

VALUATION OF REVERSIONS AND LIFE INTERESTS FOR THE PURPOSE OF APPORTIONMENT OF TRUST FUNDS

By N. BENZ, M.A., F.I.A.

Deputy Manager and Actuary, Equity and Law Life Assurance Society

[Submitted to the Institute, 28 February 1955]

INTRODUCTION

...the solutions given...are so various as to excite no little surprise and distrust in the minds of those unacquainted with the subject, under whose notice such solutions are brought.

...a great deal of judgment and discretion must always be required from the actuary, and...it is not possible to lay down any general rule which shall altogether obviate such requirement.

THE quotations above are taken from a paper by Jellicoe (*J.I.A.* 6, 61) which was discussed by this Institute in 1855. It is a salutary thought that there are no subsequent statements recorded in *J.I.A.* on the subject which seem to express so succinctly the two principal points which should always be borne in mind when the apportionment of a trust fund is under consideration. It must be stated immediately, however, that since 1855 problems of apportionment have been discussed only in 1871 (*J.I.A.* 16, 269), 1873 (*J.I.A.* 18, 77) and 1925 (*J.I.A.* 56, 243); indeed, reversions and life interests have scarcely been mentioned in Institute discussions since 1935, when O. I'A. Thurston presented his paper on Death Duties (*J.I.A.* 66, 369).

2. In some respects the background to problems of apportionment has changed so much in recent years that I feel no compunction in bringing the subject forward for discussion. This background is determined largely by:

- (a) market values of reversions and life interests;
- (b) the mortality of life tenants;
- (c) interest yields and the taxation of personal incomes, both immediate and prospective;
- (d) estate duty legislation, which through statutory exemptions from duty may not apply on all occasions.

3. The papers discussed in the nineteenth century were concerned mainly with consideration of various approaches to the proper method of calculation for apportionment, usually with some discussion of the market values and replacement-costs of the beneficiaries' interests; the question of replacement-costs arose only through apportionment at the instance of one particular beneficiary. No great emphasis seems to have been placed on mortality or interest yields, and for obvious reasons nothing was said about taxation, either of income or of capital. Anderson's paper of 1925 was based on a highly specialized approach and hardly attracted sufficient support to necessitate any further reference.

4. Already enough has been said to indicate that the general problem of apportionment is unlikely to be soluble by any unique 'general rule' such as Jellicoe presumably had in mind, and I have relied in this paper on the use

of the first person to show when I intend to put forward a merely personal viewpoint.

5. Though this paper does not purport to treat the subject completely, it is believed that most of the fundamental points arising in practice are covered. I have, however, refrained from any discussion of estate-duty legislation, the interpretation of which seems to me to be essentially a matter for lawyers. In my view actuaries should do no more than satisfy themselves that their information as to the expected incidence of estate duties is reasonable, because not only has the subject become most complicated but also the position changes from time to time as the result of new legislation and Court decisions, to name only two causes.

REQUIREMENTS OF A PROPER BASIS FOR APPORTIONMENT

6. In order to fix ideas let it be supposed that under a trust subject to English law a substantial personalty fund of the type mentioned in the Appendix is to be apportioned between the life tenant and the absolute reversioner, who is entitled to the whole fund on the life tenant's death, subject to the estate duties then payable; further, let it be supposed that the amount of the aggregable property passing on the life tenant's death has been established with the maximum precision attainable in such matters. Let us also suppose that the life tenant (whose date of birth will have been intimated) enjoys the state of health normal for her* age, and that the apportionment is to take place by the 'mutual consent' of both parties, and not at the instance of one with the other merely acquiescing. In order to simplify the concepts one further supposition is necessary—that the apportionment is to be effected by the life tenant purchasing the reversion with her own resources in the manner necessary to secure immediately the trust fund against any liability to duty through the life tenant's death. Comments on these suppositions are as follows:

(a) Reliance for the accuracy of the description of the interests must rest on the solicitors instructing the actuary—it is, of course, improper for actuaries to accept responsibility for the interpretation of legal documents.

(b) English law and personalty have been mentioned in order to complete the background in the simplest manner. Trusts subject to law other than English are rarely met in practice, and English realty trusts present special problems which are not discussed in this paper.

(c) The question of 'mutual consent' might be thought to present more difficulties in practice than it actually does. In my own experience apportionment at the instance of one party is so rare as to call for no further mention.

(d) This method of effecting the transaction, 'purchase by the life tenant for control' as it is usually termed, is nowadays usually used when practicable in preference to 'purchase by the reversioner for control' or to direct division, because it alone can avoid any continuation of liability on the trust fund to estate duty on the life tenant's death.

(e) The background has been 'idealized' to an extent which is seldom found in practice, and it should be emphasized that, by their nature, the points on

* Though throughout the paper the life tenant has been assumed to be female and the reversioner to be male, the arguments are of general application.

which information is necessary can seldom be elucidated without some delay even in 'idealized' circumstances.

7. Before proceeding to details, it is necessary to consider the main purposes to which the actuarial report is to be put. First, it should be recognized that the opinions advanced will not necessarily be accepted as final by the beneficiaries, and that perhaps over quite a wide range of numerical solutions it may be impossible to advise individual beneficiaries against acceptance. Further, in the event of the early death of a beneficiary it may be necessary to prove that there was no 'element of gift' in the transaction. Thus the conclusions should be put forward by the actuary as his Opinion in a manner which does not preclude subsequent negotiations between the beneficiaries, and the report should be intelligible, even if standing alone, to an interested reader who comprehends the nature of the existing interests.

8. With this background in mind, the requirements of a proper basis of apportionment may be summarized under three main headings:

(a) Satisfaction that the basis behind the figures does in fact represent a fair balance between the parties.

(b) Tidiness, in particular that the fund is exhausted.

(c) Ease of explanation, so that the method employed can be at least described concisely for understanding by those unacquainted with the subject.

The first of these requirements calls for some amplification. The underlying concept fringes on deep philosophical considerations, but in practice it is not difficult to detect the occasions when a beneficiary seems in danger of getting a raw deal. The three requirements are not independent of each other, but it is thought that between them they cover the whole field.

9. It seems hardly disputable that some formulae are required, and that the obvious approach to a gilt-edged fund is to value the life interest as a level income in the future by means of a life annuity-value with the amount of the income and the annuity-value determined on the same rate of interest; the reversioner's share will be determined by the assurance factor based on the same mortality and interest making the best estimate possible for duties. The present value of the duties remains for consideration and, in the particular circumstances envisaged, there is also the question of the expenses of the purchaser. Before proceeding further, however, some comments on market value are required.

MARKET VALUES

10. Each beneficiary should receive more from an apportionment than would be received from sale in the open market of the existing interest, because only then would any financial advantage be derived from negotiation with the other beneficiary. Moreover, negotiation may well be protracted, whereas, if title is clear, sale in the open market can be completed in a very short time. It seems unnecessary to consider for this purpose interests other than those commonly met in practice, that is, reversions, absolute or contingent, to the whole or aliquot parts of a trust fund expectant on the death of a life tenant (subject to any duties then payable) and ordinary life interests.

11. The traditional methods of valuation of these interests have been tacitly accepted by actuaries for very many years, but the employment by others of alternative methods should not be overlooked, nor the dangers

inherent in these latter methods being used for purposes other than those for which they are appropriate. One example may be cited; there is a strong predilection in some quarters for valuing reversions by deducting, from the value in possession of the part of the trust fund to which the reversioner is entitled, the product of a life annuity-value (commonly determined by the Succession Duty Act Tables) and the corresponding income of the fund; these tables can hardly fail to lead to wrong conclusions.

12. The market in reversions is made at auctions and by certain companies specializing in this type of business, and behind the prices actually realized at auction it is usually possible to discern for reversions without special features a consistent method of valuation. In this context special features may be assumed to connote:

(a) An interest of an obviously speculative character either through the nature of the trust fund, or through the existence of prior charges.

(b) The life tenant being either very advanced in years or unusually young, say, under age 50.

Neither trusteeship nor estate duties figure in this list. There seem to be buyers who are content to accept almost any trusteeship, and who do not find it necessary to inquire very far into the amount of the aggregable property likely to pass on the life tenant's death. Whatever views may be held on the propriety of these practices their existence must be recognized, and in their own distinctive way they do contribute to the firmness on which rests the concept of market value. These remarks are directed primarily to absolute reversions and to contingent reversions wherein the risk of defeat is nominal, as, for example, when an issue risk has been rendered nominal by a female life tenant having passed normal child-bearing age; for reversions contingent on survival there are different considerations, which need not be pursued for the purpose of this paper.

13. It is probably true to say that the market in life interests is made by the reversionary companies, whose transactions usually take the form of purchasing a well-secured annuity payable throughout the currency of the underlying life interest and specially created for the purchase. Other concerns whose taxation basis is similar may, it is thought, also play some part in this market. Regard will, therefore, be had to the gross amount of the income purchased, to the current rates of premium for whole-life non-profit assurance and, also, to the rates of interest obtainable on new investments; trusteeship is, of course, of prime importance. The foundations from which conclusions can be drawn are undoubtedly more fragile than for reversions.

14. When estimating market value the size of the reversion or life interest cannot be ignored in practice, and it would be unrealistic to overlook this point when considering an apportionment.

MORTALITY OF LIFE TENANTS

15. More than 30 years have elapsed since the publication of any mortality experience for life tenants, and the volume of experience available within most, if not all, offices is so small that there are no figures readily available from which firm conclusions can be drawn. On general grounds statistics for populations, or assured lives, can probably be rejected out of hand. The background suggests tables based on annuitants' mortality, which seems to have

been generally accepted in the past. There remains the further question as to whether the mortality experience of life tenants of funds the reversions to which have been sold would be appropriate for apportionment. As a reversioner's dealings are likely to be influenced by his personal circumstances and as apportionment seemingly need not be associated with either light or heavy mortality, I should hesitate to distinguish between classes of life tenant, though the sexes should, of course, always be distinguished. In this paragraph I have refrained from any discussion of mortgaged reversions because, notwithstanding their affinity with reversionary charges, this is hardly the time to embark upon such a speculative subject as the mortality of these life tenants.

16. In the absence of any published experience for life tenants the only course open to an actuary seems to be to assume mortality comparable with that actually experienced by any body of life tenants to whose experience he has access. From certain limited aggregate data for purchases (including reversionary charges) which I have observed over the past ten years I have little doubt that in general the best, if not the ideal, course is to assume $a(f)$ and $a(m)$ ultimate mortality without adjustment. It should be remembered that the requirement is for the best estimate, without any particular emphasis on safety.

17. The recent publication of the $a(55)$ tables calls for some comment. Though these tables are, in my opinion, at present not applicable to apportionments mortality trends may well be such that over the years they become suitable for use in the calculations, and for younger life tenants, say, under 55 if male and under 50 if female, it may even now be desirable at least to compare the effect of the use of the later tables with that of $a(f)$ and $a(m)$.

18. Though inquiries will have been made, as indicated, about the life tenant's state of health, some doubt will inevitably remain as to the propriety of whatever mortality assumptions may actually be made. In particular, if the life tenant is understood not to enjoy health normal for age and sex, which is very unusual in my experience, the actuary can only make such inquiries as he considers necessary to enable him to make the 'best' assumption for the particular life tenant.

RATES OF INTEREST

19. As to the rate of interest to be used in the calculations, there are two main questions—whether the rate should have regard to income tax, and whether the rate should be determined by reference to the yield of the fund, the current long-term British Government rate, or some other rate. It is probable that there is no unique solution to this problem in any one particular case, and before proceeding to detailed comment it is desirable to examine the assumptions made in fixing the rate of interest to be used in the calculations.

20. First, there are two distinct viewpoints:

(a) It may be assumed that the beneficiaries' existing interests are to be valued directly in the same way as ordinary investments.

(b) It may be assumed that the beneficiaries reinvest the proceeds of their interests in the manners necessary to replace the interests they have hitherto enjoyed under the trust.

For life interests the first viewpoint leads nowhere because, as already indicated, they are valued indirectly. For reversions this viewpoint is in

practice just as unpromising because no class of purchaser is known to follow the practice of using in the calculations a rate of interest fixed in relation to the rate obtainable in the market on some particular class of investment.

21. Amplification of the second viewpoint leads to the following assumptions:

(a) The life tenant is to invest the proceeds of her life interest to yield interest to her at the particular rate, and to draw on capital year by year to make up her income to the same amount as she would actually have received had the apportionment not taken place.

(b) The reversioner is to invest the proceeds of his reversion at the same rate of interest, and to reinvest the interest year by year at the same rate so that at the life tenant's death he receives the same amount as he would have done had there been no apportionment.

For both parties these assumptions will ordinarily involve material departure from the facts:

(i) It is hardly likely that both parties, or even either, will retain their interests in these forms.

(ii) Personal taxation of both beneficiaries could affect the result very materially, particularly if surtax was involved, but at the other extreme it might not even enter into the beneficiaries' actual rates. This problem has not been eased by the increasing tendency in recent years to extend the ranges of income over which the reduced rates of income tax operate.

(iii) There is required to some degree the forecasting of future investment terms and rates of income tax.

22. Enough will have been said for it to be apparent that the best possible solution is the solution least open to criticism, and it should be remembered that it is always open to trustees to change investments of a trust fund, and indeed, on occasion, they may have no choice as, for example, when a property included in the fund is compulsorily sold. I think it follows that in practice the second viewpoint is likely to predominate, but not to an extent sufficient to make the first viewpoint obviously ridiculous. Thus when the yield of the fund is similar, say within $\frac{1}{4}\%$, to the long-term British Government rate, then this rate, less income tax at the current standard rate, represents the best solution; at the time of writing rather more than $3\frac{1}{2}\%$ is obtainable on long-term British Government securities so that, with the standard rate of income tax at 9s. in the £, I would for these funds use 2% interest in calculations for the purpose of apportionments. It will be observed that no attempt is made to forecast the trend of the standard rate of income tax, a matter on which actuaries, no less than others, are entitled, if so inclined, to give effect to their own fears and hopes.

23. It remains to consider the low-yielding funds and the high-yielding funds. First leaving aside funds invested in agricultural property, because they are usually subject to the Settled Land Acts, it is not unknown for funds invested in Stock Exchange securities to yield less than the long-term British Government rate. Subject always to the limits imposed by market values it seems to me that in such cases the net long-term British Government rate must generally be required. There still remain the high-yielding funds which are perhaps commoner in practice; ignoring for the present funds invested in assets of wasting character I again find it difficult to justify varying the rate of

interest used in the calculations. Trustees may have retained investments because they are reluctant to exchange into the classes allowed by the trust instrument, but they may hold the particular investments by virtue of their own powers to invest. To distinguish between such cases seems improper to me. Above all, it can hardly be possible to forecast the future dividends on a fund permanently invested in equities, which seems to me to be the only arguable alternative—to-day there seems little logic in tacit assumption for the future of current dividends. When, however, the fund is of a wasting character, such as poor-class property, then I think regard should be had to the prospective net yield over the lifetime of the life tenant.

24. It may perhaps be urged against this last conclusion that the two different types of high-yielding funds are not clearly distinguishable. I am inclined to think that this objection cannot be sustained because in practice the particular type of high-yielding fund can be readily identified on the infrequent occasions when it is met. Further, the concept of market values of the individual interests can hardly fail to act as a reminder.

ESTATE DUTIES

25. Though it is perhaps hardly necessary to mention the point, the determination of the aggregable property likely to pass is a matter for which the actuary should disclaim responsibility. In any event, in the particular circumstances of §6 it is only the reversioner who is likely to be in doubt as to the propriety of the assumption made and, in ordinary circumstances, he will probably have some prior indication. The warning given in §5 of the unwisdom of accepting any responsibility for the assumptions made as to the incidence of estate duty should not be overlooked.

26. As already indicated there are several methods whereby the apportionment can be effected, and the availability of each will depend upon the particular circumstances. Frequently the method has been decided before the actuary is approached, and it is important that he should confirm the consequences, so far as estate duty is concerned, of the particular method chosen. It hardly lies within the scope of this paper to discuss the various methods, and for the sake of clarity the simplest method has been chosen—viz. the life tenant buying the reversion with her own resources, for the reason given in §6.

27. It is perhaps unfortunate that just as there is no single conclusive answer to the problem of the rate of interest, so there is, in my opinion, no single conclusive answer as to the destination of the present value of the estate duty saved. The following are the points which seem to me the most important:

(a) Whatever method is chosen should be valid irrespective of the age of the life tenant, and of the rate of duty saved.

(b) Each beneficiary should receive a worth-while, as distinct from a nominal, fraction of the duty-saving.

It is believed that two methods are commonly used in practice in cases such as that mentioned in §6:

(i) Equal division between life tenant and reversioner.

(ii) Division in the same ratio as the values placed upon the beneficiaries' respective interests ascertained in the manner already indicated.

As the method actually chosen may well influence very materially the final results, it is necessary to examine these two approaches in greater detail.

28. The proportionate approach is unlikely to be suitable either to a very old life tenant, or to the reversioner if the life tenant is very young, especially if the rate of duty is not very high. It seems, therefore, to be preferable to use the method of equal division on all occasions when there are only two beneficiaries respectively owning the life interest and the reversion. I must immediately state that this has not always been my opinion, but to me the predominant point is that, irrespective of the value of a beneficiary's interest, the consent of both is equally necessary for an apportionment.

29. It may well be asked what method would then be used if there were successive life tenants on each of whose deaths duties were payable. I think it follows that each party whose consent is necessary for the saving to be effective should receive an aliquot share, and that no party should be prejudiced through being followed by a life tenant (or tenants) and a reversioner rather than by only one beneficiary (the reversioner).

30. It remains to consider the case of a beneficiary entitled to a benefit of fixed amount, such as an annuity or a reversionary legacy, and in these cases it can only be said that judgment is necessary. If an annuitant is concerned, even one with benefits of the simplest character, especial care is necessary to ensure that the trustees have been fully advised as to their responsibility for estate duty if they part with the trust fund after the apportionment.

31. In the Appendix there are shown the results of alternative assumptions using as background the type of example mentioned in §6.

INTESTATES' ESTATES ACT 1952

32. Before reaching the conclusion the Intestates' Estates Act 1952, whose provisions were summarized in *J.I.A.* 79 [16], should be considered as indicating a method of apportionment approved by the legislature. For a full understanding direct reference to the Act is necessary but five features, which are to some extent interdependent, may be mentioned:

(a) The first feature is that the Act applies only to apportionment at the instance of the life tenant and does not confer any special rights upon reversioners. It is perhaps indicative of the special regard paid by the legislature to the rights of spouses of intestates that the method of apportionment, as appears from the next paragraph but one, would be much more appropriate, in the light of what is thought to be generally accepted actuarial opinion, for apportionment at the instance of the reversioner.

(b) The second feature is that the provisions of the Act are expressed to be effective only within a period of 12 months from the date on which representation in respect of the estate of the intestate is first taken out, with provision for extension of this period in exceptional circumstances.

(c) The third feature, and perhaps the most interesting to actuaries, is that regard should be had to the cost of a Government annuity securing the same income for the lifetime of the life tenant as would be yielded by the trust fund if it were reinvested in $2\frac{1}{2}\%$ Consols at the actual date of the transaction. The reversioner takes, of course, the balance of the trust fund after the rights of the life tenant have been satisfied by 95% (or such lower percentage as may have

been enacted) of the cost of the annuity and after the payment of any legal expense falling upon the fund. It follows that the legislature has recognized as the proper criterion gross, and not net, income. It also follows that provision is automatically made for alterations in general financial conditions.

(d) The fourth of the five features already mentioned relates to the assumptions made as to the life tenant's mortality, without any evidence of health being required. Though it was presumably intended to place the life tenants in a class suffering somewhat heavier mortality than Government annuitants, it follows that, as Government annuity rates can be relied upon to reflect secular changes in the mortality experienced by Government annuitants, the assumptions as to life tenants' mortality will be correspondingly changed.

(e) The last feature calling for comment is that problems arising from estate duty on a life tenant's death cannot be considered because there will almost invariably be exemption through the life tenant being the surviving spouse of the intestate.

33. To conclude this section it should be emphasized that this method was intended to apply only to the limited class in the limited circumstances already indicated, and cannot, therefore, be a matter for criticism. Without becoming embroiled in the various considerations which might have led to the selection of this particular method, it is also worth noting that the 1952 Act represented a marked change in the general statutory provisions for intestacy. Thus this particular method need hardly be taken into account except perhaps when an intestate's estate is to be apportioned shortly after the expiration of the statutory period.

CONCLUSION

34. Passage of time has certainly not eased the subject of apportionment, and the combined effect of the difficulties arising under the headings of mortality, rate of interest and estate duty can on occasion be quite considerable. These difficulties cannot be met, except to a minor extent, by consideration of the combined effect of the actual assumptions upon the opinion expressed as to each beneficiary's share, useful as this type of approach is for determining market value. The difficulties mentioned are, however, no excuse for failing to put forward firm recommendations, which should be addressed in the report to the party or parties on whose behalf the actuary has been instructed. The report should omit, in my view, all considerations of a personal nature but it should be complete in itself as stated in §7.

35. It is disappointing not to be able to put forward any new developments in this paper, the fourth on the subject which has been submitted to the Institute since Jellicoe's paper of 1855, but I am hoping that it will at least serve as the basis for a full discussion. The relevance of Jellicoe's remarks quoted at the beginning is to me very striking, not the least because they emphasize the peculiar qualities of the actuary's present-day professional responsibilities when advising on apportionment.

36. I must acknowledge a debt to others who stimulated my interest in this subject, and I hope that I shall be forgiven for mentioning none by name.

APPENDIX

A1. The purpose of the Appendix is to illustrate the differences which can result from various assumptions as to interest and estate duties. For background I have used the example outlined in §6 with the following particulars necessary to complete the information required by the actuary:

(a) The life tenant is assumed to be a female aged 50, or alternatively aged 75.

(b) The trust fund, which is described in the following paragraph, is assumed to be liable on the life tenant's death for no duty, or alternatively for 40% duty.

A2. The valuation of the fund is as follows:

Fund	Market price £	Market value £	Income £
£20,000 2½% Consolidated Stock	69	13,800	500
£20,000 3% Savings Bonds 1960/70	96	19,200	600
		<u>£33,000</u>	<u>£1,100</u>

It is usually helpful to set down actual income in order that comparison may be made with the income valued in the apportionment.

A3. As indicated in §§15–17, the choice of mortality table calls for thought and, though I would use *a(f)* ultimate, others might think differently. As there seems to me to be no obvious alternative to the *a(f)* and *a(m)* tables, I have refrained from putting forward figures on any alternative mortality basis.

A4. The yield of the fund, without allowance for accrued interest, is about £3. 6s. 8d. % per annum. The rate of interest obtainable on long-term British Government securities, as indicated by the price of Consols, is rather more than 3½% per annum, corresponding to a net rate of about 2%, allowing for tax at 9s. in the £. It is only proper, however, to mention that with a life tenant aged 50 the Savings Bonds are likely to be redeemed in her lifetime, and that if the holding is retained by the trustees until redemption, or earlier realized, the subsequent yield of the fund will depend on the market conditions at the time of reinvestment. Though my own preference would be to use 2% interest in the calculations irrespective of the age of the life tenant, I should not be surprised if some actuaries preferred to use a higher rate. I have accordingly shown in the following tables figures calculated at 2% interest with bracketed figures calculated at 2½% interest:

Duties	Apportionment of duties	Sum to be paid by life tenant
Female life tenant aged 50		
None	—	£ 19,000* (16,750)
40 %	Equal	15,250* (13,500)
40 %	Proportionate	15,000 (12,750)
Female life tenant aged 75		
None	—	26,750* (25,500)
40 %	Equal	21,500* (20,500)
40 %	Proportionate	24,000 (22,500)

* See §A8

A5. Before comment on the figures it should be noted that the sum to be paid by the life tenant is stated as an absolute amount, and not as a percentage of the value of the fund after allowance for expenses incurred through the apportionment. It is, of course, necessary to emphasize that the figures depend upon the general financial conditions ruling, but the use of proportions seems to me still to leave this question open and to render the report incomplete without a market valuation of the trust fund at the actual date of apportionment, ignoring for the moment the question of expenses.

A6. It is believed that expenses, apart from stamp duty, will usually be of the order of very small quantities, and there will be no significant loss of accuracy if the allowance is taken, as in the examples above, to be of the order of 3% of the consideration paid by the life tenant; in these examples 2% of the consideration is, of course, directly attributable to stamp duty. The allowance has been adjusted in order to make the final result a multiple of £250, which seems to me to indicate with sufficient precision the degree of accuracy in the calculations.

A7. Relationships to market values of the beneficiaries' interests must also be considered. The reversioner in all cases will receive substantially more than the market value of his reversion, by reason of the method of calculation. For the life tenant, however, the position is not so clear as, at age 50, the estimated market value of her life interest might well be as high as £12,000; at age 75 the corresponding figure is probably somewhat in excess of £5000. Thus when no duties are payable there is a real danger of the life tenant receiving less than the estimated market value of her interest, but, as already indicated, this estimate of market value is open to a high degree of variation. In the particular examples there is, however, no occasion to modify the figures for reasons of 'market value'.

A8. For each apportionment without any duties two figures appear in the table, and for each apportionment with duties four figures appear. I would recommend the asterisked figures shown in §A4, each having been determined on the basis that the life tenant would be responsible for the costs of the apportionment.

ABSTRACT OF THE DISCUSSION

Mr N. Benz, in introducing his paper, said that he had been rather worried, on looking through the first twelve paragraphs of the paper, to find no fewer than half-a-dozen occasions when it looked as though he were seeking to limit the scope of the discussion. Towards the end of the paper he expressly asked for a full discussion, but lest that reference should have got buried—or readers of the paper should not have got to the paragraph in which it occurred—he felt it well to emphasize the point.

The next point he wished to make related to an omission. He had deliberately refrained from mentioning in the paper anything about Section 33 (3) of the Finance Act, 1954. That was the section which related to the valuation of limited interests in policies subject to the Married Women's Property Act and similar assurances.

Finally, he would not like anybody to think that he had overlooked those rather strange-looking market prices that appeared in the appendix. He wished that he could claim that there had been some insight in the reference in § A4 to a higher rate of interest, but though that honour was one that he could not claim, he was left more than content with the honour of presenting the paper to the Institute.

Mr G. V. Bayley, in opening the discussion, said that since about 1939 there had been a heavy burden of taxation imposed on settled property, and he was sure that that was the main explanation of the enormous increase in the number of terminations of trusts which had come before actuaries during the past few years. The paper, therefore, gave a welcome opportunity to review the principles on which they based their professional advice in an important sphere of their consulting work.

The author had confined attention to the apportionment of a trust fund between life tenant and reversioner by their mutual consent, as distinct from an apportionment at the instance of one beneficiary, the other acquiescing. He felt sure that the author would agree that the words 'mutual consent' were far from ideal; indeed, they were not of his own choosing, for Baden had used them as long ago as 1871. The words 'mutual consent' were used in practice to describe two quite different situations which were easily confused. First, they might mean that the apportionment figures were the product of an absolute equivalence of desire for the transaction. He was using the word 'absolute' to describe a unique and wholly impartial assessment by an actuary. The underlying principle he would like in that connexion to call the principle of 'absolute indifference'.

Secondly, the words 'mutual consent' might simply mean that the apportionment figures reflected the relative intensity of desire of the beneficiaries themselves, and in particular they might reflect an equation of what was essentially unequal desire. The principle there was the principle of 'personal preference of the beneficiaries'. As an extreme illustration of the principle of personal preference, the two parties might mutually consent to any figure as the sum to be received by the reversioner—for example, 99 % of the fund. But the principle of absolute indifference, on the other hand, was capable, he thought, of unique interpretation. The relevant concept was something like mutual and balanced intent, or absolute equality, or balance of desire.

He did not think that the author had really brought out the distinction between those two concepts or principles. For example, in § 7 he evidently had in mind

the principle of personal preference whereas the numerical solutions in the appendix conformed to the principle of absolute indifference. The distinction was particularly important in a purchase for control, a type of transaction which differed in several ways from an apportionment.

The author's review of the market in reversions and life interests was, he thought, particularly valuable. In an apportionment by mutual consent the market values of reversion and life interest set boundaries beyond which the parties could not normally be recommended to go. But they had other purposes too. Within limits the market value of a life interest in a fund of money stocks tended to be greater in a fund with a higher yield, and conversely the market value of the reversion tended to be lower. Later on in the paper, the author suggested that, wasting assets apart, the values of the two interests for apportionment were independent of the yield on the fund and should be calculated at a gilt-edged rate of interest. He found it most difficult to reconcile those two views on value. Granted that market values might or might not be suitable criteria for the actual apportionment calculations, it was, he thought, quite another matter to dismiss such a consensus of opinion as to the effect of yield on value in general. In effect, the author's suggestion meant that the value of the life tenant's interest in, say, a $4\frac{1}{2}\%$ fund was equal to the value of her interest in a $3\frac{1}{2}\%$ fund of equal capital value. To take the simplest case of fixed-interest irredeemable stocks, if it was agreed, for the sake of argument, that the value of income in perpetuity from a particular $4\frac{1}{2}\%$ stock was equal to that of a $3\frac{1}{2}\%$ stock, that was simply another way of saying that the capital values of the two stocks were identical. The author, in effect, contended that the value of income for a limited period, say t years, was also the same for each of those two stocks for all values of t . The underlying premise behind that contention was that the expected income, in the probability sense, in each future year was a constant fraction of the apparent income. He did not think that that was the best assumption or the most common one. He thought that most people visualized diminishing expectations of income from the higher-yielding stock, for example, in geometrical progression; and that line of thought suggested to him (the speaker) the valuation of $\delta\bar{a}$ for the life tenant, where δ and \bar{a} were calculated by reference to the yield on the stock—or the fund—in question.

Ordinary shares, of course, presented special problems. As the author pointed out, their yield might be greater or less than the yield on long-term British Government securities. Low yields on ordinary shares surely presupposed an increasing expected income. There was frequent mention of growth stocks, so-called, in the financial Press. High yields might imply the very opposite. The point he was anxious to make was that the shape of the expected future income assumed obviously affected the actuary's results, and that situation demanded, he thought, an absence of artificial restriction, such as the use of a single rate of interest on all occasions.

What he had been saying about valuing income could be applied similarly to valuing capital expectant at some future date; but he would like to go on and deal with the important sections of the paper dealing with the estate duty and the actual apportionment calculations. He thought it was true to say that the methods which actuaries had devised for apportioning the saving in income tax, surtax and estate duty had such a profound effect on the results that many other considerations, such as the mortality basis, became relatively insignificant. He hoped that in the discussion there would be many expressions of opinion on that controversial issue.

In apportionment by mutual consent, he thought that both the author's methods were reasonable—and a great many others as well—provided always that the principle of personal preference applied to the particular situation. If time were unlimited, he could see no objection in principle to the actuary's demonstrating to his clients the effect of various assumptions, so that the beneficiaries could decide on a system of division which best satisfied their personal interpretations of equity or their relative inequality of desire for the transaction. It was when the instructions conformed to the principle of absolute indifference that any difficulty arose. So for the purpose of his remarks he would assume that the actuary had been instructed to recommend a single solution to both sides impartially. That, in his experience, was by far the most common situation in practice. With that in mind, he would compare the author's two methods whereby the value of the estate duty was shared equally or shared proportionately.

There were two obvious analogies. In parliamentary or municipal representation, one head got one vote, and a similar sort of principle was used in the paper to justify an equal division of the duty reversion. Company profits, on the other hand, were usually distributed according to shareholdings and not according to heads. He believed that true absolute indifference was given more faithful interpretation by following the shareholding analogy, i.e., by distributing the duty value proportionately. It seemed to him that the logical conclusion to the argument in favour of an equal division of the duty reversion was an equal division of the whole fund and that, to his mind, would be an absurd interpretation of the principle of absolute indifference. Over a wide range of situations, therefore, he favoured the proportionate method, but he admitted that he would modify its application in extreme circumstances—for example, where there was a youngish life tenant and a high rate of estate duty; there he would recognize the voting element and give it tangible expression in any such modification.

Considering together the author's two recommendations, the use of the current standard rate of income tax was, he thought, a most vulnerable target. It was of the character of another artificial restriction on his calculations, as no doubt other speakers in the discussion would emphasize. For example, if the life tenant's effective rate of tax was relatively low, the results by both the author's methods would be liable to disappoint her.

It was extremely easy to criticize any solution to the problem. His own approach, the results of which conformed in many situations fairly closely to the author's proportionate sharing solution but using a forecast net rate of interest appropriate to the particular trust, was as follows. First, he would calculate the 'worth' of each beneficiary's interest in the fund. Then he would divide the balance of the fund proportionately. He would use dual criteria of worth, estimated market value and personal value, the latter being a simple discounted value of the particular interest, net of all forecast taxes. He would then select the higher of those two values for each beneficiary. That seemed to be a reasonably logical approach; it was based on the rule that a beneficiary's stake in the fund could not be worth less than the corresponding market value. There was much more to it than that, but it was a framework on which to build a completely consistent system, and it gave good results over a wide range of situations in practice.

He drew attention to the vital distinction between apportionments as such and purchases for control. In §6 the author stated that the apportionment was to be effected by the life tenant's purchasing the reversion, and he used a similar phrase in §26. It was no mere quibble over words to say that a purchase for control was *not* an apportionment—for several reasons. First, the reversioner

received the purchase price out of the life tenant's free resources; he got no part of the fund. Secondly, the life tenant's whole interest was enlarged and she received the whole fund. The effect of the form of the transaction on the continuing liability for estate duty was profound. The purchase attracted stamp duty, which an apportionment avoided if there was no quantum benefit.

An actuary looked beneath the surface to comprehend the result as a whole, and undoubtedly a valuation for apportionment would help him to arrive at a fair price for a purchase for control, but a correspondence or similarity of results could stem from different sources. He felt that it only confused the issue to regard the sources themselves as identical. The facts were different, the law was different, and the numerical result was different.

The effect of the estate duty law then existing was indeed to produce a different result according to whether there was an apportionment or a purchase by the life tenant for control of the fund, a difference which profoundly affected the advice which the actuary might be called upon to give. In an apportionment the life tenant's interest in the share of the fund allocated to her was, at the time of speaking, considered to be enlarged, and there was no continuing claim for estate duty upon it; but, as to the share of the fund allocated to the reversioner, the life tenant's interest was determined, so that the Finance Act, 1950, Section 43, imposed a continuing liability for estate duty on the reversioner's share if the life tenant died within five years. In a purchase for control the life tenant's interest in the whole fund was enlarged by the purchase of the reversion, and that was why the whole fund was freed from duty immediately. No part of the purchase price paid to the reversioner was dutiable, provided, of course—an important proviso—that the price itself could be justified.

In an apportionment, the question whether there was an element of gift from life tenant to reversioner did not matter at all, because the whole of the reversioner's share was dutiable automatically under Section 43, no matter how large or small it might be. It was when a purchase for control was contemplated that the difficult question of whether there was a dutiable element of gift became a live issue.

That situation had certain consequences for actuaries. In an apportionment the actuary was evidently called upon to place sufficient information before the beneficiaries to enable them to consent mutually to the shares of the two sides (in other words, to interpret the principle of personal preference) and, if so instructed, to recommend a single figure; but in a purchase for control the actuary's report was required as evidence in the hands of the lawyers in case they should need, as the author said, to prove that there was no element of gift. The distinction between those two requirements was a very real one. The two parties could mutually consent to any figure, as he had already said, as the sum to be received by the reversioner; it was a quite separate question whether that figure contained an element of gift.

There were two possibilities in a purchase for control which required distinction. First, the parties might be at arm's length, with separate actuaries advising each side in negotiations with the other. Subsequent bargaining would produce eventually an agreed price, and a sale at that price corresponded approximately to an apportionment of the fund in accordance with the principle of personal preference. An actuary's advice on each side ensured that the parties were not acting arbitrarily and, incidentally, was evidence of a *bona fide* arm's length transaction. But more usually the parties were at one, and a single actuary was asked to advise both sides on the proper price to be paid in the circumstances.

That was one of the many scenes which the author set in §§6 to 9, and in his view it was the most important one. His own conclusions were the following.

First, in the circumstances under consideration, a single figure only was requested. It became much more important, therefore, to fix a precise concept for the transaction as a whole which was consistent with the requirement that there should be no element of gift. He submitted that the principle of absolute indifference was admissible, but that the principle of personal preference where the parties were at one led nowhere. Secondly, if the actuary was instructed on the basis of absolute indifference and if the purchase was completed at his recommended price, then the element of gift was obviously excluded.

He would conclude on that note, because he believed that there was a crucial distinction to be drawn between a purchase for control without element of gift and an apportionment by mutual consent. He did not think it possible to resolve those issues which really mattered in the actuary's calculations without a critical examination of that distinction.

Mr A. Gardner thought that the valuation rate of interest was an important part of the problem. He confessed that he felt, as had the opener, that the author had over-simplified the problem in suggesting as a general solution the use of the current long-term British Government rate, less income tax at the standard rate, and in so doing had tended to favour the reversioner at the expense of the life tenant. He wished to redress the balance.

He thought it was generally agreed that the use of a gross valuation rate of interest could not be sustained in theory and led to the practical difficulty that it often produced a lower value for the reversion than that to be obtained in the open market, but it did not follow as a necessary corollary that the use of a net rate of interest was correct. As the author had stated, the underlying assumption that the beneficiaries, with the capital in their hands, would endeavour to replace so far as possible the interests to which they were previously entitled, the life tenant by drawing on capital to make up her income and the reversioner by investing the interest on his capital, was most unlikely to be borne out in practice since surely the immediate attraction of the apportionment to both parties was the natural and human one of being able to touch capital and employ it.

He agreed with the view given by Anderson, in his 1925 paper, to which the author referred, that the use of a gross rate favoured the life tenant and that of a net rate the reversioner, from which it would seem to follow that the proper rate lay somewhere in between the two. It would be remembered that Anderson valued at a gross rate of interest first the life tenant's income, less income tax, secondly the income tax thereon, and thirdly the reversioner's capital, thereby exhausting the fund. He then apportioned the value of the income tax between the life tenant and the reversioner in proportion to the value of their interests on the grounds that after the transaction both parties would suffer income tax on the interest derived from the capital in their hands.

He had made some calculations on those lines at gross rates of interest of $3\frac{1}{2}\%$ and 5% , dividing the value of the estate duty payable on the death of the life tenant as well as the value of the income tax proportionately, and had found that if income tax was allowed for at from 7s. 6d. to 9s. 0d. in the £, at age 50, male or female, the life tenant's share was approximately reproduced by the direct use of $\delta\bar{a}_x$ at a rate $\frac{1}{4}\%$ higher than the net rate corresponding to a gross rate of $3\frac{1}{2}\%$ and $\frac{1}{2}\%$ higher than the net rate corresponding to a gross rate of 5% . As the age of the life tenant increased, the results approximated more and more

closely to a net valuation and the difference became of little practical significance at age 75.

He would therefore advocate, where the life tenant was not of advanced years, the use of a rate of interest slightly higher than the net rate suggested by the author, but he would like to press the claim of the life tenant a stage further. He agreed wholeheartedly with the opener that the nature of the trust fund was a factor that should have an important bearing on the rate of interest to be used in the valuation. The securities constituting the trust fund resulted from many past influences. Some of them represented the testator's investments or investments originally placed in trust by the settlor which had been retained, for their own good reasons, by the trustees. The remainder represented securities acquired by the trustees in the terms of the instrument's investment clause, which in modern times was often in wide terms and might have been broadened by agreement among the beneficiaries themselves. The fund's character, therefore, reflected the testator's or settlor's intentions, as implemented by the policy of the trustees, acting to the best of their ability in the interests of the beneficiaries. It followed that, unless there was reason to expect a change in their policy were the apportionment not to take place, the actuary should use a rate of interest related to the earning power of the fund, thereby preserving its individuality in the valuation.

He would first calculate as a yardstick a flat yield based on current prices and the latest dividends. He felt, however, that that figure should properly be adjusted to allow, for instance, for short-term redeemable fixed-interest securities carrying a low nominal rate of interest or ordinary shares where the current price clearly discounted expectations of higher dividends. As a result, a gross rate of interest appropriate to a particular fund was obtained, and in passing to a corresponding net rate he was sufficiently optimistic, in the case of a young life tenant, to allow for some future reduction in the standard rate of income tax.

If such considerations were accepted, he suggested that, while each problem had to be judged on its own merits, where a fund did not present unusual features suitable rates of interest to employ in current conditions might be of the following order: for a gilt-edged fund subject to a trustee investment clause, $\frac{1}{2}\%$ or, where the life tenant was old, $\frac{1}{4}\%$ above the net long-term British Government rate suggested by the author; for a mixed fund consisting of fixed-interest, preference and ordinary stocks, say, $\frac{1}{2}\%$ above that rate; and for a fund invested solely in good class ordinary stocks with a wide investment clause, say 1% or even $1\frac{1}{4}\%$ above that rate, provided that the resulting value of the reversion did not offend the limitation on the market value.

He thought it would be found, by the use of rates of interest of that order, that the danger of the value of the life tenant's share proving less than the value obtained in the open market was much decreased. The danger was a real one if the rates suggested by the author were used when the fund showed a comparatively high yield or when the life tenant was a male.

He was not sure that he agreed with the author in his views of the fragility of the market in life interests. Admittedly, reversionary companies—which were generally the market—tended wherever possible to purchase an annual sum payable as a first charge out of the life interest; that form of transaction was popular with the vendor, who thereby retained an interest in the equity of his income, and with the purchaser, who thereby avoided the risk inherent in an outright purchase of losing touch with the life tenant. Trust funds being dealt

with by apportionment, however, were often large, and the life tenant was generally a person of standing or even of public repute, so he felt that the risk of the trustees being unable to keep in touch with her either directly or through members of her family was one that could well be taken in the ordinary course of business. He considered that a 5 % gross valuation of the estimated income, allowing for an office rate of premium, would prove a welcome investment for a reversionary company. A market value on such a basis should be regarded as a minimum and the life tenant should receive at least that amount before being given any part of the value of the estate duty saved.

The larger the amount handed over to the reversioner the more attractive was the transaction to the beneficiaries as a means of saving estate duty, and it might be felt that in pressing the claim of the life tenant so strongly he had been all too aware of that fact. He therefore wished to reiterate that the duty of the actuary was to put forward recommendations which were, in his opinion, equitable. While his responsibility was primarily towards his client, it was desirable to emphasize the point which the opener had so ably made that the actuary had also a responsibility to the Inland Revenue. Where the life tenant purchased out of her free resources a reversion expectant on her own death, the trustees were in current practice relieved of all liability for estate duty at her death whenever that occurred, and the Estate Duty Office was willing to give them a clearance certificate provided the transaction went through on the basis of an actuarial valuation. It was therefore all the more important that, since the Revenue was prepared to accept the valuation without question, the actuary should ensure that there was no element of gift involved through the reversioner receiving too large a slice of the trust cake.

Mr W. P. Goodchild asked members to infer a broad identity of view between the opener and himself in those sections of the paper where he failed to add anything to what the opener had already said.

The author had reminded them that in the valuations under discussion they attempted a balanced result in every case. The range of practical situations was enormous. There were wide differences in the nature of the trusts themselves, vast differences in the size of trust funds and the character of the investments, in the ages of the life tenants and in the taxation levels of the beneficiaries, both of income and capital. Yet they strove, and rightly so, for a consistent pattern of results.

In his view, the actuary who worked in isolation on such problems placed himself at an unnecessary disadvantage compared with those who from choice or necessity worked together in partnership or close association.

On mortality, the data to which he had access were depressing. His impression was that offices investing in reversions would be lucky to avoid a mortality loss using *a* (*f*) ultimate at all ages—on new purchases. The data for male lives were too small to point any trend. For apportionments and purchases for control he preferred to use the male *a* (55) tables with small adjustments rather than to be tied to the *a* (*m*) ultimate table with its high mortality at the younger ages. In practice, he also used the *a* (55) ultimate tables for female lives, subject again to small age adjustments.

Subnormal health increased the price payable to the reversioner in a purchase for control. For obvious reasons, any adjustment on that count should be well founded. The state of health of the life tenant should be disclosed to the actuary at the outset. By mentioning to instructing solicitors the effect of health on price

their co-operation was assured. In his experience, it was not usually difficult to obtain confidential information from the life tenant's medical attendant. That could then be related to the particular standard of vitality normally adopted, i.e. good health and a sound constitution; for male lives that standard presupposed assurability at normal rates.

Apportionments had become rare. An apportionment was the obvious form of transaction for a duty-free fund. But when the fund was duty-free and of any size, it should be apportioned only as a last resort. The actuary—in the interests of the beneficiaries—should not encourage an unnecessary break-up of a duty-free fund. There were ways and means of producing capital from such a fund without killing the valuable duty-free trust. When the fund was subject to estate duty at a low rate or if the reversioner were a charity, the additional costs of a purchase might not be worth while. (There were also certain technical reasons why an apportionment might be found to be the only form of transaction available.) Most transactions that he saw were purchases, not apportionments.

There was one point he wished to make on valuation. In an apportionment, the capital allocated to the reversionary beneficiaries was sometimes burdened with a continuing duty liability. On that account, such capital was worth less than its face value. Allowance had to be made for the fact, in valuation, if injustice to those beneficiaries was to be avoided. (The same problem could also crop up in a purchase for control when the life tenant had to acquire the interests of an annuitant whose death would have given rise to a duty claim.)

The author did not, he thought, refer to the valuation of capital passing to a beneficiary in that uncertain form. He took it that the author would allow by deduction for such temporary duty liability on the same interest and mortality bases as underlay his main calculations.

He supported the author most strongly in his reminder (§34) that reports should be self-contained. Among many essentials, it was vital to set out the lawyer's instructions both on the nature and extent of presumptive duty claims and the precise effect on them of the proposed transaction, be it purchase or apportionment. Also, it must be entirely clear from the report in what climate the actuary was advising—whether it was really a case of 'absolute indifference'. That normally became apparent at an early stage in correspondence.

He believed that a well-constructed report was a real asset. It gathered the loose ends together and should therefore be of some help to the lawyer who had had difficulty in anticipating the requirements of the actuarial mind. The report which presented a complete picture of the scheme might even appeal to the beneficiaries, provided that it did not bristle with figures. He rarely gave them any!

In work of that character the actuary sat at the hub of the wheel and the various persons who instructed him to make valuations sat at the ends of the spokes. So the actuary had a unique opportunity to acquire knowledge about a small section of the law, and to act as a clearing house for ideas. He had, of course, to be careful not to act the lawyer; but he could prompt. Some of the spokesmen would not be word-perfect.

In the interests of the beneficiaries, the actuary had to have instructions that were complete and accurate. The framework of any proposed scheme should always be examined critically for possible improvements in detail.

The author was careful to place on the lawyers the ultimate responsibility for accurate description of duty claims. The author also referred, in §§5 and 30, to

the actuary's own responsibilities. Many actuaries seemed to take a purely negative view of anything to do with death duties; but was that really good enough? He did not think it was—neither did the author.

The actuary should at least understand the effects of the judgments in *Lambton* and *Longbourne* on duty claims, before and after a purchase for control, in trusts involving annuities.

He had yet to find a solicitor who would volunteer information about allowances for obsolete duties (for example, Finance Act, 1914, Section 14, and Finance Act, 1949, Section 29). Such allowances reduced the presumptive burden of estate duty and therefore increased the values of the interests of reversioner and possibly also of life tenant. Unless the actuary had such knowledge and information, he would be unable to apply the test which the author recommended in § 5—namely, to decide for himself whether duty instructions appeared reasonable. He himself liked to go a little further and be satisfied that the instructions were not only reasonable but correct.

In a complicated scheme the actuary's suggestions as to the best order for carrying out appointments and releases might effect substantial savings. He saw the actuary in a very active role, but the actuary had first, of course, to persuade some solicitors that he had something more to offer than a figure in a deed.

On equitable allocation of duty saving, he favoured methods which, firstly would produce consistent results in varying circumstances, and secondly would secure for each beneficiary something more than a nominal share of the 'duty reversion'. There he differed in emphasis from the author. The author postulated that every beneficiary should receive a substantial fraction of any 'duty reversion'—a definition which might include a reversionary life tenant whose interest had only a nominal value.

The dual nature of the problem had already been stressed by the opener of the discussion. The beneficiaries could be visualized as unequally armed soldiers. The reversionary life tenant usually carried a pike. He had a moral value; but he should not be turned into a highwayman.

When the life tenant could treat with each reversioner separately, it was clear that the reversioner who was entitled to $1/n$ th share of the fund should secure $1/n$ th of what a reversioner to the whole fund should obtain. Beneficiaries in parallel introduced no particular difficulty. Beneficiaries in series were the problem. The series might consist of a single tier, i.e. life tenant T_1 followed immediately by reversioner R_1 . Or the trust might be multi-tiered. The simplest example he could give of a multi-tiered trust was a two-tier trust with three beneficiaries; namely, life tenant in possession T_1 , reversionary life tenant T_2 , reversioner R_2 . Let it be supposed that in that two-tier trust there would be estate duty on the death of T_1 , and further estate duty on the death of T_2 if after T_1 , but not before. It was true that T_2 and R_2 could combine together and present an equivalent to the beneficiary R_1 in the single-tier trust. That was the closure principle. Yet, equally, either T_2 or R_2 separately could stand out against the other beneficiaries.

The author's solution for a single-tier trust (T_1 and R_1) gave an equal division of the duty reversion. It seemed to follow that, to be consistent, in a two-tier trust T_1 , T_2 and R_2 should share equally, each getting one third of all duty reversions. But the author, in dealing with single-tier trusts, had discarded proportionate division in all cases because in some circumstances he found it unsatisfactory. But he refused to accept the arguments which underlay equal division when he came to multi-tier trusts; his procedure lacked consistency.

He (the speaker) did not see how any satisfactory solution of the problem could be attempted by concentrating on the single-tier trust—because it was a special case. A consistent pattern of results could only flow from a consideration of the general case, which was the multi-tiered structure (containing an annuitant within or overlapping a life interest).

From tests which the opener and he had made, the proportionate method emerged as a good foundation. The closure principle had to be applied with multi-tiered trusts. Sums appointed free of duty had to be grossed up. The proportionate method then usually produced satisfactory results. For the fringe cases modifications had to be devised, notably where a very high duty rate was associated with a small value of the following reversion factor. (Those modifications were rather complicated to demonstrate.)

Low rates of estate duty would often be associated with lightly taxed life tenants. Those beneficiaries introduced special considerations into the basic calculations. The duty-saving element would then become submerged in the special problem of equating personal values with the fund.

He found the author's recommendations as a whole too rigid for his own taste, and he felt that they contained artificial restrictions on actuaries' freedom of action and therefore on their judgment.

Earlier in his remarks he had used the phrase 'consistent pattern of results'. The problem as he saw it was a multi-dimensional problem requiring solution in depth. Therefore, his pattern would not be flat. The author's was.

There were clues in the paper to the sources of that rigidity—that oversimplification. The first quotation from Jellicoe perhaps betrayed an understandable wish on the part of the author for a simpler life, but the heart of the trouble was in § 8 where the author laid down as a basic requirement something which as a basic requirement he (the speaker) felt obliged emphatically to reject as most dangerous.

The author said:

The requirements of a proper basis of apportionment may be summarized under three main headings:

...

(c) Ease of explanation, so that the method employed can be at least described concisely for understanding by those unacquainted with the subject.

If the author had been content to say that it was of practical advantage if the results could be interpreted within a simple framework, he would have agreed wholeheartedly. But the author went further and required simplicity as a *sine qua non*—dragging in an unwilling client as judge.

It was to the Institute that actuaries brought their theories and their methods for discussion. If informed opinion approved what they did—however complex the theory or methods involved might be, that to his mind was the acid test.

Mr L. T. Hayes said that the paper would perform a valuable service if by its discussion it promoted unanimity of thought on the basic principles and on the form of report desirable.

The author had dealt only with the simple case, though in practice many of those which came before the actuary were of a far more complex nature.

He thought it was fairly generally agreed that a net rate of interest was usually most appropriate to use for apportionment, though it might favour the reversioner, but it might be asked whether that rate should be used where the rever-

sioner had no liability to income tax, as in the case of a charity. His expectancy in reversion was no more than that of the ordinary taxpayer, but on an immediate distribution of the fund he could benefit himself financially to a far greater extent. He would welcome the views of the author on that point, and he wondered whether in such a case it might not be more suitable to use a market value as the basis for apportionment or perhaps better still, as had already been suggested, to use a rate of interest somewhere between the net rate and the gross rate. Personally, he would not advocate market values in every case.

As to the method of sharing the benefits on apportionment, he was interested to know that the author inclined towards equal division, but he was not convinced by his reasons. In many cases there would not be a great deal of difference in the results obtained by either an equal or a proportionate division. The objection to the proportionate method seemed to be that the elderly life tenant would receive only a small proportionate share, as would also the reversioner where the life tenant was very young; but was not that quite reasonable, even though the consents of both parties were necessary? The opener of the discussion had already made the point that a company with shareholders might well have to obtain their consent to a scheme of capital distribution, but nobody would suggest that those shareholders should share equally in the distribution, but rather that they should share in proportion to the size of their holdings in the company. So with the life tenant and the reversioner, it would seem far more reasonable to divide any unexpected benefits in proportion to their interests in the fund. Where there were successive life tenants, the interest of the reversionary life tenant was often comparatively small, and she might be only a minor party to the scheme. He imagined that her interest had to be acquired by the life tenant in order to secure the enlargement of the life tenant's interest into a fund in possession, so that no question of estate duty on the fund would arise. It seemed most reasonable to him that the reversionary life tenant should share in the benefits proportionately to the value of her contingent life interest. It would, he thought, be most unreasonable, as Mr Goodchild had said, to divide the savings between life tenant, reversionary life tenant and reversioner in three equal parts simply because they all had to consent.

To those who had practical experience of the promotion of schemes of purchase there was no need to emphasize how helpful a full actuarial report could be if it explained simply and clearly the comparative benefits to each party. He was in agreement with Mr Goodchild's remarks on that subject. Such schemes, often involving application to the Court, had to be explained to the life tenants—who might have to raise large sums of money—to trustees, reversioners and others. A scheme might take a long time to put through, and promoters did appreciate a price being quoted as a percentage of the value of the fund so that they could use that in final calculations when the purchase could be completed. He could see no harm in that, provided a warning was given that if there was any change in financial conditions or any considerable delay in completion, the percentage might require revision to conform with the original principles on which the price had been recommended. His own practice was to quote a percentage value at the time of the report with such a warning, and at the same time to show the effect of that percentage on the value of the fund at that time. It should, he thought, be emphasized in the report that the market value of the reversion was inappropriate as a basis for purchase by a life tenant, for obvious reasons, when duty was involved.

The actuary could only state what in his opinion was a reasonable and proper value in the particular circumstances, and he thought it was important to say all that to promoters of the schemes, who wanted to be satisfied that there was no element of gift in the purchase price paid.

Mr H. E. Elderton did not wish to be deliberately provocative, but thought that a much simpler solution could be found which would, in fact, obviate some of the difficulties which it had been suggested would arise under the methods given in the paper.

In the first place, he saw no material difference in underlying intention between an apportionment and a purchase for control. Comparing an apportionment which was to be a fair one and a purchase for control (in which case the figure fixed should be one in which no element of gift arose) there ought to be a near identity of position. It seemed to him that it was merely a question of what was the most convenient way of mitigating the effect of estate duty, income tax and surtax.

The life tenant's saving was limited to income tax and surtax, and the rate of estate duty had no direct financial bearing on the question so far as she was concerned.

The reversioner's saving was limited to estate duty. As a corollary to that, whatever the rate of estate duty, the life tenant would be justified in fixing the price to be paid to the reversioner by reference to what she considered to be the amount by which her free estate should be increased as a result of the purchase. She was not concerned with estate duty at all. In his view, it was quite arbitrary to consider the transaction solely from the angle of the market value of the reversioner's interest modified by a share (which could vary from all to nothing) of the estate duty saved.

Further, it seemed illogical to establish the estate duty position by reference to an aggregated liability bringing into account the whole foreseeable position in so far as the reversioner's interest was concerned, and at the same time to limit consideration of the life tenant's interest to one bringing into account income tax only and ignoring surtax. That was no doubt a concession to the fact that the life tenant's interest could indeed be sold on a gross basis to the trustees of an approved tax-free fund, for example, an approved superannuation fund or widow's fund.

He suggested that it might be more reasonable to adopt the view that if the life tenant's liability to the Revenue was considered as being limited to income tax only, then it was equally proper in the case of the reversioner to consider only the estate duty liability on the fund in question. But he thought that even that went too far, and he did not agree with it. He preferred to see estate duty ignored altogether.

The life tenant could scarcely expect to increase her free estate by more than the value of her gross income, and it seemed reasonable to assume that she would be satisfied if the gross income were valued at a gross rate of interest.

If that were accepted, it followed that if the interests of the life tenant and the reversioner were together to total the amount of the trust fund less expenses, then it was appropriate for the life tenant to pay the reversioner a sum equal to the value of the reversioner's gross expectation valued at a gross rate of interest, less expenses. That seemed to be entirely consistent also when it was borne in mind that the object of the transaction was to mitigate the effects of estate duty and that the reversioner was the only one concerned in that respect. (The life

tenant could acquire a personal liability to estate duty, but only if she failed to apply the increase in her free estate to the replacement of her loss of income by an ordinary annuity.) The life tenant might elect to purchase some form of capital annuity, or alternatively to spend the money as soon as possible; either prospect might have been one of the reasons the arrangement was entered into, but it was no concern of the reversioner.

Considering the position if calculations were to be made on a gross basis, using *a (f)* ultimate mortality, he suggested that the valuation rate of interest should be equal to the gross rate earned on the trust fund with a minimum equal to the gilt-edged rate appropriate to the expectation of life of the life tenant. For the trust fund described in the Appendix to the paper, the valuation rate of interest determined in that way would be taken as the yield on $2\frac{1}{2}\%$ Consols, namely £3 12s. 6d. % per annum, not the yield on the whole fund, namely, £3 6s. 8d. %. Most of the trust funds which he had seen recently had had a running yield of about 4 % per annum, but for the purpose of making comparisons with the figures quoted in the Appendix £3 12s. 6d. % seemed to be appropriate.

He found that for a life aged 50, if the gross basis were used as he had suggested, the payment made to the reversioner would be £19,500. That compared closely with the mean (£18,700) of the figures given in the Appendix (i.e. half-way between the 2 % and $2\frac{1}{2}\%$ interest figures) on the 40 % estate duty basis and assuming a proportionate distribution of the estate duty saved. The mean figure assuming no estate duty was £13,500, and the mean figure assuming estate duty of 40 % and an equal distribution of the estate duty saved was £18,200. The £13,500 figure was, he thought, untenable. The life tenant could not purchase a corresponding annuity equal to her then gross income for less than about £18,700, and she could sell the whole interest to the trustees of a tax-free fund and get £13,500 as a price in the open market. He felt that £19,500 and £18,700 were the proper figures irrespective of the estate duty position.

For the life aged 75, on the gross basis the figure was £9,100, which compared with the mean (£9,000) of the figures given in the Appendix on the 40 % estate duty basis and assuming a proportionate distribution of the estate duty saved. If no estate duty were assumed, the mean figure was £6,000, and with 40 % estate duty and an equal distribution of the estate duty saved the mean figure was £11,400. The life tenant could sell her interest for £5,600, and he did not think the £6,000 figure was anything like enough above that.

The opener had mentioned the question of two funds of equal capital values but with different incomes. If differential rates of interest were used, he (the speaker) thought that the gross basis would result in a sufficient adjustment being made to meet the point which the opener had raised. It might be appropriate to deal with the fund by splitting it into bits and to combine the separate resulting values.

He thought also that the adoption of the gross basis provided sufficiently accurate answers in the case of trusts subject to more than two interests.

It was admitted that on the net basis occasions arose where the ordinary method of approach gave an unsuitable answer and a modification was called for. In his submission, the gross basis suffered no more in that respect, and where it was thought a distortion did arise, it could be modified in much the same way.

Mr P. F. Hooker thought that it was probably more true of the subject under discussion that evening than of any other subject that if the same problem were submitted to six different actuaries, six different answers would be

obtained. That was perhaps a little unfortunate, but it was inevitable in a matter in which there was so much scope for individual judgment. The author was therefore wise in emphasizing, at the very beginning of the paper, the two statements that had been made by Jellicoe so many years earlier.

In § 21 of the paper, the author said that 'personal taxation of both beneficiaries could affect the result very materially, particularly if surtax was involved.' But in § 22, if he understood it correctly, the author went on to suggest that surtax should be ignored, and stated that he would use a rate of interest of 2% in the conditions set out in the paper. While he fully agreed with the author that it would be unwise to strain after refinements in estimating the future course of rates of income tax and surtax he felt that some account should be given to them if either party was paying little or no tax at the standard rate or, alternatively, paying surtax at a high rate. It was obvious, for example, that if the reversioner was paying surtax at a high rate and if he was asked to accept, apart from any share in the saving of estate duty, a sum which was calculated on the assumption that he would be able to invest it at 2% net, it would be quite unattractive to him. Similarly, if the life tenant was receiving little income apart from her life interest and if that life interest was small, so that she was not paying much tax, a price calculated on the assumption that she would be content to receive the value of an income of 2% of the fund would obviously be unattractive to her.

His own practice was to try to obtain some information about the taxation position of the parties; when asking for this he made it clear that he was not expecting details, but merely a rough idea of their taxation position, and he found that he always obtained it. If either party was paying a high rate of surtax or, alternatively, only a low rate of income tax, he made some allowance for that fact in arriving at the net rate of interest to use.

It might be contended that, in calculating the value of the life tenant's interest, account ought to be taken of the estate duty that would be saved on her free estate; when she died, instead of the whole of the trust fund being aggregated with her free estate, as would have happened if the apportionment had not taken place, the only amount to be aggregated with her free estate would be the sum which she had in effect received from the apportionment, or such portion of that sum as she did not spend during her lifetime. The problem was a difficult one and the author had not dealt with it. It could be argued that no allowance should be made for that saving of duty because the benefit of the saving would not be received by the life tenant herself, but by her estate. It might also be pointed out that the value of that saving could not be calculated accurately because it was impossible to say how much of the sum which the life tenant received from the apportionment would remain unspent at her death. However, he felt that some allowance ought to be made for it; sometimes it made a considerable difference. In fact, it might quite easily reduce the value which the actuary calculated below the market value; he would suggest, however, that she should never receive (apart from any share in the saving of estate duty) less than the market value of her interest.

Mr Geoffrey Heywood made no apology for stressing at the outset the great changes in the background to all such transactions which had taken place since Anderson's paper. The apportionments made thirty years earlier had probably been made purely for the purpose of obtaining some ready cash. At the time of speaking, the situation was entirely different owing to the enormous increase in taxes. In almost every case that came along, his experience was that

the object of the transaction was to avoid some of the high taxation which everybody suffered. It was a well-known legal dictum that it was open to any man so to arrange his affairs that he legally suffered a minimum of taxation, and it was the pursuit of that principle which had resulted in the enormous number of trust terminations which were taking place.

He wished to say a few words about a termination by negotiation at arm's length. Those cases were few and far between, but in his view, if a trust was terminated by arm's length negotiation and if the parties were separately advised by independent actuaries, then whatever the purchase price paid by the life tenant he could not see that there could be any element of gift.

It was the other cases—the cases of termination by mutual consent—which were more numerous and more difficult. He was glad that the opener had referred to the two clear-cut situations that occurred. The first was that in which the transaction took place according to the principle of personal preference, and that meant that the parties could consent to any figure and all was well, provided that the life tenant lived for five years. He had known a reversioner once who had six marbles to sell; the reversioner's mother had mutually consented to buy them from him for £1000 apiece. He was glad that he had not been asked to say whether there was any element of gift in that transaction, but it was an example of an application of the principle of personal preference, and some trusts were terminated in that way—although the figures might be less extreme.

The cases where the actuary's duty was greatest and where his responsibility was heaviest were those where the termination took place according to the principle of indifference. In such a case there were many methods which actuaries used in arriving at a price for purchase by the life tenant for control. There was the author's method of equal apportionment of duty. He, personally, could not support that method, for the reasons which other speakers had already given. There was also the net proportionate method, to which the opener and others had referred. While that method was widely used, it did suffer from the disadvantage that it did not give sufficient emphasis to the income tax and surtax position. In valuing under the net method, a life interest was generally valued after allowing income tax at the standard rate and surtax was ignored, with the result that the same purchase price was brought out whether the life tenant was paying tax at 3s., 9s., 15s. or 19s. That he considered to be a result which it was difficult to justify. There was no doubt, in his experience, that the higher the rate of income tax and surtax the life tenant was paying, the greater was her desire for the apportionment to take place, and that fact did not appear to him to be fully recognized in the net proportionate method.

There was also the gross method which he believed was used by many actuaries. He had heard the people who used it argue convincingly that it was based on the principle that if the object of the transaction was to avoid income tax, surtax and estate duty, then surely it should be assumed that they did not exist. That might be the position at the actual point of time when the transaction took place, but there again he could not support the gross method because it produced the same result for a duty-free fund as for a fund which suffered duty at 80%.

He was afraid that most of his comments had been in the nature of somewhat destructive criticism, and he had little constructive to offer. The reason his remarks had taken that form was that in his view there could be no fixed, definite and rigid method. There were few problems that called for the judgment, discretion and experience of the actuary as much as did those problems.

Mr H. W. Johnson said that he had been much struck by the first part of the quotation from Jellicoe with which the author had prefaced the paper. It was clear from the contributions already made to the discussion that practising actuaries used several different principles to deal with two fundamental issues: the evaluation of the basic interests of the beneficiaries, and the method of division of the residue. He would support the approach made by the opener.

After reading the paper, however, a shadow of doubt had crossed his mind. Perhaps it was Mr Hooker who had crossed his path, for he had wondered, like Mr Hooker, how far outside the fund actuaries should look and how far they did look in assigning values to reversioner and life tenant on the break-up of a fund. He used the term 'break-up' to denote a purchase by the life tenant for control. What he had in mind was the effect of the break-up on other property in which the beneficiaries might be interested. Purchase for control reduced immediately the amount of estate passing on the life tenant's death, and so was likely to reduce the presumptive rate of estate duty on her free estate or other settled property. If the life tenant had free estate, she would be in a position to settle some or all of it and confer the gift of reversion upon any person. The value of the gift would be greater after the break-up than before, or alternatively a smaller sum had to be settled to provide a gift of a particular value. The benefit was, however, only appreciated by the life tenant if she took some step of that sort, and he thought it would be well-nigh impossible to put any weight to it when calculating the relative values of the interests in the break-up of the existing fund. If the life tenant was also life tenant of another fund which would be subject to duty on her death, the reversioner to that second fund would immediately, on the break-up of the first fund, enjoy an increase in the value of his reversion. If he was not a party to the transaction, no account of his gain could be taken in the calculations of the values of the life tenant's and the reversioner's share in the fund. But suppose that both funds had the same reversioner: should the actuary then ignore the increase in value of the reversion to the second fund? He thought not; but he imagined that in general the actuary's instructions would be insufficient in detail to give him warning of the special advantage to the reversioner in breaking up the first fund.

One or two speakers had perhaps leaned a little towards the life tenant when they were considering what values should be adopted, and he wondered whether they leaned that way because the life tenant, instead of having a certain income for life, was, by participating in this sort of transaction, accepting a gamble. She was gambling that the capital sum which she got out of the transaction would be sufficient, if drawn on from year to year, to provide her with at least as much net expendable income for the remainder of her lifetime. He was not sure that he sympathized very deeply with a life tenant who had decided to take capital in place of income. He thought that the fact that she was taking a gamble should be disregarded as soon as the actuary was approached to advise both parties independently, because he thought that it was implied that the life tenant had made up her mind. He felt that if she had not made up her mind, it would be the reversioner who would be pressing for the transaction, and in that case the actuary would have to see that the life tenant received sufficient from the fund to purchase an annuity to make up her income. If she was concerned only with the maintenance of income, then the reversioner need only leave her out of the fund sufficient to replace that income. He did not feel that any more had to be given.

Mr R. C. B. Lane found difficulty in considering some of those purchases for control (and he thought it was important to remember that they were purchases and not apportionments) in the fact that precisely what the parties usually wanted was an element of gift to the reversioner. They would often like the price to be as high as possible in order to pass over immediately as much as possible duty-free. He thought that, implicit in many of the instructions that the actuary got, there was that conflict. Often the reversioners were the children of the life tenant and in such cases he found it useful to turn from the trust as it stood to see what would be the position if the reversion instead of being to the children was to a charity or some other complete stranger. There was then less inclination to favour the reversioner to the same extent as some of the methods mentioned in the discussion would imply.

He thought it was necessary also to remember that, in considering an element of gift, the authorities were much more likely to look at a market value and ask themselves whether it was reasonable that the price for the transaction should be so much higher than the market value. He felt that it was instructive to consider reversioners who were not relatives and to see to what extent it was reasonable to increase the value above the market value—to look, in short, to the market value approach and see how it might be varied.

When that was done in detail, he thought it was fairly clear that a liberal view could be taken of margins for market fluctuations, even to the extent of eliminating them completely. It was true, too, that, unlike a purchaser independently in the market, it was fair to apportion the saving in death duties. It was the special value which a special purchaser could pay which went free of duty in those cases.

He thought it was perhaps reasonable to allow a certain amount in the rate of interest, but it was dangerous to start going right down to some of the very low net rates, and it was also, he thought, quite wrong to apportion the whole of the duty to the reversioner as he had seen done on one occasion, in other words, to eliminate duty entirely in the calculations. Sometimes solicitors had taken the view that that was possible. He believed that a recently published book had made some reference to the possibility; but he felt that it was wrong to go to that extreme and that actuaries should set themselves against it. After all, if by getting rid of the element of gift a price for the reversion was obtained which was less than the life tenant thought it reasonable for the children to have, it was still open to her to pay over more; though the extra might be subject to a five year waiting period.

Mr E. Kingsley Read, in closing the discussion, said that it was indeed surprising, as the author said, how infrequently that branch of the actuary's work came up for discussion. His first pleasure in noting the subject had been increased by seeing that the paper was a comparatively short one. Perhaps he was not alone in thinking that some of the papers they were asked to consider were rather too long for proper digestion by busy actuaries. Certainly, that criticism could not be levelled against the author's paper; but in compressing it, he had obviously had to limit himself in scope, and in a sense that was a great pity, because it might be a long time before they 'passed that way again'.

However, in limiting himself to the most simple trust conditions, the author had narrowed the field in which he could be attacked. Apart from the possibilities of attack (of which he was sure the author would not be afraid) it would

have been an advantage to have on record the views of an experienced practitioner for the future guidance of actuaries. The cases which the author had passed over were the very ones which gave rise to the difficulties in practice and on which different actuaries were apt to give different opinions. He was therefore sorry that it had not been possible to deal with some of the more complicated trusts—for example, those with contingent interests, or trust funds subject to some fixed benefits and some varying ones.

Personally, he could not disagree with the author's general statement of requirements for an apportionment, which were summarized in §8—a fair balance between the parties, tidiness, and ease of explanation (although that last point was not acceptable to Mr Goodchild). That certainly was not all there was to the report. Ease of explanation and the other points would certainly be satisfied if the method used was that of dividing in proportion to market values, which had from time to time been advocated. It was easily explained, and it was tidy because it used up all the fund. But did it give a fair balance? That was where he thought it might possibly be attacked. They had been warned to see that no beneficiary got less than a market value, and that method obviously avoided that possibility, but he felt that it had to be discarded because it was not a basis which could be adopted invariably. Often there were interests which had no market values owing to their being either too remote or subject to contingencies which made them unduly speculative. The market values in the aggregate fell short of the total value of the fund, and that shortfall was due probably in the main to the margins which the prospective purchasers would take in valuation. Those margins varied according to the nature of the interest being valued and would be different for life interests and for reversions. Moreover, some of the interests might be fixed, like legacies or annuities, and others would be ones which varied according to financial conditions. He therefore felt that he had to abandon that method and find one which would be more universally suitable, giving neither surplus nor shortfall when it was used.

He thought that was what the author really did in his suggestions. First, there were to be decided the bases of mortality and interest, and he would agree that the *a* (*f*) and *a* (*m*) tables were the most appropriate ones; again, that was not to Mr Goodchild's liking, but something more modern might be adopted later on.

The question of interest had been adequately dealt with in the discussion. He, also, could not agree that, whatever the nature of the fund, the interest basis should be the same. He had no doubt that the author would say that there could be exceptions to that, but generally speaking, for a typical fund, whether it was gilt-edged or preference or ordinary stocks, the author seemed to have been advocating, at the time of writing, 2 % net—though probably with recent changes in money values he would suggest $2\frac{1}{2}$ %. If that rate were used on all occasions, there would be the danger of running foul of the market values when funds were more speculative. A high-yielding fund apportioned on a Government securities rate of interest would benefit the reversioner at the expense of the life tenant. He was not advocating a net interest basis precisely equal to the existing net yield of the trust fund. He would certainly tend to discount the interest rate on the high-yielding fund to a rate more likely to be maintained, and the amount of the discount would depend to a large extent on the age of the life tenant and the probable duration of the trust in the absence of a division; also, perhaps, being an optimist like Mr Gardner, he would tend to assume a slightly lower rate of income tax than 9s. in the £. That would probably mean in the end that

for funds other than full trustee securities, he would be using a $\frac{1}{2}\%$ net or 1% net higher rate.

There were other trusts which should not be overlooked. There were those which were yielding an unduly low rate of interest, such as agricultural estates, which were often submitted with a high capital value and a very low annual income. The reasons for the low annual income should be sought. Often the life tenant had a large house with heavy outgoings, possibly a large acreage of unproductive land, and it might be shooting rights which were retained in hand and therefore showed no income, with the expenses of maintaining gamekeepers and so on all charged in the accounts. Such funds showed very low rates of interest, even 1%. A detailed analysis might show that if the necessity arose the property could be made to produce further income. The statement which was put before the actuary was one which was put to the income tax authorities, but it was probably on the higher interest rate that could be obtained by breaking up the estate that the capital value had been assessed.

Many cases, of course, would require individual consideration, and it was really not possible to lay down hard-and-fast rules. He was thinking of wasting assets, leasehold properties, and so on. If there was a substantial proportion in leasehold properties, special steps had to be taken, but where there was only one small property the actuary could consider that property sold and the proceeds reinvested in similar securities to the rest of the fund.

Having disposed of the mortality and interest—with general agreement as to mortality but not quite as to interest—he came to the really important part of the paper, which was the estate duty. Although the heading of the paper mentioned apportionment, actuaries were often asked to exclude that word in their report. It was a purchase for control by the life tenant and the recognized way of avoiding an estate duty liability, which was the normal reason for bringing the case up at all. He was glad to see that the author recommended an equal division of the saving of duty between life tenant and reversioner, and he congratulated him upon his conversion to that method. It was apparently not generally acceptable. If there were only two parties concerned, and neither could act without the other, it did seem to him most reasonable that they should share equally. Whatever the value of their other interests, in order to secure the saving of duty each did precisely the same thing—each signed on the dotted line, and neither could do it without the other. He could see no analogy at all between that case and the shareholders of a business. The objection was sometimes levelled against the method that a person with a very minor interest might take too large a share of the duties. That was Mr Goodchild's multi-tiered fund. He thought that if he himself was a reversionary life tenant with an expectation of a large income, which he would probably not receive because the previous life tenant might be some years younger, he would not be tempted to part with it for a mere song; he thought he would expect his third share of the duty if there were just the three strata—the life tenant, the reversionary life tenant (himself) and the reversioner. After all, if he were only offered half a year's purchase of the ultimate income, was it not better to wait and see? He would feel rather silly if he did outlive the immediate life tenant after he had taken a very small sum.

It was as well to point out when dealing with duties—and in the reports that he made he nearly always said it—that there was no truly actuarial method of dividing duties, and it was really a matter for bargaining among the beneficiaries concerned. Having said that, he then told people that he thought it was equitable that they should take an aliquot share according to their

interest. The reversioners would together take one share and the life tenant another share.

There was one case on which he thought members would have been glad to have had some words from the author, and that was where the life tenant was not able to buy out the reversioner. Purchase was the one method whereby the duties were entirely saved; the life tenant, by buying the reversion, enlarged her interest in the fund. Personally, he could not see why, when the reversioner bought the life interest, he did not similarly enlarge his interest in the whole fund; it did not seem reasonable that there should be a distinction. However, if the life tenant could buy the reversion—and occasionally some solicitors found it a little difficult to allow that—she was supposed to buy the reversion out of other resources, and if she had no other resources, as occasionally happened, the solicitors felt that they had to proceed the other way. Often, he believed, the life tenant could get a bank overdraft entirely unsecured, but the life tenant was not supposed to mortgage any interest coming from the fund. If the solicitors were unduly squeamish, they said that the reversioner must purchase, and then there was a liability for duty if the life tenant died within five years. The amount which was paid to the life tenant was free of duty, but the reversioner's original share was liable for duty if the life tenant died within five years. He would have liked to have had on paper the author's method of dealing with that; it did cause a certain amount of difficulty in apportionment, although the principles were precisely the same. A portion of the fund had to be retained by the trustees for five years, and only became available for division if the life tenant survived. The proportions allocated in the meantime should be on the assumption that the further money would not be available for the beneficiaries, and then if at a later date they were entitled to receive it, the proportions in which it was divided must take into account what they had already received. It could be done, and it was quite a nice little problem!

Mr Hooker, supported by Mr Heywood, had said that he made inquiries into the taxation position and duty position of the beneficiaries in respect of their other assets. Personally, he had never done that and he thought it rather out of place. The free estate of the life tenant might well have its duty reduced, but the actuary did not know where that estate was going; it might well go to the same beneficiary as the fund, and he thought it would be wrong to inquire what the life tenant was going to do with her free estate in her will. What other benefits they received from taxation or estate duty saving, he thought, had to be considered as the incentive of the various parties for joining in the scheme.

He did not wish to comment particularly on the Appendix to the paper, except on one point. At the top of the last page the author said that the sum to be paid by the life tenant was stated as an absolute amount and not as a percentage of the value of the fund after allowance for expenses incurred through the apportionment. Personally, he preferred to state it as a percentage of the fund. Such schemes could not be carried through in five or ten minutes, and the value of the fund might change, not sufficiently materially to alter the rate of interest which was used in the calculations, but on a large fund a few hundred pounds one way or the other might cause the people to whom the report was addressed to wonder what they should do with any excess. He had heard it commented particularly by instructing solicitors and others that it was useful to have the amounts stated as percentages.

The President (Mr J. F. Bunford), in proposing a vote of thanks to the author for his paper, said that he had reminded them that there were various traditional methods of valuation for reversionary interests which had been tacitly accepted by actuaries for many years, and he had also advised them not to overlook alternative methods. That was particularly true where they were discussing the difficult matter of apportionment of reversionary interests where in any case the ultimate decision was in the hands of the interested parties, who might even be disposed to settle some minor difference by such an unactuarial method as the spin of a coin!

It was wise that they should remind themselves that in all matters of valuing such interests the quality of actuarial judgment was of vital importance; indeed, no one who had listened to the discussion could fail to have noticed the different interpretations of personal judgment. It was that matter of judgment which certain other well-worn methods of valuation might lack, and there the author had reminded them in particular of the use of the Succession Duty Act Tables which might lead the non-actuarial calculator astray in circumstances where the use of such tables would be inappropriate.

The comparative infrequency of Institute discussions on the subject might perhaps account in part for remarks which he had heard from time to time that students often found some special difficulty in dealing with that section of the examinations. If that was so, they should be particularly grateful to the author for bringing the subject forward and for instigating such an interesting discussion.

Mr N. Benz, in a brief reply, agreed with the opener that the phrase 'mutual consent' was not ideal. He agreed also that the distinction drawn by the opener between 'absolute indifference' and 'personal preference' could exist, but he would be doubtful about assuming that all the beneficiaries, even if at first absolutely indifferent, would continue so until the final bargain had been struck.

On market values, he thought that he had been taken to task only on the question of life interests. He had been puzzled on hearing that he had placed the same value on income for a limited period irrespective of the yield of the trust fund from which the income issued, but for market value purposes that might well be not dissimilar from actual results.

He had got into worse trouble on the question of interest than on anything else in the paper. He had found Mr Gardner's figures fascinating, but he felt that he might be guilty of introducing those artificial restrictions which had more than once been laid at his own door. Perhaps he might mention that he had carefully chosen his two quotations and, as he had feared that readers might have forgotten them by the time they had got to the end of the paper, he had mentioned them again at the end. So he did not feel very guilty about artificial restrictions.

Reverting to questions of the rate of interest, he wondered about the position of trustees who held strong views about exchanging, as their beneficiaries' interests appeared to demand, from gilt-edged to ordinary shares. He thought they would be astonished to hear of the variations if at different periods the beneficiaries wanted to wind up the trust.

He was grateful for the reception which had been given to the paper, and any trouble he had taken in preparing it had been more than amply repaid by the full discussion.

Mr G. C. Lund has written:

I have had the opportunity of seeing a fair sample of the actuarial apportionments coming before the Estate Duty Office in recent years. As was demonstrated in the discussion on Mr Benz's paper, few valuations follow the same lines: much depends, of course, upon the circumstances surrounding each case, and the judgment of the advising actuary. Apportionments are made on bases involving all possible combinations of market value, $a(f)$ $2\frac{1}{2}\%$ value, proportionate division of duty, equal division of duty, etc.; nevertheless, agreement between the interested parties seems to be reached at, or very near to, the figures suggested by the actuary.

As regards the apportionment of the duty saved in a direct division of the trust fund, there seems something to be said for giving a life tenant aged 60 a greater proportion than would be given to a life tenant aged 80, since the reversioner stands a greater risk, in the latter case, of having to pay estate duty on his share of the fund after division. On the other hand, a life tenant aged 80 may feel aggrieved if the reversioner takes practically the whole of the duty saved as a result of the valuable consent given by the former; and it is difficult to see why the apportionment of the duty should be made to depend upon the rate of duty, as it does in the proportionate method. On the whole I favour an equal division between the life tenants as a class and the reversioners as a class, with a proportionate division within each class according to the values of individual benefits, but I do not suggest this is necessarily more correct than any other method.

I agree with several speakers who consider that the normal method of apportionment requires modification in the case of a purchase by the life tenant for control. A direct apportionment does not prevent an estate duty claim from arising on the reversioner's share of the fund in the event of the life tenant's death within five years, and in my experience the reversioner is normally left to bear this burden alone. A purchase for control does, however, avoid such a claim: the reversioner therefore stands to gain by the transaction, and although the life tenant may benefit because of a reduction in the total estate for aggregation purposes on her death, the advantage seems to lie with the reversioner. As the theory is that the life tenant is buying the reversion, and not some other interest, and the holder of a reversion expects a net interest yield higher than $2\frac{1}{2}\%$, there is, I think, an argument in favour of taking as the valuation rate of interest in a straightforward 'purchase' case, if such exists, a net yield obtainable on reversionary investments, say, 3% or more.

The author and several speakers mentioned the element of gift. It is unlikely that any question of bounty would arise in a case where the parties receive actuarial advice, but in a family trust there may well be—to express it one way—some reluctance on the part of the life tenant to dispute a high price placed upon the reversion. Each case must, of course, be considered on its merits, and so far as the Estate Duty Office is concerned the matter is largely hypothetical at the time of the purchase. The provisions of Section 44 (3) of the Finance Act, 1950, are inapplicable where there is a purchase by the life tenant for control; a certificate is not obtainable from the Commissioners, but in practice, if the necessary conditions are satisfied, the Estate Duty Office will give a written assurance absolving the trustees from liability to duty in respect of the fund transferred to the life tenant without prejudice to any other claims which may arise against other persons, e.g. beneficiaries. Apart from the question of bounty there is the possibility

that new legislation may be introduced before the death of the life tenant; in this connexion reference may be made to *Re Barnato, Joel v. Sanges* [1949] 1 All E.R. 515.

Mr N. Benz subsequently wrote:

A number of speakers made points based on the section of the paper entitled 'Requirements of a proper basis for apportionment'. The opener, in drawing attention to the well-worn phrase 'mutual consent' referred to 'equivalence of desire' for the transaction, and this is a phrase which I find useful in practice. He very properly drew attention to the possibility of the parties giving 'mutual consent' to a basis related to, say, market values, which no actuary would care to put forward without ensuring that the parties were also made aware of the possibly very different figures connoted by 'equivalence of desire'; the situation contemplated in §7, as Mr Goodchild surmised, was that existing when the parties were being separately advised. Mr Hooker was pessimistic about the value of actuarial reports, but, unpalatable as this line of thought might be, it cannot be entirely dismissed—surely one cannot hope to contract out of the economics of the market place, especially when it might be so clear that any reduction in one beneficiary's benefits would automatically result in an advantage for the other beneficiary. Mr Lund's remarks on this point are of especial interest.

Several speakers, notably Mr Heywood, Mr Hooker and Mr Johnson, referred to the possibility of making inquiries about the personal circumstances of the beneficiaries, and Mr Lane even suggested that it was desirable to go through the motions of forgetting actual relationships between beneficiaries. As indicated in §34, it has never seemed to me necessary to put beneficiaries through searching financial tests because the results, when applied to the common type of trust under which, say, four reversioners are to share the fund equally on the life tenant's death, can hardly fail to be so various as to excite the 'surprise and distrust' which was feared by Jellicoe. Mr Hayes asked about charities, and I should be reluctant to take any action which would appear contrary to the intention of Parliament when charities were exempted from income tax.

Mr Gardner suggested that life tenants' interests should be safeguarded particularly closely by reason of the role of the Inland Revenue, but it seems to me indisputable that the beneficiaries' parts should be regarded as of equal weight, and the fact that the Revenue might appear at a very late stage in the drama should receive no more emphasis than was mentioned in §7. After all, as Mr Goodchild implied, beneficiaries might also assume the role of litigants, after everyone had thought the show was played out! Here again Mr Lund's remarks are of especial interest.

It seems that Mr Goodchild misread point (c) in §8—that requirement merely pointed to understanding, but not necessarily acceptance, of the figures put forward, and I am not sure that simplicity is a synonym either for conciseness or ease of explanation.

The opener and others rightly emphasized the distinctions between purchase for control and apportionment of the actual trust fund. Mr Goodchild's reference to discouraging an unnecessary break-up of a duty-free fund was presumably based on the once-for-all character of a break-up but I find it less easy to follow his concept of the actuary sitting at the hub of the wheel; if this analogy were pressed too far I should be rather afraid of assuming professional responsibilities not of an actuarial character. To use Mr Goodchild's other analogy, by all

means let us prompt, but do not let us find ourselves in the position of playwright.

A number of speakers implied considerable firmness in the definition of the market in life interests—Mr Gardner suggested that the life tenant is unlikely to become difficult to trace, which is generally true, but he did not mention the possibility of the trust fund being reinvested by trustees no longer under the necessity of maintaining sufficient income for the living expenses of, say, a widow who had been accustomed to reasonable affluence. Though there are sanctions to hand against trustees who might be tempted to go to extremes, these sanctions would scarcely be effective until the holder of the interest had been seriously prejudiced. It was for this reason that I commented earlier that for market value purposes the value of a life interest might well be not very closely related to the yield of the trust fund.

On the mortality of life tenants it is a little strange that no one mentioned the possibility of a joint investigation, a matter which may perhaps be taken up as it was by Lever.*

As to rates of interest—the conclusion of § 22 is intended, taken in conjunction with the conclusion of § 21, to encourage the forecasting of future rates of income tax, a subject which might well have dominated the paper if fully discussed. From various speakers' views I am left with the general impression that actuaries use for a gilt-edged fund a rate of interest intermediate between the gross long-term British Government rate and its current net equivalent, to be determined largely by current views on the trend of the standard rate of income tax. This provokes interesting speculation as to the contents from time to time of actuarial reports but, for myself, I will now venture one comment—I doubt whether on investment income we can hope to see any great reduction in the present rate of 9s. in the £, despite Mr Gardner's and Mr Read's optimism. As the latter surmised the wording of § 23 is intended to leave the way open for variations in the rate of interest dependent upon the circumstances but, here again, a difference of opinion must be recorded; if circumstances were such that it seemed very unlikely that the holdings would be varied, then I would seek the best possible estimate of the future income, and not the diminishing income suggested by the opener nor the maintainable income suggested by Mr Read—I much prefer Mr Gardner's approach of earning potential. I do not favour Mr Elderton's approach and I have in § 20 already described as unpromising Mr Lund's suggestion that the rate should be related to the yield expected by buyers of reversions.

I cannot leave this topic without again referring to Mr Gardner's remarks—in matters of this sort it is, in my opinion, inappropriate to refer back to testators' intentions, which he calls in aid of the actual yield of the trust fund as the basis. Further I am left with the feeling that he has a greater regard for the main suggestion put forward in Anderson's paper of 1925 than have most other actuaries; though the rates mentioned by Mr Gardner would no doubt be reasonable in many circumstances, I should not like any *cachet* to become attached to them because the terms he employs are necessarily so vaguely defined that they might well be used inappropriately even if interest rates generally were to continue unchanged.

As to the question of the destination of the present value of the estate duty saved, Mr Bayley, Mr Gardner and Mr Goodchild clearly contemplate that on occasion the life tenant should receive as a prior charge any short-fall in the value initially placed on the life interest as compared with the estimate of market

* *J.I.A.* 53, 1.

value. This practice might be justified on some such line of argument as appears in § 10, but I think the proper comparison is between the market value of an interest and the amount finally determined. As to equal or proportionate division, the analogy of share-holdings seems weak because it is unknown for the stakes of individual share-holders to change their relationship automatically with the passage of time. Moreover, it can be demonstrated mathematically by differentiation with respect to A_x that on the proportionate method the absolute amount of a life tenant's share in the duty-saving (ignoring the point mentioned at the beginning of this paragraph) reaches a maximum when the life tenant has reached such an age that A_x is rather more than half if the rate of duty is low, or about two-thirds if the rate of duty is near the maximum. By the method of equal division the life tenant, of course, other things being equal, receives an increasing absolute amount under this heading. This fact, in support of the point made at the end of § 28, seems to me as near conclusive as we can hope to find. Mr Goodchild raised the interesting question of multi-tiered trusts, but I cannot follow his suggestion that equal division in the single-tiered trusts automatically leads to the indeed strange results which he foresaw for multi-tiered trusts as the consequence of equal division. As Mr Hayes mentioned, in practice there is often not a great deal of difference between the two methods of division. Mr Goodchild raised another interesting question as to the proper method of allowing for a contingent death duty liability attaching to capital passing to a beneficiary; like him I would use the same interest and mortality bases as underlie the main calculations.

The Appendix, as such, was the subject of very little comment. § A 5, however, was mentioned by Mr Read, who expressed a preference for quoting the final result, whatever the form of transaction, as a percentage of the market value of the trust fund. This practice is clearly much to be preferred when the trust fund is actually to be apportioned but, even after reflection, I cannot alter the views expressed at the end of § A 5, which relates to a purchase for control, for the further reason that the value of a reversion is highly sensitive to changes in market rates of interest—it was surely no accident that the first paper presented to the Institute on matching problems in life assurance (*On the Treatment of the Depreciation in Assets due to an enhanced rate of Interest* by R. R. Tilt, *J.I.A.* 48, 261) was presented by a member engaged in reversionary business.

In their remarks one or two speakers referred to approaches which in their opinion attained good results without, however, specifying any yardstick of 'goodness'. These speakers were, I think, voicing the point which the President put most clearly, that there are so many different interpretations of judgment that apportionment problems must remain a matter for each individual—and that is where I should like to leave the matter, hoping that some of these remarks may stand the test of time as well as Jellicoe's two recorded statements of 1855.