribution abatements only one may be valid. The principle of adherence to the best estimate is particularly relevant in the case of apportionments and dissolutions because there will be no opportunity for rectifying injustices which may be caused by the adoption of an unrealistic basis. For example, two bases which involve different allowances for future investment yield, salary progression and withdrawal may produce the same total value of liability but the relative values placed on the liabilities in respect of young employees, old employees and pensioners will be different. It is therefore necessary to adopt that set of valuation assumptions which we believe will conform most closely to the future course of events. The difficulties are considerable as is the scope for honest difference of opinion.

Asset Value and Market Yield

34. There are, nevertheless, at least two factors which are relevant to a dissolution and for which precise allowance can be made in the determination of the members' shares. These are (i) the realizable value of the assets available for distribution, and (ii) the yield obtainable on the sums apportioned to each member provided they are invested in non-profit annuity bonds, given an assumption as to the mortality rates of the members and pensioners, because divergences of events from the allowances made by the insurer are of no consequence. It would be wrong to assume a rate of interest of 5% in determining relative shares if it was known that they could be invested in annuity contracts to yield 7½% per annum; the effect of doing so would be deliberately to favour the young members at the expense of the old ones.

Inflation

35. If it is conceded that the best possible estimates of future interest and mortality for the purpose of the calculations are those rates which an insurer is effectively prepared to underwrite, whatever yield he will himself earn and whatever mortality the members will experience, an attempt should be made to allow for the effects of the conditions which would probably give rise to those rates when forming estimates of other factors for which allowance has to be

made. Suppose an insurer were to quote rates for deferred annuities at all ages on a basis which yielded a rate of interest to the purchaser of 8% per annum over the whole term. It would be a fair supposition that the money market was anticipating a continuance of inflationary conditions and there would need to be good reasons for not allowing for a higher degree of salary escalation—assuming it was appropriate in the circumstances of the particular fund to allow for future salary increases—than if the obtainable yield was only 7%, say. Opinions might differ as to the allowance which should be made but, if the market implicitly assumes a continuance of inflationary conditions, the actuary might be accused of capriciousness if he did not make any allowance at all. Some insurers will, at the present time, quote deferred annuity rates on the basis of a rate of interest which decreases as the term of deferment increases. If this is allowed for, a decreasing rate of inflation should also be assumed; logically, this could simplify the calculation of shares considerably. Whilst the convenience of the actuary is not a factor which should determine the shares of the members, it may be to the advantage of the members if he can save cost and time without doing violence to his own conscience or their respective interests.

Withdrawal

36. Opinions may differ whether or not any allowance at all should be made for withdrawal. An alternative to dissolution may be to continue the fund in a closed condition. In that event withdrawing members might well receive less than if the fund had dissolved. On the other hand, to allow for withdrawal whether by using select, aggregate, or ultimate rates, may penalize members who would not have withdrawn. Here there is scope for differences of opinion. An honest attempt to take the circumstances of the dissolution into account may be found to be helpful in achieving a sensible result. If the aim of the funding method has been to provide a prescribed level of dissolution rights it would be wrong to take account of the possibility of withdrawal. If, however, the funding has been with the objective of stabilizing contribution outlay relative to payroll it would normally be appropriate to allow realistically for the possibility of future withdrawals in assessing the relative shares of the members but to assume too that on withdrawal the member would choose the most valuable benefit available to him.

PART IV. THE SIGNIFICANCE OF THE MEMBERS' RIGHTS ON DISSOLUTION

Overriding Need for Protection of the Members' Rights

37. In § 22 attention was drawn to the possibility that the method of calculating members' rights on a dissolution might depend upon the circumstances in which the dissolution took place. Dissolution may be caused by any of the following circumstances. First, an existing fund may be replaced by a new one to which the members of the dissolving fund may be given the right to transfer. Secondly,

the employer may be unable for one reason or another to continue to pay the contributions which are necessary to enable the fund to meet its obligations: the employer need not necessarily be going out of business but no doubt that would be the usual reason. Thirdly, the trusts may determine under the operation of a clause which limits their duration so as not to contravene the law against perpetuities.

38. Under any of these circumstances it may become necessary to assume that the member of the dissolving fund will not be required nor wish to participate in any arrangements which may be made for the members to participate in another scheme. It should not be overlooked that industrial unrest may follow any attempt to force members into transferring their share of the assets into a successor scheme. In any case the trustees may have to make redress to aggrieved employees if they do not, within the powers they have, protect the rights and interests of the members and beneficiaries. In passing it should be noted that if the trustees are themselves employees and the employer is aggressive, their position may be unenviable. Accordingly there will be circumstances in which any sum transferred from a dissolving fund to a successor fund can only be that part of the dissolving fund which is left after providing for the non-transferring members those dissolution rights which they are entitled to have bought for them. This means that there must be some guarantee that the assets available for the provision of dissolution rights must be sufficient to provide such rights for all the members, because account must be taken of the possibility that none of them may wish to transfer to the successor fund. The terms upon which the dissolution rights may be bought and the value of the assets available to buy them must be guaranteed for a sufficient period to allow the operation to be carried out.

Consequences of Dissolution Options of the Members

39. If there is no question of a choice by the member as between transfer and non-transfer, the dissolution operation is simplified because the rights may be expressed as provisional figures, calculated in accordance with agreed principles, subject to minimal *pro rata* adjustment when the dissolution actually takes place and the rights are purchased. Where, however, the member is going to be given a choice, it is desirable that the maximum amount of certainty should be associated with the dissolution rights promised to him, otherwise he will be able to claim that he was asked to exercise his option on the basis of incorrect information. In the case of a privately invested fund the dissolution rights cannot be calculated unless the value of the available assets is known. This indicates that they must be liquidated for cash. This may be a difficult process in some instances and, in any case, it is clearly undesirable that expenses of realization and reinvestment should be incurred if the members are likely to elect to transfer their shares of the assets to a new fund. If sale of the assets is to be avoided it is necessary for the employer to guarantee that, if in the event it becomes necessary to liquidate and buy annuities, he will make good any shortfall between the sum required to

purchase annuities and the realized value. This implies that if the value of the fund rises, the appreciation will accrue to the benefit of any fund to which any of the members transfer. If, however, the assets appreciate and none of the members transfers, this may be embarrassing; subject to the trust deed it might be possible to increase the amounts of the deferred annuities or transfer the balance of the assets to the employer. This complication does not arise of course in the case of wholly-insured benefits because the insurance company takes the risk of changes in the value of the underlying assets or in the terms upon which new business is being written.

40. The attitude of the employees to a projected transfer may be dictated by the benefit and contribution scales in the terminated fund and those in a successor fund. They may also have one eye on the rights they might secure if the available assets were not transferred but were used to buy annuities in the market. If a fund has been invested heavily in equities and is dissolved at a time when equities are standing high and deferred annuities are cheap to buy, a dissolution right may be far more valuable to a member than anything he could get on transfer to a new fund. This might be the result of a cautious but sensible funding policy predicated by the volatility of equity prices, or it might be the effect of a too stringent valuation by the actuary of equity shares in general, with a view to long-term stability of the contribution rate, and a consequent undervaluation on a dissolution. The uncertainties surrounding pension funds today being what they are, it would be in the employer's interests if the actuary were to draw his attention to the dissolution position as well as to the aim of long-term stability, doubtful of achievement, when advising on the contribution rate at each valuation. Be that as it may, it is clear that whatever a member's right may be on the dissolution of a fund, no reconstruction should without his consent attempt to take it away from him, except as part of a package deal into which the trustees have power to enter and subject to the industrial consequences.

41. It is plainly an expensive matter for an employer if, as a result of a reconstruction involving the winding up of a pension fund, an employee can get a far larger benefit than it was ever contemplated that he should, had the fund continued in existence. The winding-up rule should therefore be drafted in such a way as to ensure that if the employee does not take up an offer to transfer to a successor fund he does not have a right to any share of assets in excess of those required to purchase the prescribed minimum winding-up benefit. It is, nevertheless, highly unlikely that the winding-up rule has been drafted in that way. Suffice it to say that an employer, who finds himself winding up a fund of which the beneficiaries have the right to have the whole of the assets applied for their benefit, will prefer to see any 'surplus' in relation to 'accrued rights' given to the younger members rather than the old ones. This is because a young member has a powerful incentive to join a successor fund in order to avoid a loss of benefit accrual for post-reconstruction service, thus on transfer the 'surplus' can be used effectively to meet a part of the cost of such accruals. It would also, for

the same reason, be in the interests of an employer that minimum accrued rights in a final salary-service type of scheme should include an allowance for future salary increases. Members of a scheme whose dissolution was not contemplated might well find a prospect of accrued rights which included an allowance for future salary increases an attraction.

PART V. APPORTIONMENT AS A PRELIMINARY TO PARTIAL DISSOLUTION

Need for Equity for all Members on Secession of a Participating Company

42. It is not unknown for members who have to withdraw from a fund because of the sale, by the parent company, of the company which employs them to be granted no more than their withdrawal rights. The whole of any additional provision for future salary increases, for example, thus remains in the fund for the benefit of the other participating employers or their employees. Inequity on a dissolution or partial dissolution of the fund is not always at the expense of the employer! Because the employees of the seceding company participated in the fund on the same terms and conditions as the non-seceding members, it is logical before calculating the rights of the seceding employees to split the fund between those who do and those who do not secede, and the proper basis on which this should be done is by reference to the net liabilities of the two sections of membership calculated on an actuarial basis which gives proper weight to each of the factors affecting the liabilities and their value calculated on the assumption that the secession had not taken place and that the fund had continued. Thus, it may be that the participating companies paid separately assessed contribution rates and if so the apportionment should take account of this fact.

Apportionment of Surplus

43. Special difficulties may be highlighted by the situation in which a company, having started participating in a scheme for the companies of a particular group, secedes within a comparatively short space of time, just after a valuation say. How ought the equitable share of the fund for the employees of the seceding company be assessed? Certain questions immediately spring to mind. First, if any surplus were carried forward from the preceding valuation when the seceding company was not participating, should the seceding company share in any part of that surplus? Secondly, how should it share in any surplus which accrues during the valuation period bearing in mind that it may not have been participating for the whole of that period? Thirdly, suppose that at the valuation there was a change of basis which released a substantial amount of surplus, should it participate in that and, if so, on what basis? Fourthly, if at the preceding valuation there was any unrealized capital appreciation, should not the non-seceding companies have their shares of surplus adjusted so as to exclude the seceding company from any part of it?

44. Before these questions can be answered it is necessary to consider how the surplus would be shared if no participating company ever seceded. The answer must depend on whether the participating companies are wholly-owned subsidiaries of the parent company or whether outsiders have an interest in them. Clearly in the former case the apportionment of surplus if it is used to reduce the company's liabilities does not greatly matter but if the surplus is passed on to the employees there may be complaints if one section of the employees is favoured apparently to the detriment of another section. Bearing in mind, however, that the employees will rarely be contributing anything like a sufficient sum to meet the cost of the benefits and that a pension scheme is an instrument of company policy, the use of surplus to provide the same sort of benefit improvement for all members of the fund cannot be regarded as inappropriate or improper. If, however, a third party is interested in one or more of the companies it may be difficult to avoid the conclusion that in default of agreement of a uniform benefit improvement it may be necessary to attempt an equitable apportionment, however that may be interpreted.

45. It is not, of course, essential for a partly-owned subsidiary to adhere to a trust deed under which a group scheme is established in order that the employees of the subsidiary may have the same scale of benefits as everybody else in the group. This can easily be achieved by the establishment of a separate scheme for the employees of the particular subsidiary, an appropriate proportion of the cost then being borne by the outside interests. Bearing in mind the difficulty of apportioning liabilities in a group scheme, the establishment of a separate fund may clearly be the appropriate way out of the difficulties.

46. Turning to the questions which were posed in §43, the answers to the questions will in the normal course be pretty clear. The seceding company may participate *pro rata* in the surplus disclosed no matter when or how it arose provided that it is something that could have happened if secession had not taken place or, at the discretion of the trustees, the proportionate part of any surplus to which the activities of the seceding employer have not contributed may be withheld from the seceding members. The powers of the trustees on the partial dissolution should follow the powers of the trustees to dispose of a surplus given the normal continuance of the fund.

PART VI. ILLUSTRATION BY A MODEL FUND

The Structure of the Model

47. At this point it would appear useful to throw some light on the practical consequences of the various possibilities which have been discussed by a consideration of the results of calculations made for a model pension fund. The staff of the company is generated by an entry every fifth year of 200 male employees at the age of 20 and sufficient admissions at every fifth succeeding age up to and including 40 to make good the loss of members at the five preceding years of age during the said five years. Admissions also take place at the ages of 45, 50 and 55

to replace one half of the membership loss at each of the five preceding years of age during the said five years. Entry to the fund is assumed to take place at the same time as entry to service. The members are assumed to be subject to the following percentage decrements over five-year periods:

Age attained at beginning of five-year period	Age at entry to service				
	20	25	30	35	40 *et seq.*
20	70				
25	30	49			
30	20	26	32		
35	10	13	16	19	
40	10	10	10	10	10
45	10	10	10	10	10
50	10	10	10	10	10
55	12½	12½	12½	12½	12½
60	15	15	15	15	15

48. Once the fund has reached a stable condition, its active membership just after the commencement of a five-year period will be as follows:

Age attained at beginning of five-year period	Age at entry to service								Total
	20	25	30	35	40	45	50	55	
20	200								200
25	60	140							200
30	42	71	87						200
35	34	53	59	54					200
40	31	46	50	44	29				200
45	28	41	45	40	26	10			190
50	25	37	41	36	23	9	9		180
55	23	33	37	32	21	8	8	9	171
60	20	29	32	28	18	7	7	8	149
65	17	25	27	24	15	6	6	7	127
Total	480	475	378	258	132	40	30	24	1,817

49. It has been assumed for the purpose of the model that at each age attained the highest and lowest salaries of the members who entered at each age are the following proportions of the average salary. The salaries of the other members may be anything within the range so long as the average for the age attained is as shown in the table on the next page.

50. It has been assumed for the purpose of working out the past contributions of the members that the salaries of members with the lowest salaries have always been at the lower end of the range but that salary levels in general have been rising at the rate of 5% per annum, corresponding assumptions being made for members with average salaries and with the highest salaries.

51. The service table assumptions are set out in Appendix I. The mortality of the pensioners is assumed to be in accordance with the $a(55)$ table. The data appropriate to the active members are summarized in Appendix II and that

Age attained	Lowest salary as percentage of the average	Highest salary as percentage of the average	Average salary £ p.a.	Lowest salary £ p.a.	Highest salary £ p.a.
20	95	150	690	657	1,035
25	90	175	990	891	1,731
30	85	200	1,290	1,095	2,580
35	80	225	1,527	1,221	3,435
40	75	250	1,737	1,302	4,341
45	70	275	1,932	1,353	5,313
50	65	300	2,112	1,374	6,336
55	60	350	2,292	1,374	8,022
60	55	400	2,445	1,344	9,780
65	50	450	2,592	1,299	11,679

appropriate to pensioners in Appendix III. It has been assumed that the pensioner membership at age 65 is increased by the active members reaching that age, and that at the dissolution date exactly one-half of the members then reaching that age have just retired, the other half being expected to retire on the following day. In order to calculate the pensions, the same assumptions have been made as to the past progression of salaries as were made for the purpose of determining the total past contributions of the active members. No particulars are given of ill-health pensioners or widows, as their presence would merely complicate the model without in any way improving its value for present purposes.

52. It may be objected that the model is unrealistic or over-elaborate. It has, however, been constructed with the sole object of providing a body of data which may be valued, which includes a range of salaries and durations of membership and past contributions for each age attained, which is not so crude as to call in question the results of the calculations and which furnishes examples of the effect on individuals with widely differing salaries, ages and durations of membership of different methods of calculating dissolution rights.

The Benefit Structure of the Model

53. Calculations have been made of the liabilities for each of the following benefits:

On retirement at 65, a life pension guaranteed payable for five years, at the rate of 1/80th of salary at retirement for each year of service.

On ill-health retirement, a life pension guaranteed payable for five years, at the rate of 1/80th of salary at retirement for each year of service, or, if greater, each of one-half of the number of years of service which would have been rendered had service continued to the age of 65.

On death in service

(i) a refund of the member's own contributions,

and (ii) a sum equal to one year's salary at the date of death,
and (iii) a life pension for the member's widow equal to one half of the pension which the member himself would have had had he remained in service until the age of 65 and then retired on the same salary as that which was being paid to him at the date of his death.

On withdrawal a refund of the member's own contributions less income tax.

The benefits of the scheme are supported by a joint contribution rate of 10½% of salaries, of which the employee pays 5% of salary.

54. It has been assumed that at the date of the valuation it is possible to buy immediate annuities and deferred annuities in the market at the rates set out in Appendix IV. The basis is *a*(55) ult. after retirement, A49/52 ult. before retirement, 7½% interest. The members' past contributions have been applied on a 'returns no interest' table and the balance of any member's share on a 'no returns' table.

Examples of Past Service Pension Accrual

55. Table 1 shows the pension accrual of a sample of members with average salaries, in respect of service already rendered, on various assumptions as to what the future progression of their salaries would have been. It also shows the estimated salary on reaching the age of 65 on the same assumptions. The table does little more than demonstrate the obvious, which is that if no allowance is made for future salary increases in the funding method which is adopted, there is a grave risk that the member of a final salary/service scheme is going to be penalized to an uncomfortable extent if the scheme should discontinue. It demonstrates too the inadequacy of the requirement foreshadowed by *Strategy for Pensions* that on withdrawal from service the member must be furnished with a deferred pension on the normal scale having regard to the service he has rendered and the salary he has reached.

The Effect of Different Salary Scales

56. Table 2 shows the ratio of salary at 65 to salary at the present age on scales which would be appropriate for members whose salaries were always at the high end of the salary range for a given age, were always average, or were always at the low end of the salary range. Any attempt to allow for different scales of salary progression is foredoomed to failure unless it can be demonstrated for identifiable categories of employees that their future earnings could fairly have been expected to follow different progressions. The identification of reasonably homogeneous groups is a matter of considerable difficulty; nevertheless the table indicates the desirability of doing so if at all possible. It has been assumed throughout the calculations which follow that the only scale of salary progression which could be justified is that based on the average case.

Table 1

Age	Duration	Past service pension accrual — Allowance for salary increases				Prospective pension on retirement at age 65 — Allowance for salary increases			
		None	Scale only	Scale + 2½% p.a.	Scale + 5% p.a.	None	Scale only	Scale + 2½% p.a.	Scale + 5% p.a.
		£ p.a.	£ p.a.	£ p.a.	£ p.a.	£ p.a.	£ p.a.	£ p.a.	£ p.a.
30	5	81	162	385	895	645	1,296	3,080	7,157
	10	161	324	770	1,789	725	1,458	3,465	8,051
45	5	121	162	266	430	605	811	1,329	2,152
	10	242	324	532	861	726	973	1,595	2,583
	25	604	811	1,329	2,152	1,088	1,460	2,392	3,874
65	10	324	324	324	324	324	324	324	324
	25	811	811	811	811	811	811	811	811
	35	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135
	45	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460

Allowance for salary increases	Estimated salary at normal pension age
	£ p.a.
None	1,290
Scale only	2,595
Scale + 2½% p.a.	6,160
Scale + 5% p.a.	14,312
None	1,932
Scale only	2,595
Scale + 2½% p.a.	4,256
Scale + 5% p.a.	6,888
None	2,595
Scale only	2,595
Scale + 2½% p.a.	2,595
Scale + 5% p.a.	2,595

Table 2

Present age	Ratio of salary at age 65 to salary at present age if salary is always:		
	High	Average	Low
25	6·75	2·62	1·46
35	3·40	1·70	1·06
45	2·20	1·34	·96
55	1·46	1·13	·95

Apportionment by Reference to Past Service Pension Accrual

57. An apportionment by reference to the member's past service pension accrual is a matter of considerable difficulty with market annuity rates at their present levels unless the accrual allows for a rate of salary escalation. The complication arises because of the necessity to ensure that the dissolution annuity is worth at least the member's own contributions. If the allowance for inflation is not so high that the pension purchasable by a share of assets in proportion to the cost of the past service pension accrual exceeds the pension purchasable by the member's contributions in all cases, the apportionment can be carried out only by successive approximation. Table 3 indicates the extent of the allowance which needs to be made in the case of members whose salary careers have followed the course of the assumed average. The lower the rate of salary escalation for which

Table 3

Age	Duration	Pension purchased by member's past contributions	Past service pension accrual			
			Allowance for salary increases			
			None	Scale only	Scale + 2½% p.a.	Scale + 5% p.a.
		£	£ p.a.	£ p.a.	£ p.a.	£ p.a.
30	5	472	81	162	385	895
	10	744	161	324	770	1,789
45	5	239	121	162	266	430
	10	405	242	324	532	861
	25	632	604	811	1,329	2,152
65	10	116	324	324	324	324
	25	196	811	811	811	811
	35	217	1,135	1,135	1,135	1,135

allowance is made, the higher will be the factor by which the cost of the pension accrual will be multiplied in order that the total assets may be absorbed, and the less likely it will be that credit will have to be given for the minimum value in any particular case. The effect of a lower allowance for escalation is thus to benefit the oldest members and to reduce the dissolution annuities purchasable for the younger members save to the extent to which they are protected by the require-

ment that they shall not be given a benefit less valuable than their own contributions. This is brought out by Table 4. It has been assumed for the purpose of this table alone that:

(i) the members' salary careers have all followed the course of the assumed average;
(ii) the members concerned account for the whole of the scheme's membership;
(iii) the assets are sufficient to provide the cost of the past service pension accruals allowing for future scale increases plus 5% p.a.

Table 4

Age	Duration	Assumed No. of Members	Past service pension accrual allowing for scale increases + 5% p.a.	Ratio of dissolution annuity to past service pension accrual with allowance for scale increases + 5% p.a.		
				Allowance in calculation of dissolution annuity for salary increases		
				None	Scale only	Scale + 2½% p.a.
			£ p.a.			
30	5	71	895	·53	·53	·58
	10	42	1,789	·42	·42	·59
45	5	26	430	·56	·59	·82
	10	40	861	·48	·60	·82
	25	28	2,152	·49	·62	·84
65	10	7	324	1·84	1·71	1·40
	15	6	487	1·84	1·71	1·40
	25	15	811	1·84	1·71	1·40

Clearly, if a scheme includes pensioners who take priority but no share of any surplus, an apportionment by reference to the cost of the past service pension accrual is most likely to lead to an embarrassingly large anomaly between pensioners and active members close to the normal age of retirement. Furthermore one has only to attempt the calculations to be convinced that, if the requirement that the share of fund to be applied for the member shall not be less than his own contributions takes effect, the calculations are likely to be very complicated, time-consuming and correspondingly costly.

Apportionment by Reference to the Reserve

58. Table 5 shows the results for the members included in Table 1 of an apportionment on the basis of valuation reserves if the realizable value of the assets is precisely equal to the total reserve on the assumption of a rate of interest of 7½% and salary escalation at the rate of 5%, no allowance being made

for post-retirement cost-of-living increases. In each case it has been assumed that the member's total past contributions will be used to purchase an annuity guaranteed for five years on a basis which provides for a return of the purchase money without interest on death before the age of 65. It has been assumed also that the balance of the share allotted to the member is used to buy an annuity on a basis which makes no allowance for returns on death. These assumptions have been made throughout the calculations which follow. The amount of annuity

Table 5

Age	Duration	Past service pension accrual allowing for scale increases + 5% p.a.	Dissolution annuity if fund shared out in proportion to the valuation reserve	Ratio of dissolution annuity to past service pension accrual
		£ p.a.	£ p.a.	
30	5	895	774	·86
	10	1,789	1,790	1·00
45	5	430	614	1·43
	10	861	1,132	1·31
	25	2,152	2,705	1·26
65	10	324	324	1·00
	25	811	811	1·00
	35	1,135	1,135	1·00

for the active members aged 65 is the same as that payable to members who retired at that age immediately prior to the dissolution. It will be realized, however, that the avoidance of the possible anomaly at that age depends upon the total assets equalling the total reserves or on the pensioners ranking *pari passu* with the active members. Moreover there must be no anomaly between the annuity rates obtainable for immediate annuities and for deferred annuities. At the young ages the amount of the prospective pension falls below the past service accrual at short durations. This, of course, reflects the fact that the contribution rate is not theoretically correct for the ages at entry concerned. The apportionment takes into account the reserve, positive or negative, on future service, and this distorts the relationship between the past service accrual and the dissolution annuity. In the middle age range the method produces a generous answer and the reason for this is that the value of the death benefits, including the past service widow's pension accrual, has been converted into a pension for the member himself. That the proportion which the dissolution annuity bears to the past service pension accrual diminishes as duration increases reflects the presence of a positive reserve on future service. It is hard to see any justification for an apportionment based on the valuation reserves unless the employer's global contribution can be apportioned between the members. This is a matter of some difficulty unless it first be established how much of the accumulated assets should be held for each member—the very thing to be determined.

Apportionment by Reference to Employees' Past Contributions

59. Table 6 compares the results of an apportionment by reference to total past contributions, the cost of the pensions in course of payment first being set aside. Two alternative assumptions have been made. First, that the fund has been in existence throughout the service of all present employees and pensioners. Secondly, that it was established only 20 years ago but with full credit for previous service. The results of apportionments on the basis of employees' past

Table 6

Age	Duration	Past service pension accrual allowing for scale increases + 5% p.a.	Dissolution annuity if fund shared out in proportion to		Ratio of dissolution annuity to past service pension accrual if	
			Total past contributions throughout service	Total past contributions during last 20 years	Contributions throughout service	Contributions during last 20 years
		£ p.a.	£ p.a.	£ p.a.		
30	5	895	1,864	1,988	2·08	2·22
	10	1,789	2,940	3,134	1·64	1·75
45	5	430	979	1,044	2·28	2·43
	10	861	1,659	1,770	1·93	2·06
	25	2,152	2,586	2,577	1·20	1·20
65	10	324	445	474	1·37	1·46
	25	811	752	726	·93	·90
	35	1,135	834	726	·73	·64

contributions are unlikely to have any appeal. The dissolution annuities are quite inadequate for members with long durations of membership and they are overgenerous for short-service members. It is, moreover, hard to justify the adoption of such a basis on any rational criterion. The method is guaranteed to produce anomalies and dissatisfaction even if past contributions are accumulated with interest because every member of a final salary-service scheme pays a different proportion of the cost of his benefits. It does of course absolve the actuary from making any assessment of the future course of interest rates, mortality rates and inflation, to say nothing of other elements, but this is unlikely to be a commendation to any seeker after a rational apportionment.

Apportionment in accordance with the methods of §§28 *and* 29

60. Table 7 summarizes the result of the calculations on the lines of §§ 28 and 29. It compares the results brought out by assuming that the realizable value of the fund is respectively 80%, 100% or 120% of the total liability in respect of pensioners and in respect of the past service of the active members. The calculations are done on two alternative assumptions, first that the pensioners have priority in the dissolution but no share of any surplus, and alternatively, that the pensioners have no priority but do share in the surplus. The calculations have been made on the first of the bases set out in § 61. The resulting figures

Table 7

Age	Duration	Pension accrual allowing for scale increases +5% p.a. for		Dissolution annuities if assets shared out by the method described in					
				§ (28)—Pensioners given priority			§ (29)—Pensioners not given priority but sharing in surplus or deficiency		
		Past service	Past and future service	Assets as proportion of all past service liabilities					
				80%	100%	120%	80%	100%	120%
Active members:		£ p.a.	£ p.a.	£ p.a.	£ p.a.	£ p.a.	£ p.a.	£ p.a.	£ p.a.
30	5	895	7,157	808	1,030	3,336	820	1,030	1,239
	10	1,789	8,051	1,530	2,048	4,354	1,632	2,048	2,463
45	5	430	2,152	405	514	1,270	407	514	621
	10	861	2,583	783	1,032	1,788	818	1,032	1,246
	25	2,152	3,874	1,822	2,605	3,361	2,073	2,605	3,138
65	10	324	324	241	324	324	259	324	389
	25	811	811	566	811	811	648	811	973
	35	1,135	1,135	769	1,135	1,135	907	1,135	1,362
Pensioners:									
65	10	324		324	324	324	259	324	389
	25	811		811	811	811	649	811	973
	35	1,135		1,135	1,135	1,135	908	1,135	1,362
85	10	122		122	122	122	98	122	146
	25	306		306	306	306	245	306	367
	35	428		428	428	428	342	428	514

are again compared with the past service pension accruals on the assumption that future salary increases would have been in accordance with the average salary scale escalating at a rate of 5% per annum, and also, with the total prospective pension which would have been paid had future service been brought into account as well. It will be seen therefore that whilst, if the fund is in surplus, the method of §28 is effective in apportioning the bulk of it to the younger members, so that while the resulting pensions are on the face of it absurdly large by reference to the past service pension accruals allowing for future salary increases and escalation at 5% p.a., the resulting pensions are still likely to be below those which would be expected if service were to continue. Moreover, anomalies between pensioners and active members are avoided. It is suggested therefore, that the method is suitable when a fund is being wound up and replaced by another fund by the same employer, because the surplus can indirectly be used to reduce the outlay of the company on future service pensions—as would presumably have happened if the dissolution had not taken place. There is, however, a danger that the young employee may take his dissolution annuity, withdraw from service and seek a full future service accrual from a new employer or alternatively try to re-enter service and qualify for a full future service accrual as a new entrant. If the fund is not being replaced by another one, it would appear reasonable that all of the members and pensioners should share in any surplus or deficiency there may be in relation to the past service pension accrual. If the fund is in surplus the resulting deferred annuities are more or less reasonable in relation to the past service pension accrual and the pensions in course of payment but the youngest members have the largest proportionate increase. The reason for this is that the past service reserve includes not only the value of the pension prospectively payable on retirement at the normal age but also the values of the ill health pension and the widow's pension on death in service. The value of these benefits adjusted for any proportion of surplus or deficiency serves to increase the member's dissolution annuity; this does not seem unreasonable. If the fund is being discontinued because the employer is going into liquidation, and the fund is in deficiency, there appears to be little justice in giving the pensioners the whole of their pensions but only giving a proportion of the accrued benefit to the employees who are still in service; this becomes apparent from a consideration of the anomaly which would otherwise arise between members aged 65 who are on the point of retiring and those who have just done so.

Effect of different Actuarial Assumptions on the Results of Apportionment by the methods of §§ 28 *and* 29

61. Table 8 indicates the effect upon the relative shares of the members and pensioners of basing the apportionment upon different assumptions as to the future course of interest rates and salary escalation and also the effect of making allowance for post-retirement cost of living increases. The alternative assumptions are as follows:

Interest	Salary Escalation	Post-retirement increases	Total valuation liability
per cent.	per cent.	per cent.	£m.
7½	5	0	6·4
5	2	0	7·6
3½	0	0	8·3
7½	5	2½	8·2

It is at any rate conceivable that the portfolio of investments might be such that if valued on a basis consistent with that adopted for the valuation of the liabilities, the monetary result of valuations on the first three bases could be the same. This view is not to be interpreted as meaning that the three bases are equally valid; it is highly unlikely that advice regarding possible changes in benefits and contributions would be the same under each of them. Two further alternative calculations have been made on the first of the foregoing bases. First the assumed rate of withdrawal at each age has been multiplied by 5 and secondly, the value of the widow's pension on death in service has been disregarded. In the case of the last basis the calculations have been based on two alternative assumptions: first, that dissolution annuities do not alter after they become payable; secondly, that they increase by 2½% per annum. The realizable value of the assets has been taken in each case as the value of the past service liabilities on the first valuation basis. It will be seen that the 5/2/0 and 3½/0/0 bases tip the scales increasingly in favour of the older members at the expense of the younger members and tend to create anomalies between those just retired and those on the point of doing so. The 7½/5/2½ basis opens up the same anomaly and tilts the balance in favour of the younger members because of the larger increase in the value of the widow's pension on death in service. If a higher level of withdrawal is allowed for, the middle-aged benefit at the expense of the young members, the difference being more pronounced for the very young ages, at which the cost of annuities is very little, than at the middle ages at which the cost is greater; the relative positions of those on the point of retirement and those who have just retired are unchanged. If the liability for widows' pensions is eliminated the effect is dramatic at the young ages because the whole of the past service widows' pension liability becomes surplus and is apportioned mainly to the younger members who have the most future service still to do and for whom annuities are cheapest.

62. Table 9 shows the effect on the 5/2/0 basis of bringing the pensioners into account at either the market value of their pensions or the valuation liability. Once again the realized value of the assets has been taken as the past service liability on the 7½/5/0 basis. The calculations follow §§ 28 and 29 respectively giving pensioners priority and no surplus and treating pensioners and active members equally. If the active members and the pensioners are to rank equally, they will only do so if the basis used for valuing the pensions of the active members after the age at which they become payable is the same as the basis used for the valuation of the pensioners' liability. If the interest element of the

Table 8

Dissolution annuities if assets shared out on bases described in § 28 pensioners having priority to the extent of the market cost of their current annuities

Age	Duration	Past service pension accrual allowing for scale increases +5% p.a.	7½/5/0	5/2/0	3½/0/0	7½/5/2½ fixed pensions	7½/5/2½ pensions escalate at 2½% p.a.	7½/5/0 $5 \times wq_x$	7½/5/0 excluding widows' pensions
Active members:		£ p.a.	£ p.a.	£ p.a.	£ p.a.	£ p.a.	£ p.a.	£ p.a.	£ p.a.
30	5	895	1,030	968	905	1,026	874	852	1,451
	10	1,789	2,048	1,891	1,749	1,985	1,690	1,578	2,336
45	5	430	514	515	507	513	437	545	642
	10	861	1,032	1,022	1,002	1,009	859	1,063	1,101
	25	2,152	2,605	2,517	2,439	2,439	2,077	2,636	2,495
65	10	324	324	343	360	309	263	324	324
	25	811	811	843	880	747	633	811	811
	35	1,135	1,135	1,172	1,220	1,030	877	1,135	1,135
Pensioners:									
65	10	324	324	324	324	324	324	324	324
	25	811	811	811	811	811	811	811	811
	35	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135
85	10	122	122	122	122	122	122	122	122
	25	306	306	306	306	306	306	306	306
	35	428	428	428	428	428	428	428	428

Table 9

Age	Duration	Past service pension accrual allowing for scale increases +5% p.a.	Dissolution annuities if assets shared out on the basis by the method described in § 28—Pensioners given priority on the basis of market cost	§ 28—Pensioners given priority on the basis of valuation liability	§ 29—Pensioners not given priority but sharing in surplus or deficiency on the basis of market cost	§ 29—Pensioners not given priority but sharing in surplus or deficiency on the basis of valuation liability	§ 28 or § 29 (the same effect) Valuation liability and market cost (the same)
Active members:		£ p.a.	£ p.a.	£ p.a.	£ p.a.	£ p.a.	£ p.a.
30	5	895	968	923	968	928	1,030
	10	1,789	1,891	1,787	1,917	1,840	2,048
45	5	430	515	490	515	494	514
	10	861	1,022	966	1,034	991	1,032
	25	2,152	2,517	2,345	2,606	2,500	2,605
65	10	324	343	322	351	337	324
	25	811	843	784	877	843	810
	35	1,135	1,172	1,085	1,227	1,179	1,133
			Basis 5/2/0	Basis 5/2/0	Basis 5/2/0	Basis 5/2/0	Basis 7½/5/0
Pensioners:							
65	10	324	324	380	299	337	324
	25	811	811	952	748	843	811
	35	1,135	1,135	1,333	1,046	1,179	1,135
85	10	122	122	131	112	116	122
	25	306	306	329	282	291	306
	35	428	428	460	395	407	428

basis is not the same as that implicit in the market rates of annuity there will be a tilting of the scale in favour of members at one end or the other of the age range.

PART VII. CONCLUSION

63. Having regard to the considerations discussed in the paper and the supporting calculations, it is submitted that on the dissolution of a pension fund the methods of calculating the dissolution annuities of the members which are set out in §§ 28 and 29, according to the circumstances in which the dissolution takes place, are the ones most likely to lead to an acceptable result. It is nevertheless necessary that the interest basis adopted should be consistent with that implied by the annuity rates obtainable in the market and that the rate of salary escalation assessed should be consistent with the rate of interest assumed. In order that the actuary may have sufficient scope to produce an acceptable result the dissolution rule should be on the lines set out in Appendix V.

64. That this paper has been completed is due to Messrs. E. M. Lee and A. A. Jenkinson who encouraged me to tear up my first draft and start again, to Messrs. R. C. B. Lane, G. V. Bayley and A. Farncombe who also helped me to convey my thoughts, and to Mr R. R. Munro who coaxed many more figures from the computer than appear in the paper. To all of them I owe a debt of gratitude which I am happy to acknowledge with thanks. I should also acknowledge the opportunities given to me by my clients to think about the problems; I hope neither what I have written nor the discussion causes them any uneasiness!

APPENDIX I

Service table and other assumptions for the model fund calculations

Age x	Probability of service terminating during the year following attainment of age x as a result of			Scale salary at age x	Proportion married at age x last birthday
	death	withdrawal	retirement	£ p.a.	
25	·0011	·0350	·0000	330	·320
26	·0011	·0320	·0000	350	·390
27	·0012	·0290	·0000	370	·460
28	·0012	·0260	·0001	390	·530
29	·0013	·0230	·0001	410	·600
30	·0014	·0200	·0002	430	·665
31	·0014	·0180	·0002	449	·720
32	·0015	·0160	·0002	466	·765
33	·0015	·0140	·0003	481	·800
34	·0016	·0120	·0003	495	·825
35	·0017	·0100	·0004	509	·840
36	·0018	·0080	·0004	523	·852
37	·0019	·0060	·0005	537	·862
38	·0020	·0040	·0006	551	·871
39	·0021	·0020	·0007	565	·878
40	·0023	·0000	·0008	579	·884
41	·0025	·0000	·0009	593	·889
42	·0027	·0000	·0010	607	·894
43	·0029	·0000	·0011	620	·898
44	·0032	·0000	·0013	632	·901
45	·0035	·0000	·0015	644	·904
46	·0038	·0000	·0018	656	·906
47	·0042	·0000	·0021	668	·908
48	·0046	·0000	·0024	680	·910
49	·0050	·0000	·0027	692	·912
50	·0055	·0000	·0030	704	·914
51	·0060	·0000	·0034	716	·916
52	·0066	·0000	·0039	728	·918
53	·0072	·0000	·0045	740	·920
54	·0079	·0000	·0053	752	·922
55	·0087	·0000	·0062	764	·923
56	·0095	·0000	·0072	775	·924
57	·0105	·0000	·0083	785	·925
58	·0115	·0000	·0095	795	·926
59	·0127	·0000	·0108	805	·927
60	·0140	·0000	·0120	815	·928
61	·0155	·0000	·0128	825	·929
62	·0171	·0000	·0136	835	·930
63	·0188	·0000	·0144	845	·931
64	·0208	·0000	·0150	855	·932
65	·0000	·0000	1·0000	865	·933

It has been assumed that on termination of service the member's age will exceed that of his wife by $3\frac{1}{2}$ years.

APPENDIX II

Summarized data relating to the active members of the model fund at the date of dissolution

Age	Total salaries	Total salaries times duration	Total past contributions If paid during last 20 years only	Total past contributions If paid since entry to the fund
	£000 p.a.	£000 p.a.	£000 p.a.	£000 p.a.
25	59	297	11	11
30	148	1,016	35	35
35	228	2,087	69	69
40	306	3,635	111	111
45	362	5,475	153	155
50	382	7,357	183	191
55	405	9,372	204	221
60	414	11,024	213	240
65	196	6,157	105	123

APPENDIX III

Summarized data relating to the pensioners of the model fund at the date of dissolution

Age	Total pensions payable £000 p.a.
65	77
70	104
75	65
80	34
85	14
90	4
95	1

APPENDIX IV

Deferred and immediate annuity purchase prices assumed for the model fund calculations

Age	Cost of deferred annuity of £100 p.a. from age 65 if on earlier death purchase money is		Age	Cost of immediate annuity of £100 p.a.
	Returned without interest	Not returned		
	£	£		£
25	37	36	65	839
30	54	52	70	694
35	79	75	75	573
40	116	108	80	457
45	171	157	85	355
50	255	230	90	273
55	382	343	95	212
60	571	525		
65	839	839		

APPENDIX V

Draft winding up rule of a final salary-service scheme established for employees of a group of companies.

(1) In the event of

(a) a notice in writing being given by an employer to the Trustee that it does not intend to make any further contributions to the fund, or

(b) a notice in writing being given by the Principal Company to the Trustee that a particular employer shall not make any further contributions to the fund, or

(c) an employer going into liquidation, or

(d) an employer having ceased for a period of six months to be associated with the Parent Company to an extent that the employer's continuing participation in the scheme would prejudice the Revenue's approval,

then that employer at the date of the happening of such event shall (without prejudice to its liability to pay any outstanding contributions) cease to be an employer for the purposes of this Deed and the Trustee shall in accordance with sub-clause (3) make provision out of the fund for such benefits (vested or contingent) as the Trustee after consultation with the Actuary shall determine shall be made for each of the members who is or was employed by that employer and for his dependants.

(2) In either of the following events

(i) the Principal Company giving notice in writing to the Trustee that it wishes the scheme to be wound up, or

(ii) the expiration of the period of eighty years from (date of establishment of the scheme), which shall be the perpetuity period applicable to the scheme for the purposes of the rule against perpetuities,

then the scheme shall be wound up and the Trustee shall hold the fund on trust to apply it, after paying or providing for the Trustee's expenses, in accordance with sub-clause (3)

first in providing benefits then payable out of the fund to any persons and any benefits contingently payable to any person on attaining the normal age of retirement or on the death of any such person to the extent to which in the opinion of the Actuary may reasonably be regarded as having arisen by virtue of that part of pensionable service which has been rendered prior to the date as at which the fund is wound up

secondly as to any balance remaining in providing additional benefits (vested or contingent) for persons actually or prospectively entitled to benefits

thirdly in paying any balance remaining to the employers in such shares as the Trustee after consultation with the Actuary shall determine

and every such benefit or the provision to be made for the benefit shall be of such amount as the Actuary shall certify having regard to such matters as he shall think fit including the rights and prospective rights of the person to or in respect of whom the benefit is payable.

(3) The provision of benefits to be made under sub-clause (1) or (2) shall be made in any one or more of the following ways

(a) by the purchase of non-assignable and non-commutable annuities,

(b) by transferring, with the consent of the member, the relevant part of the fund certified by the Actuary to another retirement benefits scheme with a view to benefits being obtained from that scheme,

(c) by paying the benefits out of the fund, and

(d) by such other means as the Trustee in its absolute discretion thinks fit

but so that

(i) no part of the fund shall remain under the trusts of this Deed after the expiration of the said perpetuity period, and

(ii) no payment shall be made out of the fund which would prejudice the Revenue's approval.

ABSTRACT OF THE DISCUSSION

Note: Throughout the discussion "New Code" referred to legislation relating to occupational pension schemes in the Finance Act 1970.

The author, in introducing the paper, commented that the trouble with his subject was that everybody could point to his own experience and say of any approach that it would not have been appropriate in the circumstances with which he was faced, and every case was, to some extent, unique. To write a paper on the subject was accordingly very difficult and even in the space of thirty-seven pages he had said very little that would be of enormous help in any particular case. However, thirty-seven pages was quite enough and other people should have a chance to say what they thought.

Mr T. G. Arthur, in opening the discussion, congratulated the author on a most comprehensive and original paper concerning a subject with which had received little attention over the years despite its obvious importance. After reading it, he was convinced more than ever that prevention was better than cure, and his first point was that it seemed that the Inland Revenue's determination to give away as little as ever possible was going to be a positive blessing to actuaries concerned with dissolutions in the future. His first reaction to the stipulation for New Code approval that rules must contain provisions for surplus moneys on dissolution to be refunded to the employer had been that it was another piece of bureaucracy of dubious logic at best. However, taken together with the mandatory nature of the New Code and the provision that Rules could be changed to comply with the Code, it was almost a tailor-made excuse for providing for returns to the employer in even more instances than those envisaged by § 41 of the paper. In some cases it might be conceivable to obtain New Code approval as a prelude to winding up, ostensibly perhaps to give the members the facility of partial lump sums but in reality to slip in on the blind side, so to speak, a clause about surplus moneys or some other useful clause regarding dissolution.

It was all part of the question whether or not the author might have paid a little more attention to ways and means of either avoiding dissolution altogether, or arranging in advance to remove some of the problems. For example, in § 3 of the paper, the author had stated that takeovers, amalgamations and rationalization of pension arrangements would continue to cause funds to be wound up. The opener hoped that in most cases the matter could be dealt with by some fairly sweeping reconstruction rule, which in his experience could be very useful indeed. In that way, it might be possible to limit dissolutions in the main to those cases where members did not become members of some other replacement fund and then the main reason for dissolution would be the inability of the employer to maintain his contributions. In those cases where a dissolution was unavoidable and the active members were to be invited to join another fund, it might be fruitful to work very closely indeed with those concerned with that replacement fund in order that the actual dissolution shares were to some extent, and care must be taken here, a stepping-stone to providing the desired past service rights in the replacement fund. Indeed, they could go further and make the choice between various alternatives somewhat academic by ensuring that the principles were consistent, although it was possible to go too far in that respect. He wholly agreed with the author that whether or not members would be invited to join a replacement fund was highly relevant.

Another area where the author's contentions might be discussed with feeling again concerned rule drafting rather than calculations, namely, the amount of discretion which should be given to the trustees or their actuary on a winding up. In § 7, the author suggested that many dissolution rules were too vague and in § 23 he stated that the members' rights in all circumstances should be crystal clear under the rules of the pension fund, even to the extent of publishing early retirement scales rather than something shrouded in obscurity like the expression 'actuarial interest'. He had recognized that membership of a fund was an inducement to employment and the prospective employee should know exactly what it meant. The opener thought there was

much room for argument about the lengths which should be gone to in following that principle. In the first place, the effect of some aspects of the scheme on the decision of the prospective employee would be marginal to say the least—after all, he was not informed as to what his salary was going to be in ten years' time and that was far more important than the difference between 68% and 69% as an early retirement factor. In the second place, while one might agree that 'actuarial interest' was often a bit of mumbo-jumbo giving *carte blanche* to a most peculiar breed of people, surely it was a fact that it often depended on conditions at the time and therefore could not be laid down in advance. It was rather interesting that, while 'actuarial interest' offended the author in that connexion, he had argued in § 13 that where the actuary was given a free hand on dissolution he should not attempt to justify his award unless criticism were offered. The seemingly conflicting view was substantiated in the quotation which had introduced the paper which, loosely translated, meant 'For goodness sake, cover your tracks.'

On the possible methods of determining shares when a dissolution was the only answer and the factors which influenced their choice, he was broadly in agreement with much of the general approach although, in his opinion, there was large scope for argument in several of the author's points. A reasonable definition of past service liability was given in § 24 and, quite rightly, the author had discounted such methods of apportionment as that which used the withdrawal benefit as a standard, or used paid-up pensions in insured schemes, or brought future service into the basic calculations as a positive or negative reserve. The two main methods the author had suggested were what could be briefly described as the 'past service liability' method and the modification thereof where any surplus was allotted in proportion to future service liability after first deducting the value of members' future contributions. Although it was not entirely clear how the circumstances of dissolution affected the author's choice between those methods, it seemed he was advocating the modified past service method, i.e. that that which allotted a surplus according to future service liability was usually the more suitable except possibly where the fund was not being replaced or where pensioners had no priority. His own view would be to incline more strongly to the past service method in all cases, subject only to consistency of treatment in any replacement fund (and he would not even necessarily, therefore, rule out automatically taking into account future service reserves, even negative ones, provided the replacement fund did likewise). Apart from that, any method which did not distribute surplus according to past service liability meant that the relative shares, and not only absolute ones, depended on the pace of funding rather than the years actually served with the company, which seemed undesirable in most circumstances.

The author had mentioned in § 35 that there was no harm in considering the convenience of the actuary so long as the interests of members were not violated. Whilst he agreed, he wondered whether it was right to recommend that, although in strict theory a minimum value of members' contributions was the only restraint, in practice and in order to avoid successive approximations one should take that right out of both sides of the equation and split only the balance according to past service liability. It could distort the results quite appreciably except where deficiency or surplus was negligible. On the other hand, there was perhaps scope for saving work in other ways without demanding too much of a compromise with conscience. For example, when there was a replacement fund, it seemed that a lot of work could be saved by doing calculations in groups and giving each member $X\%$ of his past service. X would be clear from the sums and one might be able to avoid individual share calculations altogether as well as avoiding specifically taking into account restraints. Even where there was no replacement fund, there might be scope for the actuary to the dissolution to pass some work on to his colleagues at the life office issuing the annuities by stating, for instance, that, subject to a minimum purchase price of his own contributions, each active member should have a deferred pension equal to $X\%$ of quoted amounts.

Turning to possible actuarial bases, he was again in broad agreement with the author but had a number of questions to ask. Firstly, when was it appropriate not to take inflation into account? Even with an accrual rate fixed in money terms, the fund might have been in the habit of regularly increasing the accrual rate. Secondly, should the inflation taken into account be

salary inflation or price inflation, in either case with or without a promotional scale? In the case where there was no replacement scheme, there was an argument for using price inflation only, the justification being that why should younger members get an added advantage taking into account real increases in their standard of living when such increases had in fact been thwarted. Thirdly, if they allowed for inflation, should they consider increases in pensions in course of payment, and not only current pensions in course of payment but also future pensions when in the course of payment. Fourthly, should interest be added to the members' contributions before imposing the restraint and, if so, at what rate? It could be argued as meaningless to impose a restraint equal to the members' contributions expressed in money terms if such contributions would buy only a 'Mini' when perhaps when they were made they would have bought a 'Maxi'. Fifthly, how could the actuary give a certificate, as envisaged in § 21 of the paper, regarding the adequacy of the fund to meet withdrawal benefits when such adequacy would partly depend on what option a member took? He was thinking particularly of the choice of cash benefit versus deferred benefit and the consequent extent of the need to sell assets. The actuary might place a different value on the asset if it were to be sold than if it were to be retained. To the extent that members would opt for cash, the adequacy would depend on market fluctuations.

Mr P. Basten applauded the author's comments in many sections but confined his own comments to the few details where he differed.

Firstly, in various places in the paper, e.g. §§ 12, 31, 37 and 38, it was suggested that the dissolution clauses would be invoked on the replacement of an existing pension scheme by a new pension scheme. Like the opener, he felt that the use of the dissolution clause should be avoided in those circumstances. One might use the alteration clause if a new scheme were being introduced within the framework of the same pension trust; one might use a transfer clause if it were necessary to transfer the assets to another fund; or, indeed, if there were no specific provisions in the trust deed, it was possible to proceed by obtaining the consents of all the existing beneficiaries. To invoke the dissolution clause in such circumstances seemed unduly ponderous.

'A pension scheme dissolution
Is a tiresome convolution.
For new schemes with less effort spent
Amend, transfer or just consent.'

Secondly, there was the suggestion in § 21 that the ratio of assets to the value of 'vested benefits' should be published periodically. By 'vested benefits' he meant pensions already in course of payment, contingent pensions in respect of pensioners, frozen pensions and the benefits which would be payable to active members if they left service forthwith. He thought the ratio could be very misleading: there was a paper in the Institute Library which was devoted entirely to pointing out how misleading such a figure could be (*Vesting and Termination Provisions in Private Pension Plans*. Professor Carl H. Fischer. University of Michigan, 1970). One could have a situation in which assets exceeded the value of vested benefits but fell short of the combined value of vested and non-vested benefits. Unless the vested benefits had priority on dissolution, which they usually did not, it was unwise to attach significance to the ratio of assets to vested benefits.

'Vested benefits lead astray,
Actuary, guard what you say,
Don't do this sum unless you're sure
No member has a right to more.'

Thirdly, he thought that the actuary should take care to distinguish between his own preconceptions and the provisions of the governing documents. On that account he was uneasy about one or two passages in the paper. There was lurking in §§ 37–41 the suggestion that the

actuary's approach to the apportionment of assets might be conditioned by the circumstances surrounding the dissolution. Unlike the opener, he thought that the suggestion was highly questionable. Furthermore, the author had bestowed upon a section of the pension fund members some fundamental rights which those responsible for drafting pension fund documents generally did not confer.

For example, they were told in § 20 that a minimum benefit of a refund of contributions was an even more fundamental right on the winding up of a fund than that priority should be given to pensioners. The dissolution clauses which he had seen, including Appendix V to the paper, did not seem to support that view.

A search for supporting argument had revealed nothing more than the statement in § 20 that it should be regarded as axiomatic. The author had at least stuck to the motto of his paper—'never give your reasons'. Falstaff would give no man a reason upon compulsion: the author would give no man a reason upon dissolution.

'Will Gilley never tell us why
He thus carves up the pension pie?
Poor pensioners have had a shove,
Contributors now rank above.
I have never seen this written
In a Fund set up in Britain.
So, Actuary, please pay heed
To what is set out in the Deed.
Make an award with care and thought,
You could be challenged in the Court.
I'm sure that Gilley will agree
That's not what we should wish to see.'

Mr H. A. R. Barnett hoped the author would not think him ungenerous when he said of the paper 'a little bit of too late and too little'. He had admitted to 'too little' but, so far as 'too late' was concerned, there had already been a number of dissolutions: how helpful it would have been if the paper had been presented five years earlier. The last two speakers had indicated the desirability of avoiding a dissolution but clearly it was often unavoidable, for example, in the case of a company takeover where a few of the employees were going to be transferred but a large number were going to be made redundant at or before a certain date; there would, he thought, clearly be a risk of unfairness between the two classes if the transferring employees were to be dealt with under the existing rule and the remainder were to have what was left after the application of the transfer rule.

The opener had been concerned about what do do with the surplus but he was concerned about possible deficiencies, particularly after the legislation expected in the next two or three years. After that had taken effect funds would need to provide some sort of preservation. Whether or not the funds had been amended then to provide the preservation, the rights would be there and it seemed to him that a lot of funds were going to have insufficient cash for a time to provide for each in-service member the greater of either his own contributions accumulated at an appropriate rate of interest or the value of the benefits then to be preserved. In § 21 the certificate which Mr Gilley had been suggesting ought to provide 100% for all cases. Clearly it was not going to be immediately possible and he thought that particularly applied to controlled funding schemes which, after providing for those already retired, aimed at providing first for the oldest members. As they went down the age scale, there would be less and less provided and he did not think it was going to be satisfactory. It might be that upon the expected legislation taking effect, it would be necessary for many funds to be immediately topped up and that, in turn, was going to mean that, unless two Government Departments were going to be at loggerheads, it would be necessary for the Inland Revenue to waive any objection they might have had to a single payment into the fund in order to provide what he regarded as a minimum degree of solvency.

Miss B. S. Cairns took up the author's brief reference in Part V of the paper to the situation where a fund was to be apportioned between two participating companies, for example, because of the sale of a subsidiary company which had been participating in the parent company's pension fund. That type of situation, which was becoming increasingly common, raised particular professional as well as technical problems since it was one of the few situations where two or more actuaries might find themselves advising different parties to the same negotiations. It was therefore particularly important to be quite clear as to whom one was advising and what one's responsibilities were. She took the simplest case, of the sale of a subsidiary company by Company *A* to Company *B*, where Company *A* had a pension fund in which the subsidiary company had participated and which was advised by one actuary, Company *B* had a pension fund to which employees of the subsidiary company were to be admitted and which was advised by another actuary, and it was proposed to transfer a sum of money from the Company *A* pension fund to the Company *B* pension fund in respect of employees of the subsidiary, who would thereafter look to the Company *B* fund for benefits in respect of past as well as future service. Past service benefits might be those to which they were entitled under the Company *A* fund or calculated under Company *B* fund rules based on pensionable service in the Company *A* fund. Whether the legal basis for the apportionment of the Company *A* fund was a transfer or a dissolution rule, it was generally clear that the responsibility for calculating the transfer sum rested with the Company *A* actuary, whose advice was directed to the trustees of the Company *A* fund. However, because of the relationship between the various companies concerned, it might be that Company *B* would want to be satisfied that they were being treated fairly and might ask their actuary to advise on that point. Company *A* on the other hand might be particularly anxious that as much of their own fund as possible should be retained for the benefit of employees continuing with the group. In her view, it would be quite inappropriate for the companies to ask the actuaries to agree a figure and she would suggest a procedure on the following lines. First, the Company *A* actuary should calculate what he regarded as a suitable figure. Secondly, he should give the Company *B* actuary an opportunity of commenting on the figure. There might be points which the Company *A* actuary had overlooked because of his primary concern for the interests of his client. It was important to stress that the Company *B* actuary should not take into account in his consideration the funding basis of the Company *B* pension fund, which was quite irrelevant. Thirdly, the Company *A* actuary might wish to revise his figure in the light of the other actuary's comments but he would be under no obligation to do so. Fourthly, if the Company *B* actuary felt that the final figure was grossly unjust, he should report that to his client. If he merely felt that he would have recommended a rather different figure but that the final figure was within the range he would consider reasonable, then he should advise his client that the figure was reasonable. The problem then arose as to what action should be taken if there was a shortfall between the transfer sum and the sum needed in the Company *B* pension fund, either to provide past service benefits or to cover net liability including future service. It could be due to a difference in the valuation bases of the two funds or to a difference in the contribution rates. That was a matter for Company *B* and might well affect the terms on which Company *B* was prepared to purchase the subsidiary from Company *A*. If possible, therefore, the calculation of the transfer sum and of the shortfall, if any, should be completed before the terms of sale were agreed, or at least provision should be made in the sale agreement for anything needed by the Company *B* pension fund. Unfortunately in practice sale agreements were often completed without any thought being given to the funding and its financial repercussions.

Mr R. C. B. Lane agreed that far too little attention had been paid over the years to the problem of dissolution. As a result they had very largely been groping round for some sort of guiding principle by which to tackle the problem: he would begin by trying to formalize the problem.

Upon dissolution a somewhat typical situation came about: first, a change had taken place in the interests of the beneficiaries: secondly, the set of beneficiaries, which was previously an open set with people coming and going, had become closed. It might not all happen at the same

instant of time and, in practice, all sorts of problems arose. He had even had experience of one case when the precise date was uncertain. Certainly, when dissolution was a real issue, the set of beneficiaries was a closed set and, normally, they all had definite interests. Those interests had to be ascertained and normally were vested—that is to say, there was normally a right to a payment vested in the individual and, usually, it would pass to the man's estate in the event of his dying between the date of dissolution and the actual date of distribution. That in itself could sometimes raise a number of petty issues such as what should be done with pensioners.

First of all, the actuary must ascertain those provisions of the fund which related to dissolution. It was not up to him to say 'This is unfair; I could do it better; it is a pity they were not written some other way.' If the fund included constraints in those circumstances then they must be honoured. Secondly, the actuary must then have regard to what might have been. One had to consider what might have happened if the fund had gone on but there were again a lot of difficulties: the calculations must be done in the light of the facts up to and at the point of dissolution. Finally, the actuary was working as an expert whose actions and opinions would not be disturbed unless there was fraud or improper motive or specific mistake.

He thought that was a reasonable attempt to formalize the position that had risen and the way it must be tackled. He would not like to claim that it was exhaustive, but he did not think it was too far away as an attempt to introduce some element of general coherence. It still left room, of course, for a great deal of discussion and for development of detail. He thought that, to a very large extent, was what the paper was about.

When a dissolution had become a fact, or was very much on the table as a probability, then constitutional changes in the fund, if possible, became of doubtful propriety. Because there had been an enormous change, which had taken place or was to be expected, and because certain things were to become definite, it was then very difficult indeed to make changes without taking something away from someone: if something were taken from person A, something would necessarily be given to person X: if something were given to person Z, something would necessarily be taken from person B. The essential problem was not working out amounts people should have but, rather, working out shares of something of known and finite size. Though it might be very large, that was the problem.

Turning to the phrase 'might have been', it had also to be appreciated it could not be: there had been an abrupt change that must be acknowledged. One had to have regard to what might have been, because that was the only way in which to discriminate between members, but one could not make the same sort of assumptions as in the past. Withdrawal from a closed set, that is to say those left in the dissolution, raised a difficulty. The benefits were vested. Normally the person was entitled and withdrawal did not arise. To introduce withdrawal rates into a valuation basis for a dissolution, and to ascertain what those rates should be, was to him a very daunting problem indeed. He did not claim one might not do it in formal terms but he did not think it was possible ever to give them any real true-life meaning.

He was unable to see any reason why the actuarial basis on dissolution should bear any relation at all to the basis on which the fund had been operating. The functions of the two bases were quite different. It had been convenient in the past to value the fund in one way; but that had become irrelevant because, even if the fund were kept going in some way as a closed fund, the management problem would be utterly different from what it was before.

In a typical salary-service pension scheme, one point was very important. Service actually served, the salary actually attained and the contributions actually paid were facts: they could be ascertained by looking at the records and the accounts. They had an inherently higher standing in one's policy deliberations than future service, that was not but might have been served, and future salary increments, that were not but might have been granted. In a dissolution, he would therefore say the part attributable to accrued service and actual salaries should be separated from all else. He said that not just as a matter of convenience but as a matter of fundamental principle. It should be separated from the part attributable to a possible future and should be rated as of much greater intrinsic importance in settling the dissolution shares. He thought one had to say that because there was a reality behind the fund member's history.

There was only a certain amount of prospective hope about a member's future assuming he had stayed in the fund and there had not been an upheaval leading to the fund being wound up.

That was the general principle but its application in different cases could vary very widely indeed. What seemed to him of the greatest importance was the adequacy of the fund: how much money there was to divide: that really was the core of the problem. It was, after all, what the beneficiaries were looking at. It was equally what the actuary, with his special knowledge, was attempting to divide for the beneficiaries. There was the fund: what share should each person have—the size of the fund was the really dominant thing.

With insufficient funds, to relate the dissolution to life office rates was probably the best that could be done. He was using life office rates against a background of the then current circumstances when rates of interest were historically very high and deferred annuities could be bought so cheaply. If there were insufficient money, then one must provide something of a bedrock value. That would often be the accrued pension for each individual and the value required to buy an annuity from a reputable office was a pretty bedrock estimate of the worth of the share. One should start from that point. There might have to be priorities; but one would just have to share the fund out among the beneficiaries and it did seem impossible to do much better. If there were more funds available, it might be perfectly reasonable to scale up the bedrock values. If there were 10% above what was necessary to buy the accrued pension, one might quite reasonably give everyone 10% extra.

If there were half as much money again, or even a quarter, then there was apt to be a difficulty: it was no longer a question of membership of a non-participating fund but of a participating fund calling for it to be meted out, using well-established techniques, to preserve some sort of reasonable equity between one generation and one member and another. In that position, the life office basis would not be suitable and one should turn to an actuarial valuation characterized almost certainly by being worked on a lower rate of interest or being worked on a rate of interest with allowance for increasing benefits coming out in the nature of a bonus. It was not a question of estimating by how much salaries or prices would rise: that had become quite irrelevant. What was relevant was how much money there was available to spread among the members and what the results might have been if the circumstances had been different—having had regard for what might have been but allowing also for the change to a closed membership.

That sort of technique would take one a long way but, as one got more and more in surplus when judged by those standards, then it was doubtful whether even that would be sufficient. At that stage only it began to be reasonable to go back and allot some of the money to ideas one might have had about the future, about what might have happened if contributions had continued, and about what might have happened if further service had accrued. He thought that must be admitted because they would be getting to a stage when even a division on a participating accrued basis might lead to quite curious results when looked at by rational men. One was working for the beneficiaries, as a body and individually, and it was fair and reasonable to ask 'If I were he, and knew as much as I do, would I object?' It was only when one got to a situation and a solution where, having regard to all the circumstances, one could say 'It seems to be pretty fair; if I were one of them, I would accept it' that one could begin to consider one's job really had been done.

Mr L. W. G. Tutt, F.F.A. said that one of the functions of actuaries was surely to ensure that the effectiveness of group pension schemes was maintained, which meant that they should continue to be properly geared to the society in which they operated. Society apparently envisaged some enlargement of industrial consortia possibly involving rationalization of pension schemes within them, as well as an increasing trend towards mobility of labour. Within such a society the progress of private pension provisions conceivably could be partially inhibited if overall effectiveness were not to be considered both from the aspect of the financial terms on which pensions accrued on the one hand, and closure and withdrawal terms on the other. Thus the subject matter of the author's paper seemed to him to be one of considerable importance.

One of the features of the economy had been an element of restrained inflation. To the extent

that inflation had been accompanied by an increased true yield on the fund, an employer providing a continuing scheme had not suffered and, for final salary schemes, members' pensions in deferment had not suffered to the extent which salaries had kept pace with inflation. On closure or withdrawal the position was not invariably quite so clear. Indeed, whilst one must sympathize with the author's conclusion that the formulation of an objective statutory definition of a 'sound' rate of funding was unlikely and would in any case be unlikely to serve any useful purpose, the question did arise as to whether the pace of funding should give general regard to the provision of maintained value paid-up pensions as permissible under the Finance Act, 1970. Of course, there was no universal answer, the individual circumstances of individual schemes calling for individual attention. However, the general use as a standard procedure of the straight discontinuance method of funding required caution bearing in mind employer/employee equity and the desirable effectiveness of schemes.

If one gave particular regard to life office schemes, one was faced with a very wide range of market choice. A contract transacted through a subsidiary company on a fee-paying basis had the attribute that it could cut through certain problems which might otherwise arise on dissolution, for the method of operation could enable a withdrawing participant to receive a full share of its assets based on market values at the time of withdrawal, perhaps subject to a small realization charge. With a participating scheme pooled with the remainder of the office's business, the question arose as to whether the recompense for contributions to inner reserves including investment reserves could validly be regarded as almost having been completely granted by the security of the life office which the scheme had enjoyed during its currency.

However, whilst some dissolution problems might be to some extent theoretically simplified under a managed fund approach, asset market values might become depressed at the time of dissolution and there were circumstances when pooled participating, or indeed non-participating contracts, could provide a higher degree of pensions security on a closure and hence enhanced scheme effectiveness. Doubtless they had all been faced with the thought as to whether the relative importance of the aspect of dissolution, viewed respectively from a group pensions and individual assurance basis, raised the question of the appropriateness of overall pooling within one fund, or whether the differing characteristics of the business might suggest a separate class of business for group pension schemes similar to the different classes required under the 1968 Regulations for general insurance, and taking the option of having a separation of investments. Such a more traditional with-profits approach possibly resulting in a higher degree of stability in pensions security on dissolution might mitigate against a potential strong drift to index-linked subsidiary company-managed funds when a temporary economic background might otherwise result in some movement in that direction.

The author had referred to an apportionment on partial dissolution by reference to net liabilities. Still considering the life office aspect, segregation of scheme business on a traditional basis possibly could facilitate modifications in methods of determining net liabilities. An equilibrium between the supply and demand of real financial resources might suggest some monetary stability but, when there was superimposed as a relevant factor the matter of future values depending on inflation of imprecise extent, stability of capital values and interest rates was much less certain. He then asked whether valuation methods in which complete economic stability was implied and bonus maintenance was given a very high priority were, or were not, more desirable to a policy of fluctuating rates of surplus distribution when participating group pensions business was under consideration from both the aspects of scheme continuation and scheme dissolution.

Pensions business required equitable participation from the dual aspects of amount and timing. Segregation of traditional types of scheme business suggested that pensions business could validly be regarded as distinct without suggesting, as did subsidiary company index-linked business, that virtually no protection is required from the building up of inner reserves. Moreover, it could possibly tend to reduce the volatility of closure values as could occur under managed funds and that feature might be one with which life offices could wish to be associated from the viewpoint of their providing overall scheme effectiveness.

Miss P. E. Merriman was fascinated by the large number of axioms and principles set out in the early pages of the paper. In § 23 there was the statement 'When an employee's service comes to an end, the amount of benefit payable to him from his employer's pension fund ought not to depend upon anyone using judgment.' It appeared to be an attack on the whole principle of discretionary benefits, and the author seemed to want to put back the clock to a time before the introduction of the New Code, which allowed great flexibility in the provision of benefits within the approvable limits. However, the statement she had quoted was toned down later in the paragraph, where there was the suggestion that only the minimum amount of an employee's benefit must be beyond doubt, and the possibility of augmentation was envisaged in the last sentence of § 23.

In § 23 also, they met a character called the 'numerate layman'. Given a comprehensive book of rules the numerate layman would immediately be able to calculate the benefit to which he would be entitled from his pension scheme in every conceivable circumstance, his powers of comprehension and numeracy being such that he would get the right answer every time. Judging by her own experience, that hypothetical character was extremely rare. She could therefore see little point in letting him exert a significant influence on the design of a pension scheme or on the content of its rules. It was, of course, important that there should be channels of communication available to pension fund members, so that they could inquire about prospective benefits, but such inquiries were usually few and far between until employees approached retirement. It would normally be a matter for arrangement between the pension fund secretary and the actuary or insurers to what extent the secretary would work on tables supplied to him, and to what extent he would refer individual inquiries for actuarial calculation. It was simply a matter of convenience and frequency of inquiries.

She then turned to the concept discussed in § 4 that membership of a pension scheme was essentially a 'bargain between employer and employee'. To proceed on that basis was to ignore the trust fund as a legal entity, and would all too clearly lead to what the author described as 'seeds of dissension between lawyers and actuaries'. While in many ways she sympathized with his wish to throw off the shackles of the law and to proceed by actuarial grace alone, the fact remained that once a trust fund had been set up, even the actuary was subject to the laws governing that trust, and the trust itself could be modified only to the extent provided therein. She did not like his suggestion in § 10 that a dubious alteration could be pushed through in the hope that no successful challenge could be mounted against it. She asked whether it would not be wiser in cases of doubt to take individual consents from the members.

From the point of view of the individual members of a pension fund, therefore, the law acted as a protection. It entered, one might say, that grace might abound. The rights of a member of a pension fund were governed neither by an original bargain between employee and employer, nor by any deemed rights attaching to the contributions paid, but simply by the trust deed and rules of the fund. That point could not be stressed too much, and the Inland Revenue insisted that it be made clear to every employee before he joined a recognized trust fund. The author was right to stress the importance of the powers of alteration, but it was also important to bear in mind that what from his point of view was 'inadequate' might from the member's point of view be a very valuable safeguard of rights. There was little advantage in being a member of a well-funded pension scheme if one's rights could be slashed at the stroke of a pen. The drafters of 'no prejudice' alteration clauses had clearly had that in mind. Moreover, if the trustees of a pension fund feared that the protection afforded to the members by the present alteration clause were inadequate, they would be wise to take immediate steps to strengthen it. It was particularly important if there were the possibility of a takeover.

The author chafed at the orthodox rules of law, but he was all too ready to introduce a new law of his own devising. There was the statement in § 29: 'It is an underlying principle that the member's own contributions are the minimum that may be applied for his benefit, and that any surplus or deficiency is apportioned primarily by reference to the balance of liabilities.' Here again he was trying to put the clock back to the days of the old 'savings bank' conception of a pension fund. Actuaries had for many years struggled to explain to employers that, once their

contributions had been paid into a pension fund, they could no longer be identified in relation to individual employees, and what applied to the employers contributions applied equally to employees' contributions. Once the contributions had been paid into a pension fund, the employee's rights were limited to what the rules provided. They had traditionally included the right to a return of contributions on withdrawal, but the forthcoming introduction of compulsory preservation would take away that right in many cases, and the right to a preserved pension would normally be defined in relation to accrued benefits, rather than to contributions paid. Moreover, since a member of a non-contributory pension fund looked on the contributions that he did not have to pay as an element of his remuneration, it seemed inappropriate to adopt a dissolution method that drew a big distinction between employees' and employers' contributions.

Mr L. Bromley (a visitor) referred to the motto with which the author had wisely prefaced his paper that they should not give their reasons for making the judgments which they came to. That was undoubtedly the caution which one would give to an actuary in practice but he hoped there would never be a tendency simply to avoid giving reasons in order to avoid the chance of being found wrong.

Secondly, he felt there was a very real case to be made for considering transfer provisions separately from dissolution provisions. As Mr Lane had said, on dissolution there was a very real change in rights. On transfer it might not be so, but if the provisions of the fund did not adequately provide then there could be a very real difficulty.

Thirdly, he felt that the author had drawn, perhaps a little unfairly, a distinction between the lawyer's and the actuary's approach. It did not seem to him that in fact there was any real difference, because if the scheme set out in clear terms what the rights were then those were the rights to which effect had got to be given. What one was really seeking to do in dissolution provisions was to achieve a balance between the clarity and precision of stated rights on the one hand and, on the other, the unreasonable restraint on achieving fairness which the statement of precise rights might cause in circumstances perhaps not fully anticipated. The lawyer's reaction to unreasonable restraints in those circumstances—particularly when he could not anticipate them—was to give a discretion to the actuary to do what was right and fair. It struck him that sufficient attention had not been given in the past to dissolution provisions. Certainly lawyers might have thought they were never likely to become operative anyway and, since they came right at the end of the document, perhaps they never quite got the attention they deserved. However, they were provisions of major importance in achieving a balance between the statement of rights to have effect in the circumstances of a dissolution on the one hand and the preservation of an adequate discretion to do what was right and fair in those circumstances on the other. Such provisions needed very careful drafting; at some stage, that no doubt would be the lawyer's job instructed, of course, by actuaries.

Mr F. R. Atkins said that many speakers had extolled the virtues of trying to avoid dissolution of the fund by one means or another and there was, of course, the alternative of continuing as a closed fund rather than an actual dissolution. That assumed that the company was continuing. Something which would involve the profession far more in the future was partial dissolution, in other words the sale or purchase of a subsidiary company by another company outside the group. The author had finished his paper with one or two considerations of the sort of rules which he would like to see in the fund regarding dissolution, and he thought it was an important area to be considered. Actuaries ought to take a very hard look at each pension fund as they came to it, reviewing its rules in that respect. When he first started out to train as an actuary, his senior partner had said to him: 'Never mind what the rules of the fund are as regarding the benefits; what does it say about winding up?' and that piece of advice had been becoming more and more true with every day that passed. He thought that actuaries really ought to think hard as to how they would like to see the future go.

On his second point on partial dissolution of a fund, with Company *A* and Company *B*, it

would seem a very simple idea that Company *A* should pass over some of the fund to Company *B*. He felt that the author's motto was really directed in that area. The actuary could read the rules and make up his mind as to how he thought they should be interpreted, and he felt the author was saying 'Do that, and go ahead and do the calculations.' Their colleagues in the legal profession were obviously involved, as had been pointed out, in dealing with trust funds. If an actuary were instructed by his client that he take legal opinion on that point, and counsel took some twenty pages to reach a decision, and then found that Company *B*'s actuary had a different view, they would be getting into the awful situation of ending up possibly in the courts. He did not really know what the answer was but he thought the author's motto was a good starting-point. A previous speaker had mentioned some collaboration between the actuarial profession and the legal profession. The words 'actuarial interest' occurred quite frequently in rules, and perhaps they should ask their legal colleagues what it meant. On the other hand, perhaps their legal colleagues should leave it to the actuary to decide what that interest was.

Mr K. G. Smith felt that the paper touched on so many interesting and fundamental problems that it would be impracticable for him to give a fair or balanced review. However, as one who had officiated at the funerals of numerous pension schemes, but not in an actuarial capacity, perhaps his experience had made him more conscious of the human, and less of the actuarial, problems than most readers.

Punch's famous advice to those about to get married was 'don't'. No doubt the author's advice, where any alternative was available, would be the same to those about to dissolve a pension fund. The sort of alternative which could be adopted, in the case of a larger merger or nationalization, was to offer transfer to a new scheme on an alternative basis of either 'former benefits and contributions' or a credit of service (not necessarily identical with past service) on entry to new scheme benefits and contributions. Admittedly, the retention of a large proportion of members on obsolete contributions and benefits could be an embarrassment but, if the new scheme were more generous (as was often the case), it was unlikely and, from an industrial relations viewpoint, the option of a retention of the previous benefits and contributions (albeit within the new scheme) took all the sting out of any suggestion that existing rights were being prejudiced. On that basis, a subsequent transfer of assets to the trustees of the new scheme could usually be effected without undue difficulty.

Secondly, §§ 14 to 18 of the paper, dealing with the volume of assets and the rate of funding, raised some important questions of principle which he thought they must as a profession face up to before their thunder was stolen by others such as accountants, auditors or Government Departments. It seemed to him clearly immoral that an employer should give his employees an expectation of pension benefits which in the event of dissolution of his pension fund, e.g. on a merger or liquidation, could not be met at least in respect of a reasonable definition of accrued benefit. The author's suggestion that there might be a statutory requirement that the employer's outlay each year should tend to raise the ratio of the value of the assets to the value of the expected benefits for service already rendered was not by any means a perfect solution but it would go a long way to improve matters. Once employers were compelled to disclose that their pension benefits were funded to the extent of only, say, 75p in the £ of accrued rights, both industrial relations pressure and their own sense of financial propriety would be likely to lead to regular progress and improvement. He therefore warmly supported the suggestion in § 21 that every three or five years (presumably concurrently with a valuation by the actuaries or assurers) a certificate of the degree of funding on the basis of benefits payable on withdrawal should be given, even though, as the author himself had pointed out and demonstrated very convincingly in his numerical tables, withdrawal benefits which did not incorporate any allowance for future salary increase and inflation were themselves a poor measure of the accrued rights of a member of a final salary scheme.

In view of the obvious need for the Government to require certified financial backing for the benefits of those who would be exempted from participation in the proposed State Reserve Scheme, he thought that the profession should give urgent consideration to the rôle which the

actuary should play in determining or defining degrees of funding and put forward the profession's own proposals before they were faced with ideas from other sources which might prejudice their consideration of the issues.

Mr N. Williams took issue on the draft rules in Appendix V. There was no mention of minimum benefit. He could see from the discussion that that would be very difficult to define but, if it could go in, it would reduce the range of possibilities. There were methods for valuing to the advantage of the older members or to the advantage of the younger members, but if there was a fairly low minimum benefit it would be a good starting-point.

Mr M. H. Winters thought the answers to the questions under consideration might be found by looking at how the difficulties had arisen, firstly, at the wording of the dissolution rule as it stood and as it should be, and secondly, at the relationship between the actuary and the employer. In the dissolution rule, he would favour giving pensioners priority, and then he would give the next priority to in-service members' contributions, because the members frequently had to pay precise contributions whereas the employer had the power to vary his contributions from time to time. The balance of the assets represented contributions from the company, which took him to the question of the pace of funding. It was at the last sentence of § 53 that he found he differed from the author because he realized how few funds with which he was concerned had a fixed rate of contribution for the employer. Employers generally paid a rate of contribution that was variable from time to time, and he thought that that type of arrangement was more satisfactory owing to changing investment terms and salary and pension escalation rates.

When a new client sought advice as to the level of contribution required, he would put it to the employer that there was a high measure of moral priority that at any time the funds in hand should be of equivalent value to the pensions which had accrued on a non-profit basis, i.e. that in the event of dissolution the money in the hands of the trustees should be sufficient to provide the accrued, and not just the vested, pensions. He would then tell him that the minimum that he should pay in the first year could be assessed accurately but it was for the employer to decide how quickly he wanted to make provision for the effect of increases in accrued pensions in relation to salary increases given later. He had found that, when approached in that way, employers were only too happy to make fairly substantial advance provision for salary increases. He did not put it as a responsibility of the actuary to say that they were going to make advance provision for 5% or 7% salary increases: it was a joint problem and the solutions, he had found, had been reached jointly.

With that approach, the problems arising on a dissolution became much simpler because the members' contributions had some priority, and the accrued rights on a non-participating basis also had a priority. The additional contributions paid by the employer over and above that cost had already been discussed with him and were there to meet the cost of escalation of salaries and possibly of pensions in the course of payment as well. That gave the actuary and the trustees quite a clear lead as to what should be done on dissolution. It could happen that the fund could pay with escalation of 2%, for example, and policies could be purchased to have that effect. It seemed to him there was clear responsibility on the trustees to deal with the matter in that way.

Mr R. W. Abbott, in closing the discussion, noted that, for many years, occupational pension schemes had undertaken a peripheral role in the drama of Social Security but, if the Government policy as announced in the White Paper *Strategy for Pensions* (Cmnd. 4755) took effect, private pension schemes would occupy the centre of the stage. It was a much more demanding rôle than that they had hitherto known and for how long they would be permitted to play that part depended on how well they performed. The State Pension Scheme would be—like the poor and, he supposed, because of the poor—always with them. By contrast, individual pension schemes might wax and wane. Their waxing and the problems associated therewith had often been

discussed. The Institute had not previously had a paper on the problems associated with their waning, whether that waning was voluntary or involuntary, induced or natural, but only four weeks previously, there had been a discussion on the same subject at a meeting of the Students' Society. It seemed to show that for actuaries the future was always present and intimations of mortality were never far away.

The paper was a kind of examination paper with a model solution provided in the middle. The candidates who had attempted to answer the questions in the hall had provided a variety of answers and, under the guise of providing answers, had managed to ask a number of further questions. In that situation the closer was, he supposed, a kind of examiner of the candidates. But whilst it was regarded as perfectly proper to expect a candidate to answer an examination question in a limited time, it was unusual to expect the examiner to award instant marks. He had therefore to content himself with putting forward conclusions he had reached in reading the paper and in listening to the discussion.

The first question to consider was in what circumstances the dissolution of a pension fund should be recommended. He confessed that for him an actuary who recommended dissolution as a first rather than as a last resort was like a surgeon who reached for his knife at the first pretext. Mr Smith had given them a number of possible alternatives to dissolution and Mr Basten had listed others. Mr Bromley, who was a very welcome guest from another profession, had suggested still others. With all those alternatives available he preferred to leave dissolution as a last expedient. When a fund was dissolved, rights were created which were likely to differ greatly from those the members were expecting from a continuing fund. Mr Lane had spoken cogently on that aspect of the matter. The rights might be less or more advantageous but it was certain that they were not what was intended when the fund was established. All this was emphasized in the very first sentence of the paper.

Many of the detailed calculations which an actuary made were hidden from the public gaze. That was not true of the calculations he made of members' rights on the dissolution of a pension fund and therefore such calculations were very much more open to critical examination. A quite remarkable number of speakers had capped the quotation that appeared at the head of the paper. He quoted what Charles I said in a letter to Lord Wentworth: 'Never make a defence or apology before you be accused.' One might observe in parenthesis that Charles I was not in favour of dissolution. That was a philosophy that the author evidently believed in to judge from his opening quotation. It seemed to the closer that their aim should be to evolve a method of dissolution that was likely to require neither defence nor apology.

Mr Lane had directed their mind to some fundamental principles which the actuary needed to bear in mind in a dissolution. However, he thought Mr Lane was being unduly modest in suggesting the matters had not been brought to their notice before: Mr Lane's participation in the debate reminded him that 23 years previously Mr Lane had presented a paper to the Institute on the dissolution of a Friendly Society (*The Dissolution of a Superannuation Society*, *J.I.A.* 1949, **75**, 39). He recalled the discussion on that paper with some nostalgia: it was the first Institute meeting at which he had dared to speak and he found himself wanting to express the same principles as he expressed then. That, he supposed, indicated only that in the last 23 years he had learned nothing and forgotten nothing. On that occasion he emphasized that a proposed method of dissolution would be judged at the end of the day by the degree of its acceptability by the members concerned. Granted, as Miss Merriman had said, that members were not all numerate laymen but, if their method of dissolution provoked criticism and if members found it difficult, perhaps impossible, to accept the actuary's judgment then, although they were themselves the expert practitioners and their clients were the lay clients, he would think it possible that the actuary might be mistaken.

It was tempting to argue, as the author did in § 31, that the circumstances surrounding dissolution ought to be taken into account when the assets were divided. The opener agreed with the author that, if a replacement fund were being established, one might choose a different method of dissolution than otherwise. He did not think it was permissible to determine the method of division of the assets according to the aims of the employer and according to

whether or not a replacement fund were being established. If one embarked on a dissolution, one could not, in his view, have regard to other than the interests of the members themselves. The wishes of the employer were irrelevant. In that respect Mr Abbott agreed with Mr Basten and Miss Merriman and disagreed with the author.

Believing, as he did, that the test of acceptability was a primary one, he doubted whether a method which awarded an active member a deferred annuity based on a general age and promotion salary scale would be understandable or acceptable to him. He asked whether a salary scale which, after all, was designed to indicate the progression of average salaries by age could ever be appropriate to the circumstances of an individual member. There would also be considerable difficulty if the dissolution annuity were less than the preserved pension a member might receive on withdrawal from service.

That led him to a more substantial point. Mr Barnett had reminded them of the revolution in their thinking that *Strategy for Pensions* must involve. The presence of Dame Mildred Riddlesdell, Second Permanent Secretary of the Department of Health and Social Security, as an official and very welcome guest, was symbolic of the fact that, after 1975, the Government could not be indifferent to the effect the dissolution of a pension fund might have on an employee's benefit expectations. Its concern would not be limited to those schemes that chose to be recognized. Whilst the Government did not apparently intend to prescribe any kind of actuarial control for pension schemes generally, it would be imposing on all schemes a preserved pension obligation. As Mr Smith had implied, to fulfil that obligation in all circumstances meant for an individual pension scheme a minimum funding rate. It led to the concept of a statutory solvency test for pension schemes. That went much further than the suggestion in § 21 of the paper. Mr Smith had supported the suggestion but Mr Basten and Mr Barnett found some trouble in dealing with the author's suggestions in that section. Mr Abbott's own concern was that the Government's strategy should not fail simply because of the financial failure of one or two pension funds.

Mr Lane had followed the author in believing that the real problems arose when the assets were more than sufficient to meet accrued benefits, and the reverse case had been dealt with fairly summarily in § 25. It would be inconvenient, to say the least, if after 1975 members were to get less than their accrued benefits in a dissolution. If, however, the members could be provided with their accrued rights—however the actuary might choose to define them—was he then free to recommend the return of the balance of the fund to the employer?

The opener had referred to the fact that under the New Code it would be possible to make a return to the employer as a means of evading the difficult problem of dividing surplus assets. Just as the closer would regard the dissolution of a fund as a last expedient, so he would not wish to recommend the return of any part of the fund to the employer whilst any other course was open to the trustees.

On the winding-up rule, to which one or two members had referred, it was true that adequate dissolution rights were easier to achieve if the dissolution gave wide powers to the actuary, and he would wish to take advantage of the author's invitation to alter the dissolution rule if otherwise he could not do what he wanted to do. That might perhaps offend Miss Merriman's attachment to the rule of law, and it also might offend Mr Lane who was quite properly concerned about constitutional propriety. He wanted to alter the rule only in the interests of the member and he hoped that Mr Bromley would help him since he would try to demonstrate to him that he was wishing to alter the rule in order to achieve a greater degree of equity than otherwise. It meant, of course, that he was very much attracted to the draft rule appended to the paper. A similar, though somewhat shorter rule, appeared in a little-known and long-forgotten paper presented to the Students' Society in 1949 (*The Consulting Actuary and Pension Funds*, *J.S.S.* 1949, **9**, 221). Mr Abbott hoped it would not be thought immodest of him to say that he had a preference for it over the author's version.

Mr Atkins had said that partial dissolutions had sometimes provided more intractable problems than full dissolutions, particularly amongst actuaries and lawyers. It was unfortunate when the actuary acting for a fund transferring assets found himself in conflict with the actuary

acting for a fund receiving those assets. Such conflicts did not enhance the reputation of the profession and if they could be avoided by a procedure such as Miss Cairns had suggested much good would ensue. One could not think that all those matters could be settled by the actuaries concerned before the sale price of a subsidiary were settled and that counsel must, he thought, remain a counsel of perfection.

Running through the debate had been the theme that they were living in a new world—a world where take-overs, amalgamations and rationalizations could greatly affect and perhaps destroy employees' benefit expectations. It was a problem that none of them concerned with occupational pension schemes could afford to ignore or evade. Ultimately, the adequacy of the dissolution benefits members received would, as Mr Lane had reminded them, depend on the adequacy of the fund available for apportionment. In its turn the adequacy of the fund would depend on the adequacy of the contribution rates which the members and the employer paid. One of the services the paper could therefore do was to persuade them, if they needed any persuading, that adequate contribution rates were essential to the fulfilment of the Government's strategy. In view of the poetry they had heard during the discussion, he was reminded of the second of the poems in Mr T. S. Eliot's *Four Quartets*. The moral of their discussion was perhaps contained in the final line of that poem which was simply 'In my end is my beginning.'

The President (Mr R. S. Skerman), in proposing a vote of thanks to the author, said that, although the dissolution of a pension fund was a comparatively rare event, an examination such as that contained in the paper of the problems that could arise in the event of dissolution was, as the discussion had brought out, valuable on two counts. First there was the value of the investigation for its own sake as throwing light on the problems of equity which arose, whether there was a surplus or a deficiency, when sharing a fund between the members having regard to the different circumstances in which a dissolution could arise. It was often salutary to look at what happened if an arrangement such as a pension fund came to a sudden halt because it was a good indication of whether it had been running properly. Secondly, the examination threw light on the possible consequences for members of belonging to a fund whose assets were insufficient to meet liabilities. The author had shown in § 17 that it would be most undesirable for a funding rate to be statutorily laid down which was so stringent as to deter employers from improving an existing scheme or starting a new one. On the other hand, they had to appreciate that if a scheme were to be recognized as an alternative to the proposed State Reserve Scheme it was important that it should provide adequate security for the benefits expected. It was therefore important to examine the possible consequences in the event of a dissolution. Such an examination was helpful in arriving at a suitable definition of an adequate standard of funding and, as Mr Smith had said, the profession should prepare itself to participate actively in the discussions which it seemed must take place in the fairly near future on that subject. The paper had provided a valuable basis for the examination of all those problems.

The author, in reply, acknowledged the generous way in which the paper had been received. He made it clear that, when he suggested the alteration of trust deeds and rules, he was speaking only of using the powers which the trust deeds and rules already had. He was not suggesting that anyone played ducks and drakes.

Giving reasons could be the high road to disaster. Had the actuary said 'In my professional opinion, backed by my professional integrity, this is what I think you should have' his client would normally have been satisfied. There was one dissolution where the rules were very stringent and he had no option but to share out the fund in the way he did. The members did not like it, and said he ought not to have done it that way but a different way. He received a telephone call from his client asking him to go up to the back of beyond and demonstrate himself so that the client could say 'This is the actuary; look at him; he lives and breathes' because if he did not do so his client was going to have a strike on his hands. He went, talked to the members and gave them a reason but they were not convinced. So he suggested that if they did not like it they should go next door and have their own share-out. That was the end of

it because, if some members got more, other members necessarily got less. The interests of the members were not identical.

They had heard talk about the interests of the members *vis-à-vis* the interests of the employer. All that could be done was to give some members more and others less. It might be that one fund was succeeded by another. If the method of apportionment was such as to deal very generously with members on the point of retirement very much less would be given to the younger members. They were not necessarily acting against the interests of the members as a whole if they adopted a different method of apportionment which gave less to the older members and more to the younger members. It might well be that that was the only way in which they could protect the younger members against the possibility that the employer might be disinclined to put his hand in his pocket once again.

The author subsequently supplemented his oral reply to the discussion by the following written remarks:

I heartily agree with all those speakers who suggested that a dissolution was a last resort. The paper was written on the footing that dissolution had already been decided upon as the appropriate course of action.

The foundation of my thought is contained in the penultimate sentence of § 4. However much I may deplore the provisions of a particular trust deed and rules, I have neither the power nor the desire to flout them. They alone determine the actuary's scope for an apportionment of the available assets between those entitled to them in the way which is most appropriate to the circumstances prevailing at the time when dissolution takes place. If it appears to the actuary that a dissolution rule is unfair in its operation he will, in my opinion, be remiss if he does not draw attention to what he considers to be its defects. Having done so, it is for others to exercise any power they may have under the trust deed and rules to make any alterations which may commend themselves in the light of his views. The wishes of an employer are not a relevant factor but his intentions in relation to the participants may be. Recognition of this distinction should, I think, put some of the criticism in perspective.

Objections to the principle enshrined in the quotation at the beginning of the paper surprised me. If you are giving advice, it is incumbent upon you to give your reasons. Only thus can your client understand what is to be achieved on his behalf and the way in which it is to be done. Indeed, the process of discussion can be helpful to the adviser because it may bring to light factors of which he was not aware and which might cause him to modify his advice. An award, however, is not advice. To give reasons for an award of shares in available assets can only generate resentment amongst those whose shares have been downgraded for those reasons. The consequences may be incalculable. An award ought to be the last word; the actuary should take corresponding care to ensure that he has brought into account all the factors which, in his judgment, are relevant, to the extent to which he thinks that they are relevant, but he will do his client no good if he publicizes his view.

I do not accept Miss Merriman's interpretation of what I wrote. I can only hope that those who take up the paper with an open mind and read it carefully will find her strictures upon me to be unwarrantable.

Mr Lane gave great weight to relevant factors of known amount such as age, past service and salary at dissolution. I agree that full account must be taken of the known factors. Where, however, a fund has been financed with an allowance for the effect of future salary increases, the available assets will probably be more than sufficient to provide accrued benefits disregarding the possibility of future changes. It would, in my view, be quixotic to distribute the resulting excess of assets by a *pro rata* uplift of those benefits. I am therefore happy to have had the support of Mr Winters in thinking that an allowance for future salary rises in one way or another is justifiable. I cannot accept an argument that no allowance should be made for future changes because the future is uncertain. Surely some allowance must be made for the probable course of events.

There is a danger of trying to make the principle which I discussed in § 21 a too precise matter. My sole objective was to provide some criterion which would enable the members of a continuing fund to see whether the security for their benefits was increasing sufficiently rapidly as the years went by. Many employees would suffer from a statutory requirement for immediate, or even rapid, funding of pension promises if its effect were to inhibit employers from improving their schemes to the fullest extent which could be financed given continuance of the business. It must, however, be recognized that businesses are not immortal and it must be a matter for concern to the members that if a scheme is brought to a conclusion their benefits may be less than they might have hoped. I accept that my criterion is no more than a broad indication. If, however, the most generous benefit available to the member on leaving service at the time the calculation were made was of objective amount and not based on, say, actuarial interest, a broad indication of the security level could normally be given; a more precise measure might well be impractical of attainment.

I must protest to Mr Basten that I never said that I held the view that priority for pensioners was axiomatic. I don't, and I would have thought that I had said sufficient in § 20 and Appendix V to make this clear. My rejection of his charge did not impair my appreciation of his wit!

To conclude, I should like very much to be able to give Mr Arthur the answers to the very sensible questions which he poses but I hope he will forgive me if I refrain from doing so on the ground that circumstances alter cases. The important thing is that the actuary should be able to ask himself the right questions. If he can do that I shall be surprised if he does not come up with answers which will command the respect of, at any rate, some of his professional brethren of the same general level of experience and competence; that is what matters when there is scope for the exercise of judgment.