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NOTES ON THE VALUATION OF TAX-FREE ANNUITIES

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The following notes were originally compiled some years ago on the basis of the author's personal experience, both as a Trust Officer and as a valuer of annuities of the type described. Since the notes were compiled a booklet has been published entitled *Free-of-tax annuities*;* and extended reference to the problem has been made in Simon's *Income Tax*. The notes have been brought up to date in the light of the various changes that have occurred in the last few years.—Eds. *J.I.A.*

THE valuation of tax-free annuities presents many problems to the actuary. The importance of the subject is evidenced by the number of cases before the Courts in which these annuities are discussed, by the attention given to them in the Legal Notes contributed to the *Journal*, and by the frequency with which articles appear in the publications of other professional bodies. Much space is devoted to the subject in the well-known standard books relating to law and taxation.

In these notes I propose to draw attention to cases in the Courts where the decisions reached have an important bearing on the determination of the corresponding gross annuity to be valued in particular circumstances. It is true that, for taxation purposes, tax-free annuities have now to be grossed up at the standard rate of tax, but this will not provide a proper basis for the valuation of the benefit accruing to the annuitant. The valuer is concerned with a notional gross annuity related to the annuitant's personal liability to tax, since it is well established that 'free of tax' means free of tax at the annuitant's virtual rate.

In dealing with tax-free annuities, which most frequently arise as gifts under wills, careful thought will need to be given to some or all of the following considerations:

(1) the terms of the bequest,
(2) the application of the rule *In re Pettit* and the effect of legislation,
(3) the purpose and basis of the valuation.

It will be convenient if, first, I deal briefly with the considerations arising under the above headings, before passing to the examples which will show what extraordinary results can be obtained for the value of the notional gross annuity corresponding to the same tax-free sum according to the various factors that are brought into play.

1. THE TERMS OF THE BEQUEST

There is a distinction between an annuity of a stated sum, given free of income tax, and one of such an amount as, after deduction of tax at the standard rate in force, will amount to a certain yearly sum. In the former case the rule *In re Pettit* would apply, and this rule is discussed in the next section.

* *Free-of-tax annuities* by N. Instone Brewer [pp. 36. Gee and Company (Publishers) Limited. 2*s*.].

The rule would not apply in the latter case, and the gross annuity would be obtained by reference to the standard rate of income tax for the particular year (*In re Jones* [1933] 1 Ch. 842); the annuitant would take the benefit of any repayment of tax in respect of this gross sum because of the usual reliefs.

Occasionally the direction is to pay an annuity of a stated amount free of all deductions, but, unless it can be shown by the wording of the will that income tax is to be treated as a deduction, the will would not be so construed. This matter was the subject of a note in the *Journal* on the case *In re Hooper* (*J.I.A.* LXXII, [16]).

Bequests are occasionally made of an annuity to be paid without deduction of tax up to a stated maximum of *xs.* in the £. There was an interesting case on the subject of an annuity of this type where the annuities were directed 'to be paid without deduction of tax up to a maximum of 5*s.* in the £', and Mr Justice Roxburgh held that the rule *In re Pettit* was not applicable (*In re Arno* [1946] Ch. 306; *J.I.A.* LXXIII, [18]). The judgment seemed to fit the facts and to provide a satisfactory basis for determination of the gross annuity in the circumstances most likely to prevail, but the judgment was reversed in the Court of Appeal shortly afterwards ([1947] Ch. 198). Yet it is difficult to see how the rule *In re Pettit* could be applied, for the Court held that the gross amount of the annuity was to be ascertained by grossing the stated amount at 5*s.* in the £, and immediately the rule is applied the gross amount is varied. If the gross annuity had not been fixed, the rule could have been applied by simple use of the formulae discussed later. There has been much difference of opinion on this particular case and, indeed, in Simon's *Income Tax* it is suggested that, in the circumstances, the trustees cannot claim a refund from the annuitant.

The case seems to be distinguishable from *In re Bates*, *Jenks* v. *Bates* ([1946] Ch. 83), where the nature of the provision was such that freedom of tax was freedom at the annuitant's effective rate. The effect of the limitation to a certain rate in the £ was to indemnify the annuitant to that extent against tax ultimately payable by him on the annuity. The rule *In re Pettit* applied to the refund calculated in the usual manner, but the amount due by the annuitant to the trustees was restricted to a proportion in the ratio of the limited rate to the balance making up the standard rate.

I do not propose to make further comment on the problem, but would direct the attention of those who may be interested to an excellent report on the former case in the *Times Law Reports* ([1947] 63 T.L.R. 58) which is well worth reading, if only for reference to cases which have a bearing on the interpretation of phrases commonly used in wills in connexion with tax-free annuities.

Finance Act, 1941, which altered the law governing tax-free annuities, did not affect annuities which are restricted as to the freedom from tax.

2. THE APPLICATION OF THE RULE *IN RE PETTIT* AND THE EFFECT OF LEGISLATION

Where a bequest of an annuity is made free of income tax, and the annuitant, under the provisions of the Income Tax Acts, obtains relief by way of repayment, the trustees of the residuary estate are entitled to ask for such proportion of the sum so repaid as the annuity bears to the total income of the

annuitant. This right arises as a result of what is known as the rule *In re Pettit* from a decision in the case of *Le Fevre* v. *Pettit* ([1922] 2 Ch. 765).

Before 1941, there were certain rules generally accepted in practice for calculating the proportion, and it was usual to ignore the earned income relief of the annuitant in deciding the appropriate refund to be made. This followed the unreported Chancery case of the *Public Trustee* v. *Day* [1922]. When calculating the gross annuity in any year the trustees were allowed to set off, against the stated sum payable under the will, the proportionate refund of the previous year and to gross the resultant net sum at the standard rate of income tax in force. By this method the gross annuity obviously fluctuates in amount from year to year.

Between 1941 and 1945, a notional gross annuity corresponding to the given tax-free annuity was calculated by certain conventional formulae employed by the Revenue by which effect was given to the virtual rate of tax of the annuitant for the year in which the annuity was paid. The notional gross annuity provided the basis both for taxation and for the apportionment of reliefs between annuitant and trustee. It overcame the earlier difficulties and provided a correct solution to a difficult problem.

I was instructed by the Inland Revenue, following upon the decision of the House of Lords in 1945 in the appeal case *Commissioners of Inland Revenue* v. *Cook* ([1946] A.C. 1. H.L.; *J.I.A.* LXXII, [49]), that tax-free annuities should thereafter be dealt with on the basis of grossing at the standard rate of tax the stated annuity or, where s. 25 of Finance Act, 1941, was to apply, the appropriate fraction of the stated annuity.

In the case of *Commissioners of Inland Revenue* v. *Cook* the claim by the annuitant was for recovery of part of the tax deducted by the trustees from such a gross amount as after deduction of tax at the standard rate would provide a net payment of the stated amount of £100. The trustees had, in fact, paid exactly £100 to the annuitant. Surely it would have been logical to regard the gross annuity as £100 on the assumption that the virtual rate of tax was nil.

It is not possible, however, for trustees to carry out the directions of a will to pay a stated sum of £100 and at the same time to observe the provisions of the Income Tax Acts with regard to deduction of tax if the gross annuity is fixed at £100, and here the reason is seen for the *Cook* decision.

It should be observed that deduction of tax is permissive, not mandatory, for rule 19 (1) of the General Rules, Income Tax Act, 1918, is worded:

> the person liable to make such payment,... shall be entitled, on making such payment, to deduct and retain thereout a sum representing the amount of the tax thereon....

It is always possible to make arrangements with the Inland Revenue for gross payments where the circumstances are special, and I have always regarded annuity payments where the rule *In re Pettit* applies as falling within this category. The position is no different from that of a life office which is paying an annuity of £100 where the recipient has no liability to tax, and it is only a question of the method of collection of tax.

The House of Lords dismissed the appeal of the Inland Revenue in the *Cook* case, but it should be noticed that there were two dissentients. The majority expressed the opinion that the annuitant would be entitled to recover the whole of the tax on the corresponding gross annuity of £153. 16*s*. 11*d*. resulting from £100 grossed at the standard rate of 7*s*. then in force, inasmuch

as the trustees had suffered tax at this rate on the income from which the annuity was paid.

It might have been expected that the new ruling would lead to a simplification of the problem, but it has, in fact, revived the anomalies and inconsistencies of the past and added a further complication—the assessment of the correct position as between annuitant and trustee. In my view the decision of the House of Lords did not affect the annuitant's rights but merely showed that the Inland Revenue had no right to repay tax on the basis of notional gross annuities calculated by the conventional methods previously adopted. There was no statutory authority for the practice and so, unfortunately, it had to cease.

From the annuitant's point of view it seems to be immaterial what gross annuity is employed for tax purposes, because the annuitant has the right to a gross annuity of such an amount that when it is subjected to his personal rate of tax he receives the tax-free benefit to which he is entitled. That gross annuity can only be calculated by some such method as was adopted for the notional gross annuity by the conventional methods formerly employed by the Inland Revenue.

Since, for tax purposes, the annuity now has to be grossed at the standard rate of tax, a tax-payer suffers an injustice if thereby he has to hand back to the trustees a larger proportion of the income-tax recovery. A sur-tax payer may also suffer by reason of assessment at a higher rate of tax.

A case, *Commissioners of Inland Revenue* v. *Duncanson* ([1949] 2 A.E.R. 846; *J.I.A.* LXXVI, [16]), has already been brought to the Courts by a widow entitled to £2000 a year free of income tax and sur-tax. She claimed to deduct from her income, for sur-tax purposes, the gross equivalent of the amount which she was liable to pay to the trustees under the rule *In re Pettit*. The Special Commissioners had allowed the widow's appeal and their decision was upheld in the Courts, except that the question was left open whether the net sum handed over or the gross equivalent should be deducted. I believe that the decision is under appeal and that at present the deduction, whether gross or net, is being made for sur-tax payers only.

If the income is to be treated as the gross equivalent of the tax-free annuity without any deduction, the annuitant may lose by this higher assessment should he, by reason of having other income, be asked to hand over to the trustees a proportion based on the higher assessment. The amount to be refunded to the trustees should, I consider, be based on the proportion relative to the notional gross annuity described in these notes and not the gross annuity used for tax purposes. My view, however, does not seem to be generally accepted, for Simon's *Income Tax* quotes examples which suggest that the refund should be based on the tax-free annuity grossed at the standard rate.

The application of the rule *In re Pettit* became more involved with the passing of Finance Act, 1941, which, while permitting trustees to pay a reduced sum to the annuitant because of the high rate of tax then being levied, defined statutory limits to the refund which the annuitant might have to make to the trustees.

S. 25 (1) relating to tax-free payments provides as follows:

> Subject to the provisions of this section, any provision, however worded, for the payment, whether periodically or otherwise, of a stated amount free of income tax, or free of income tax other than sur-tax, being a provision which (*a*) is contained in any deed

or other instrument, in any will or codicil, in any order of any court, in any local or personal Act, or in any contract, whether oral or in writing; and (*b*) was made before the third day of September, nineteen hundred and thirty nine, and (*c*) has not been varied on or after that date, shall, as respects payments falling to be made during any year of assessment, the standard rate of income tax for which is ten shillings in the pound, have effect as if for the stated amount there were substituted an amount equal to twenty twenty-ninths thereof.

The object of the enactment was so to limit the net payment 'free of income tax' that it could be satisfied thereafter by the same gross payment as in 1938/39 when income tax was at the rate of 5*s.* 6*d.* in the £. For example, a pre-war tax-free sum of £290 grossed at 5*s.* 6*d.* in the £ would have been £400, and that gross sum taxed at 10*s.* in the £ would leave the annuitant with £200, i.e. twenty twenty-ninths of the original sum of £290.

With a reduction in the standard rate of income tax to 9*s.* in the £ for 1946/47, Finance (No. 2) Act, 1945, also provided for various alterations in the reliefs and allowances and for appropriate variation of the fraction of twenty twenty-ninths with every subsequent change in the rate of tax so long as it exceeds 5*s.* 6*d.* in the £.

Finance Act, 1941, applied to

any provision...which...was made before (3 September 1939) and has not been varied on or after that date.

The question whether the Act applies to a particular tax-free annuity is of vital importance, both to the trustees making payment and to the actuary who may be required to value the annuity. In 1942, in the case of *Berkeley* v. *Berkeley*, it was held that a provision under a will (which was executed before 3 September 1939) was made at the date of death; but this decision was reversed by the Court of Appeal which held that the provision was made when the will was executed. In the *Berkeley* case, the will was executed in 1936; a codicil had been executed in 1940 confirming the appointment of the annuity under the will, but the Court held that the will was made when it was executed, not at the date of the confirming codicil.

Reduced payments were accordingly made by trustees under the provisions of s. 25 in respect of tax-free annuities bequeathed under wills executed before the relevant date whether the testators died before or after that date. Consequently, it was somewhat disturbing when, in 1946, the House of Lords, in an appeal from the *Berkeley* case, decided that the date of death, not the date of the will, was to be taken as the date of the provision for the purposes of s. 25 ([1946] A.C. 555 H.L.; *J.I.A.* LXXIII, [12]). Trustees were faced with a number of years' under-payments, and the decision of the House of Lords must have had serious consequences for many.

This state of affairs was also of importance to the actuary, who may have been asked to advise upon the value of a tax-free annuity. Such a valuation may have been called for where an estate was insufficient to meet the bequests made by the testator, and the annuitants were entitled to request payment of the cash equivalent of their annuities. The administrators would have proceeded to distribute the estate only to discover that, as a result of the decision in the House of Lords, the annuitants had been considerably underpaid.

3. THE PURPOSE AND BASIS OF THE VALUATION

It is not unusual for arrangements to be made to determine a settlement in circumstances which necessitate the valuation of a tax-free annuity. Such schemes are often devised where a life tenant is entitled to an interest to be provided out of the income of the estate with resort to capital should the income prove insufficient.

The trustees have to account for tax on the annual sum whether it be paid out of taxed income or out of capital. When there is an annual resort to capital, the burden of taxation may be such that the annual payment is unlikely to be maintained for the whole of the lifetime of the life tenant. Other means of satisfying the payments may be suggested and the existing settlement brought to an end. A fresh problem would here be presented, since the income would be limited to the period at the end of which the capital would be exhausted should the life tenant live so long.

If the principles of Finance Act, 1941, applied to all tax-free annuities the actuary would have a firm basis on which to assess the gross annual sum for valuation, because the rate of income tax is unlikely to fall below 5*s*. 6*d*. in the £ for many years to come. Where, however, both the rule *In re Pettit* and the principles of Finance Act, 1941, are continuously applied there may still be a variation in the gross sum due to a change in the circumstances of the annuitant.

In considering what allowance, if any, should be made for variations in the future rate of income tax, it may be recalled that, as recently as 1944, in the case regarding the estate of Viscount Rothermere, Mr Justice Vaisey ruled that no account was to be taken of the possibility of future reductions or increases in the rate of tax (*J.I.A.* LXXII, [29]). The Judge came to the conclusion that the sum for which the annuitant was entitled to prove was the sum (to be arrived at by an actuarial calculation) which would have been required on the relevant date to purchase an amount of Consols sufficient by means of the dividends and by recourse from time to time to capital to provide during the residue of the life of the annuitant the gross annuity equivalent to the net annual sum in question, as reduced by the provisions of Finance Act, 1941, s. 25. No allowance was to be made for any variation in the price of Consols subsequent to the relevant date, nor for brokerage or other expenses incidental to realization of capital, and it was to be assumed that the annuitant had a normal expectation of life. The order thus determined the gross annuity to be valued and the rate of interest to be employed. It only remained to combine those factors with a suitable table of mortality.

The basis adopted in this particular case, where the annuity arose under a deed of covenant by the testator and thus constituted a debt on his estate, appears to be equally suitable for the valuation of a bequest under a will.

Earlier cases decided in the Courts indicate that, where an annuity is required to be valued for purposes of division of an estate, or because the annuitant opts to take a capital sum in lieu of the annuity, the valuation should be made by reference to the Government Annuitants' tables or to the sum required to purchase a government annuity. The basis employed in the *Rothermere* case seems to me to be more reasonable.

4. EXAMPLES OF VARIATIONS IN THE GROSS ANNUITY

I now show by a few simple examples the variations which can result from the particular circumstances of the annuitant.

The decision in the *Berkeley* case suggests that Finance Act, 1941, s. 25, applies only where the testator died before 3 September 1939, but as valuations may still be required where both s. 25 and the rule *In re Pettit* have to be applied I have included such cases in the examples.

I have purposely chosen examples which involve simple calculations and avoided any question of sur-tax, though it should be mentioned that a bequest by will of an annuity free of income tax includes freedom from sur-tax (*In re Reckitt* [1932] 2 Ch. 144 C.A.).

Since it is necessary to determine the notional gross annuity for the purpose of calculating the payments as between annuitant and trustee, I have included the results by the conventional methods employed by the Inland Revenue between 1941 and 1945. These produce gross annuities based on the virtual rate of tax of the particular annuitant, and this is the rate which must be used to ascertain the equitable rights of the annuitant.

Brewer's *Free-of-tax annuities* includes calculations which are based on the same underlying methods. It may be helpful to refer to this booklet, which explains the methods of calculation both for the cases dealt with in the following examples and for others. In order to present the problem as fully as possible I have set out the somewhat elaborate calculations necessary to arrive at the gross annuities shown. It must be emphasized that the examples do not now represent the actual operations between the Inland Revenue and other parties, and only legislation could restore the conventional methods which would satisfy the position both as regards equity and the Inland Revenue.

There is no reason to select rates of tax and allowances in force at any particular time, since they are liable to alteration from year to year, and for simplicity the computations have been based on the rates of tax, allowances and reliefs prevailing during the majority of the war years, when the standard rate of tax was 10*s.* in the £, the reduced rate 6*s.* 6*d.* in the £ on £165, and the personal allowance to a single person £80—there was no liability to tax on incomes up to £120.

The term 'stated annuity' refers throughout to an annual sum bequeathed free of income tax. The gross annuity calculated by the formulae is described as the 'notional gross annuity'. The rule *In re Pettit* is referred to as the 'Rule' and 's. 25' means that section of Finance Act, 1941.

It is quite possible to calculate the gross notional annuity by a mathematical process direct from the net annuity, and I am indebted to the Editors for the suggestion as to the mathematical approach. The following formula can be adapted to all circumstances.

Let A be net annuity—'stated sum',
G be notional gross annuity,
I be other income—gross,
R be amount of tax allowed as reliefs,
t be the standard rate of income tax.

Then total tax $= It + Gt - R$.

Proportion applicable to annuity gives

$$G - A = \frac{G}{G+I}(It + Gt - R),$$

which reduces to the quadratic in G,

$$(1-t)\,G^2 + (I - A - It + R)\,G - AI = 0.$$

In dealing with calculations where s. 25 applies the standard rate of tax must be taken as 5*s.* 6*d.* in the £ and reliefs based on the 1938/39 rates.

In examples (*a*) and (*b*) it must be remembered that relief would be given in full up to £120 and R becomes G*t*.

In other conditions, where the full reliefs are not exhausted by the total income, R must be expressed as the sum of tax at the standard rate on the personal reliefs and of the reduced rate relief on the balance of income—which involves the unknown G. This is easily seen to be equivalent to making *t* the reduced rate and R the tax relief at that rate on the personal allowances.

Case (a). Stated Annuity £100—No other income—Rule applied

There being no liability to tax the notional gross annuity is the stated amount of £100 which is deemed to have borne tax at 10*s.* in the £.

If the trustee were to pay the stated annuity of £100 in full the annuitant would be satisfied, but the trustee has only £50 net income out of which to make the payment. If, on the other hand, the trustee deducts tax, as strictly he should do, he will hand £50 to the annuitant, who can then claim a refund of £50 from the Inland Revenue. Provided the annuitant retains the refund (which is not in accordance with the Rule), he is then satisfied as to his £100, and the trustee finds himself in the same position financially as if he had first paid £100, and then taken the £50 which the annuitant is able to recover from the Inland Revenue.

The practical application is

		£
Annuitant:	receives from trustee	100
	recovers from Inland Revenue ...	50
		150
	refunds to trustee	50
	net receipt	£100

		£
Trustee:	pays to annuitant	100
	suffers by deduction of tax ...	50
		150
	recovers from annuitant	50
	total cost	£100

Note. Following on the *Cook* case and assuming taxation to be on the same basis as in the example, the trustee would pay £100 to the annuitant and give him a certificate showing a gross payment of £200 less tax of £100. The annuitant would recover some part, but not all, of the £100 tax suffered and hand the recovery to the trustee, since he had been satisfied as to his payment of £100 free of tax at his own personal rate which was nil. The anomalies which will arise from this system will be apparent, but it is no part of the object of these notes to deal with this aspect of the situation.

Case (b). Stated Annuity £100—No other income—Rule and s. 25 *applied*

There being no liability to tax, the notional gross annuity is again the amount of the stated annuity of £100 deemed to have borne tax at 10*s.* in the £. The trustee's liability is to pay twenty twenty-ninths of £100 or, say, £69 and the actual operation is as follows:

		£
Annuitant:	receives from trustee	69
	recovers from Inland Revenue ...	50
		119
	refunds to trustee	19
	net receipt	£100

		£
Trustee:	pays to annuitant	69
	suffers by deduction of tax ...	50
		119
	recovers from annuitant	19
	total cost	£100

The refund to the trustee is limited to twenty twenty-ninths of the amount which the annuitant would have recovered if the rate of tax and reliefs applied as in 1938/39, approximately £19.

Case (c). Stated Annuity £250—No other income—Rule applied

The notional gross annuity is obtained by the following simplified method since the annuity is the sole income and is large enough to exhaust all allowances:

	£	£
Stated annuity		250·000
Repayment due on income of £250:		
Personal allowance £80 at 10*s.* in the £	40·000	
Reduced rate £165 at 3*s.* 6*d.* in the £	28·875	
		68·875
		£181·125

This net sum is grossed at 10*s.* in the £, to give the required notional gross annuity of £362·250.

The annuitant receives a net payment of £250 from the trustee, and recovers £68·875 of the tax amounting to £181·125 suffered on the gross sum. Under

the Rule, the whole of the recovery is handed over, and the financial position of the trustee is as follows:

	£	£
Trustee: pays to annuitant		250·000
suffers by deduction of tax ...		181·125
		431·125
recovers from annuitant ...		68·875
total cost		£362·250

In order to obtain a net income of £250, the annuitant must receive a gross income of £362·250 in respect of which his liability to tax would be £112·250. His position would be exactly the same if the trustees were able to hand to him gross income of this amount, and leave him to account for the tax thereon.

It will be noticed that, although the bequest is two and a half times that in case (*a*), the gross annuity is over three and a half times the corresponding gross annuity.

The reader will no doubt observe that the formula used here produces a gross annuity equivalent to that sought in the *Duncanson* case. If the annuity is treated as £500 gross and the annuitant is allowed to set off the repayment grossed at the standard rate, the final result would be the same.

Case (*d*). *Stated Annuity* £250—*No other income—Rule and* s. 25 *applied*

	£	£
Stated annuity		250·000
Repayment due by reference to annuitant's circumstances assuming rate of tax and reliefs applicable to 1938/39:		
Personal allowance £100 at 5*s.* 6*d.* in the £ ...	27·500	
Reduced rate £135 at 3*s.* 10*d.* in the £ ...	25·875	
		53·375
		£196·625

£196·625 grossed at 5*s.* 6*d.* in the £ = £271·207, which is to be taken as the notional gross annuity deemed to have borne tax at 10*s.* in the £.

	£
Annuitant: receives from trustee 20/29ths of stated annuity of £250	172·414
recovers from Inland Revenue	68·875
	241·289
refunds to trustee 20/29ths of refund on 1938/39 basis, i.e. 20/29ths of £53·375	36·810
net receipt	£204·479

		£
Trustee:	pays to annuitant	172·414
	suffers by deduction of tax	135·603
		308·017
	recovers from annuitant	36·810
	total cost	£271·207

This example shows that, with the application of s. 25, the annuitant no longer receives the annual sum of £250 but a reduced amount of some £204; he has to bear the burden of increased taxation.

Case (e). Stated Annuity £250—Unearned income £250—Rule applied

The calculation here is a little more involved and proceeds on the following lines:

	£
Unearned income	250
Stated annuity	250
	£500

Liability at assumed rates:	£
£165 at 6*s.* 6*d.* in the £	53·625
£255 at 10*s.* in the £	127·500
	£181·125

Virtual rate of tax = 181·125/500 = ·36225.
Stated annuity grossed at virtual rate = £250/·63775 = £392·003.

Recalculating, we have:

Unearned income	250·000
Annuity grossed at virtual rate	392·003
	£642·003

Liability:	£
£165 at 6*s.* 6*d.* in the £	53·625
£397·003 at 10*s.* in the £	198·502
	£252·127

	£
Stated annuity	250·000
Proportion of liability attributable to the annuity £252·127 × 392·003/642·003 ...	153·946
	£403·946

It is now necessary to compute the proportion of relief appropriate to the above gross sum of £403·946:

	£
Unearned income	250·000
Annuity	403·946
	£653·946

	£
Tax repayment £165 at 3*s.* 6*d.* in the £	28·875
£80 at 10*s.* in the £ ...	40·000
	£68·875

	£
Stated annuity	250·000
Proportion of tax repayment due to trustee £68·875 × 403·946/653·946	42·544
	£207·456

This sum of £207·456 grossed at 10*s.* in the £ gives £414·912 as the notional gross annuity for tax purposes.

It will be observed that, in comparison with case (*c*), the notional gross annuity varies considerably with a change in the circumstances of the individual:

		£
Annuitant:	receives from trustee ...	250·000
	recovers from Inland Revenue	68·875
		318·875
	refunds to trustee	42·544
	net receipt	£276·331

		£
Trustee:	pays to annuitant	250·000
	suffers by deduction of tax ...	207·456
		457·456
	recovers from annuitant ...	42·544
	total cost	£414·912

In order to justify the result obtained for the notional gross annuity, it will be appropriate to examine the position of the annuitant before and after the bequest of the tax-free annuity.

Pre-annuity income

	£	£
Unearned income		250·000
Tax liability:		
£165 at 6*s.* 6*d.* in the £ ...	53·625	
£5 at 10*s.* in the £	2·500	
		56·125
Net income		£193·875

Income with annuity

	£	£
Unearned income		250·000
Gross annuity		414·912
		664·912
Tax liability:		
£165 at 6*s.* 6*d.* in the £ ...	53·625	
£419·912 at 10*s.* in the £ ...	209·956	
		263·581
Net income		£401·331

The net income of £401·331 would actually be derived as follows:

	£
Unearned income (taxed at source) ...	125·000
Received from trustee	250·000
Received from Inland Revenue	68·875
	443·875
Refunded to trustee	42·544
	£401·331

The increase in net income resulting from the bequest of £250 is seen to be £207·456 only, owing to the fact that the annuitant is passing on a proportion of the reliefs previously obtained on his unearned income, and this increase is equivalent to the tax suffered by the trustee, at the standard rate, on the notional gross annuity.

Case (f). Stated Annuity £250—Unearned income £250—Rule and s. 25 applied

	£
Unearned income	250
Stated annuity	250
	£500

Tax liability on 1938/39 basis:	£
£135 at 1*s.* 8*d.* in the £	11·250
£265 at 5*s.* 6*d.* in the £	72·875
	£84·125

Virtual rate of tax = 84·125/500 = ·16825
Stated annuity grossed at virtual rate = £250/·83175 = £300·571

Recalculating, we have:

	£
Unearned income	250·000
Annuity grossed at virtual rate	300·571
	£550·571

Liability:	£
£135 at 1*s.* 8*d.* in the £	11·250
£315·571 at 5*s.* 6*d.* in the £	86·782
	£98·032

	£
Stated annuity	250·000
Proportion of liability attributable to the annuity £98·032 × 300·571/550·571	53·518
	£303·518

In accordance with the methods of calculation adopted by the Inland Revenue the notional gross annuity would have been regarded as £303·518 but there seems to be no reason why the calculation should not be carried one step further as in the case of example (*e*) to give a more accurate result, as follows:

Proportion of relief appropriate to the above gross sum of £303·518.

	£
Unearned income	250·000
Annuity	303·518
	£553·518

Tax repayment (on 1938/39 basis):	£
£135 at 3*s.* 10*d.* in the £	25·875
£100 at 5*s.* 6*d.* in the £	27·500
	£53·375

	£
20/29ths of stated annuity	172·414
Proportion of tax repayment due to trustees, as limited by s. 25 (4) 20/29ths of ... ... £53·375 × 303·518/20·185553·518	£20·185
	£152·229

This sum of £152·229 grossed at 10*s.* in the £ gives £304·458 as the notional gross annuity.

Again in comparison with case (*d*), the notional gross annuity varies considerably with a change in circumstances.

		£
Annuitant:	receives from trustee ...	172·414
	recovers from Inland Revenue	68·875
		241·289
	refunds to trustee	20·185
	net receipt	£221·104

		£
Trustee:	pays to annuitant	172·414
	suffers by deduction of tax ...	152·229
		324·643
	recovers from annuitant ...	20·185
	total cost	£304·458

Pre-annuity income

	£	£
Unearned income		250·000
Tax liability:		
£165 at 6*s.* 6*d.* in the £ ...	53·625	
£5 at 10*s.* in the £	2·500	
		56·125
Net income		£193·875

Income with annuity

	£	£
Unearned income		250·000
Gross annuity		304·458
		554·458
Tax liability:		
£165 at 6*s.* 6*d.* in the £ ...	53·625	
£309·458 at 10*s.* in the £ ...	154·729	
		208·354
Net income		£346·104

The total net income of the annuitant is actually derived from the aggregate of his unearned income taxed at the source (£125) and the net receipts shown above (£221·104), and amounts in all to £346·104.

The increase in net income resulting from the bequest of £250 is therefore £152·229, which is equivalent to the tax at the standard rate suffered by the trustee on the notional gross annuity.

5. SUMMARY OF RESULTS DERIVED FROM THE EXAMPLES

For purposes of comparison, the results are shown below in convenient form.

Case	Stated annuity	Income other than annuity	Rules applied	Notional gross annuity	Increase in net income
	£			£	£
(*a*)	100	None	Pettit	100	100
(*b*)	100	None	Pettit and s. 25	100	100
(*c*)	250	None	Pettit	362	250
(*d*)	250	None	Pettit and s. 25	271	204
(*e*)	250	£250 unearned	Pettit	415	207
(*f*)	250	£250 unearned	Pettit and s. 25	304	152

Note. The figures have been quoted to the nearest £, and the net income stated in the final column does not include the post-war credit.

These few simple examples show clearly the variety of results that can be obtained from one bequest, according to the particular circumstances of the annuitant and the rules that have to be applied. They indicate the information which an actuary must seek before he can attempt a valuation.

6. CONCLUSION

In the introduction to these notes attention was drawn to the various factors for consideration, and it is now suggested from the analysis of these factors that the valuer of tax-free annuities should

(1) appreciate the different interpretations which can arise according to the terms in which the bequest is made,

(2) satisfy himself as to the rules to be applied, and have a knowledge of the practical application of these rules,

(3) obtain exact details of the financial circumstances of the annuitant,

(4) acquaint himself with changes in legislation and decisions in the Courts which affect annuities of this type, and

(5) make inquiries about the purpose of the valuation.

It is not possible to deal here with every case that can arise in practice, but I hope sufficient has been said to indicate the lines on which a particular valuation should be approached. One further possibility that should perhaps be mentioned is an assignment of such a benefit as has been discussed with the consideration of the change in the benefit which might arise in the hands of an assignee.

Much difference of opinion exists as to the proper treatment of tax-free annuities, and in particular whether refunds to trustees should be based on the

notional gross annuity or the gross annuity now used for tax purposes Following the decision in the *Cook* case it was assumed immediately that a change to the latter basis should follow, but a careful consideration of the matter leads me to the conclusion that the former basis must still be used for this particular purpose.

It may be that some authoritative direction will be given as to which basis must be employed in future but, even if it be decided that calculations must be based on the gross annuity used for tax purposes, the time spent on an examination of the notional annuity will not have been wasted, for the valuer may still need to use this for his own purposes. There would be little or no change in the final results shown in the examples if the gross equivalent of the refund is allowed to be deducted in all cases.

The object of the examples is to draw attention to the widely differing values attaching to a given tax-free annuity according to the circumstances of the case, and the general conclusions reached will be unaffected by any small change in the method of calculation of the refunds.