



**REVIEW BODY  
ON  
ARMED FORCES PAY  
TENTH REPORT  
1981**

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**REVIEW BODY ON ARMED FORCES PAY  
EVALUATION OF SUPERANNUATION BENEFITS**

**Report by the Government Actuary**

**1. INTRODUCTION**

1.1 In its Ninth Report, 1980 (Cmnd 7899), the Review Body on Armed Forces Pay indicated that it had asked the Government Actuary to undertake a specific evaluation of Services' pensions arrangements and to compare it with an evaluation of general pensions practice. For 1980 and earlier years the adjustment made by the Review Body in respect of the value of pension benefits was based on the adjustments used in the context of negotiated pay in the Civil Service. This report, which summarises the information already provided to the Review Body, therefore represents the first detailed comparison of the value of the superannuation benefits available to members of the armed forces with that of their comparators elsewhere. The report quantifies this difference in superannuation benefits but it is for the Review Body to decide to what extent armed forces pay should be adjusted to take into account differences in superannuation benefits. I shall be providing separate advice relating to medical and dental officers in the armed forces.

1.2 Members of the armed forces are pensionable under a Scheme operated by means of Prerogative Instruments. The Scheme is non-contributory and basically provides a maximum pension on retirement at age 55 of about one-half of final pay, together with a lump sum of three years' pension and a widow's pension of one-half the man's pension. Pensions increases, similar to those under the Pensions (Increase) Acts, protect the benefits against price inflation after award. The main provisions of the Scheme are given in some detail in Annex 1.

**2. DATA AVAILABLE**

2.1 The calculations have been based on information supplied by the Ministry of Defence (MOD) and the Office of Manpower Economics (OME). MOD have supplied details of members of the armed forces: numbers by age, rank and salary together with details of those leaving the forces. From this information typical career patterns can be constructed, separately for officers and other ranks, for new entrants to the armed forces allowing for their chances of promotion and for the chances of their Service career ceasing because of retirement, death or withdrawal (with or without a deferred pension).

2.2 Details have been supplied by OME of the pension schemes for those comparators that the Review Body uses for the purposes of pay comparisons for members of the armed forces. As well as summarising the main benefits and the employee contribution rates of each scheme, information was provided on the provisions and practice in relation to increases of pensions after award.

The information for each scheme was provided in one of the following forms:

- (i) a copy of the scheme rule book or explanatory booklet for the scheme's members;
- (ii) a brief questionnaire summarising the main provisions of the scheme;
- (iii) a summary of the main provisions of the scheme as recorded by a firm of management consultants in their survey of employee benefits.

The information provided, although not fully comprehensive, was adequate for the purpose. An analysis of the superannuation arrangements of the comparator schemes is given in Annex 2.

2.3 Details have also been provided by OME of the weighting factor which the Review Body wished to be applied to each comparator scheme when deriving the weighted average value of all comparator pension schemes. In all, information on some 550 comparator pension schemes was provided separately for officers, senior NCOs (sergeants or equivalents and higher ranks) and lower ranks.

### **3. THE NATURE OF THE COMPARISON**

3.1 To compare the benefits of different superannuation schemes a value has to be put on those benefits. Such comparison can only be on the basis of the expected value of superannuation benefits to an average scheme member. An appropriate way to measure these benefits is to express the value of benefits over a whole career as the "normal" contribution rate (expressed as a level percentage of pay); this is the rate that, if paid into a fund and accumulated throughout the career of the average member, would just suffice to provide his benefits if the assumptions made as to interest, inflation, mortality, pay scales etc. were exactly realised. This is the approach adopted, for example, in connection with the adjustment for differences in superannuation benefits for Civil Service pay research.

3.2 However, one special problem is encountered when setting the Armed Forces Pension Scheme against those of the comparators, which is not met when making the corresponding comparison for the Civil Service pension scheme. Most comparator schemes provide pension on retirement at ages in the region of 60 or 65. Thus a full career in the comparator employment would cover the whole span of an individual's working life. As the same is true of the Civil Service, it is meaningful to make a direct comparison between the Civil Service pension scheme and that of a comparator—both schemes are designed for the same basic type of career and it is only the details which differ. The comparison asks the question "what would be the difference in value to the civil servant if, during his Civil Service career, he was subject to the rules of the comparator scheme rather than those of the Civil Service scheme?"

3.3 A direct comparison of this sort does not appear appropriate in the case of the armed forces because, unlike the comparator schemes, the Armed Forces Scheme is designed to provide benefits at an early age (in many cases to people in their early 40s, or even their late 30s) after a career which covers only part of the working lifetime of the individual. The scheme is not, however, designed to make it unnecessary for the forces pensioner to engage in subsequent gainful

occupation. An alternative approach to allow for the fact that the average career in the armed forces is much shorter than the average career in comparator employment, might be to compare the superannuation benefits accruing during a career in the armed forces with those accruing over the same period in comparator employment. The disadvantage of this approach though lies in its unrealistic treatment of comparators; most comparator pension schemes are not designed with significant retirement at these relatively young ages in mind. As it is essential to compare like with like, this approach was not adopted. Instead, it was considered appropriate to take into account what happens after the period equivalent to a career in the armed forces: for the comparator, the superannuation benefits accruing over the remainder of a full career in comparator employment are therefore taken into account; and for the member of the armed forces, account is taken of the superannuation benefits that may accrue during any civilian employment entered into after retiring from the forces. Thus the comparison involves considering the benefits accruing over the whole span of working life.

3.4 The approach adopted therefore considers the value of superannuation benefits accruing over the whole of working life and the comparison made is between:

- (i) the value of the Armed Forces Pension Scheme benefits accruing during a career in the armed forces together with (in the case of those retiring from the forces with an immediate pension other than an invaliding pension) the value of superannuation benefits accruing during any subsequent civilian employment; and
- (ii) the value of the benefits accruing during a whole career subject to comparator scheme superannuation benefits including that scheme's age of retirement.

3.5 When considering the value of superannuation benefits accruing during civilian employment for retired members of the armed forces (as in (i) of paragraph 3.4), it is assumed that the typical civilian employment and its superannuation benefits will be identical to the benefits provided by the comparator schemes. It should be noted that only those who retire from the armed forces with an immediate pension are considered when assessing the value of superannuation benefits during any subsequent civilian employment; these are the members who, but for the special requirements of the armed forces, might have remained in the armed forces for the rest of their working lives. Because these retired members of the forces are actually in receipt of pension, there is room for uncertainty as to whether or not they will enter civilian employment; the extent to which these retired members of the forces will take up civilian employment and any allowance for the fact that those who do might be earning less than they were while in the forces are considered in paragraph 5.9 below. On the other hand those who withdraw from the forces without an immediate pension (whether or not they have rights to a deferred pension) will usually have no other means of support and will therefore be obliged to seek civilian employment. Their position, once they have left the forces, can therefore be assumed to be identical to that of a similar person leaving comparator employment without an immediate pension. For this reason, in a comparison exercise

such as this no allowance need be made for any subsequent civilian employment for those who leave the armed forces without an immediate pension so long as no allowance is made for subsequent employment for those comparators who withdraw from their employment; this is the approach adopted in the calculations.

3.6 The difference between (i) and (ii) in paragraph 3.4 can be considered to be the difference between the superannuation benefits for members of the armed forces and those for comparators. Although the approach adopted considers the whole of working life, it is necessary to relate the difference in superannuation benefits to the career in the armed forces. The difference between (i) and (ii) is therefore expressed as a level percentage of pay during the career in the armed forces.

3.7 All the comparators are male. Accordingly the superannuation benefits to male members of the armed forces and comparator schemes have been evaluated throughout.

#### **4. BASIS OF CALCULATIONS**

4.1 The actuarial assumptions to be adopted for valuing the superannuation benefits as described in Section 3 must cover a long period of time. The results of the calculations will be applied when determining the pay of present members of the armed forces who will be retiring at all times up to 35 or more years from now and who may draw pensions for a good deal longer. It is essential therefore to look not just at the immediate future but also far ahead and for this purpose the experience of the recent past taken by itself cannot be regarded as a reliable guide.

4.2 Of particular importance in the calculations are the assumptions regarding the yield on investments and the rates of increase in prices and earnings. I have assumed that, over the long term, the yields on investments (including capital appreciation as well as interest) will on average exceed increases in the general level of earnings by 1 per cent per annum and increases in prices by  $2\frac{1}{2}$  per cent per annum. (Separate allowance was made for career increases in earnings with increasing age and promotion). I have also assumed that the rate of increase in prices will average 7 per cent per annum. Taken together, these assumptions imply that the yield on investments will be about  $9\frac{1}{2}$  per cent per annum and that the general level of earnings will increase by about  $8\frac{1}{2}$  per cent per annum. They also imply an increase in real earnings of about  $1\frac{1}{2}$  per cent per annum.

4.3 The assumptions described in the previous paragraph are those I would consider appropriate at the present time. I have therefore based my calculations in this report on these assumptions. However in the Report of the Inquiry into the Value of Pensions chaired by Sir Bernard Scott (the Scott Report, Cmd 8147) various alternative economic assumptions were considered and two sets of assumptions thought to be suitable upper and lower limits to the range of "reasonable" assumptions were suggested. In Section 6 I indicate how the various calculations would be affected if the Scott Report upper and lower limits to the range of "reasonable" assumptions were adopted instead of the basis described in this section.

4.4 The rest of the basis for the calculations (with the exception of pensions increases which are discussed in paragraphs 4.6 to 4.10 below) is essentially an attempt to define an average career and an average life after retirement. Assumptions about entry ages, rates of mortality and withdrawal from service (on invaliding grounds or otherwise), career salary progression (as distinct from general increases in the level of earnings), age at retirement and proportions married etc. have been based on the experience of members of the armed forces as shown by the MOD data. Detailed information about mortality after retirement from the armed forces is not so readily available but suitable assumptions consistent with the limited data available have been made. Average entry ages to the armed forces of 22 (officers) and 19 (other ranks) have been assumed; other assumptions are set out for specimen ages in Annex 3.

4.5 Retirement from the armed forces with an immediate pension (except where retirement is on invaliding grounds) can occur from age 37 onwards for officers and from age 40 onwards for other ranks; the average ages are about  $46\frac{1}{2}$  (officers) and about  $43\frac{1}{2}$  (other ranks). These therefore are the assumed average ages of retirement when considering careers in the armed forces and are also the assumed average starting ages when considering those members of the forces retiring with an immediate pension who embark on a second career in civilian life (as discussed in paragraphs 3.4 and 3.5 above). For comparators the average age at retirement depends on the minimum retiring age of the comparator scheme. For most comparators the minimum retiring age is 65 and an average age at retirement of  $65\frac{3}{4}$  has been assumed. For comparators with a minimum retiring age of 60 the assumed average age at retirement is  $61\frac{1}{2}$  (or  $62\frac{1}{2}$  for public service schemes). There are a few comparators, such as policemen or firemen, with a lower minimum retiring age. The weighted average retirement age assumed for all comparators is about 65.

4.6 The information provided by OME on comparator pension schemes included details of the provisions and past practice of the scheme in regard to increases in pensions in payment. The assumptions to be made for the future are affected by the Social Security Pensions Act which came into force on 1 April 1978. The majority of comparator schemes have been contracted out of the upper tier of the State pension scheme; for such schemes full price protection for the guaranteed minimum pension (GMP) forming part of the scheme benefits will be provided by the State scheme. I have therefore assumed that the schemes themselves will not provide any increase on the GMP.

4.7 Recent years have been years of very high inflation, sometimes accompanied by poor investment performance. The increases in pension that have been given therefore reflect the achievements of comparator schemes at a time of great difficulty and it would perhaps be reasonable to expect a higher degree of price protection in easier times. The new State scheme, which provides cost of living increases on the GMP part of occupational pensions, will have an important effect on the position, but in a less straightforward way. Employers may feel that the need for pensions increases has diminished, since the State scheme is providing some protection. On the other hand, they might wish to provide as much by way of increases from their own resources as they did before; this would imply a higher increase than before on the pension in excess of the GMP.

4.8 Taking all these considerations into account, the following assumptions were made as regards the pension in excess of the GMP (and for the whole pension in schemes that are not contracted-out):

- (i) where the rules of a scheme provide for increases linked to cost of living, either through the Pensions (Increase) Acts or in some other way, such increases will continue to be given;
- (ii) where fixed-rate increases (usually 3 per cent a year) are provided increases at that rate will continue;
- (iii) where increases are discretionary only, the scheme will continue to give increases that represent the same proportion of full cost of living protection as in the recent past, subject to a limit of 95 per cent;
- (iv) where both fixed and discretionary increases are provided, the scheme will in future provide the fixed-rate increase plus discretionary increases that represent the same proportion of the excess of increases in the cost of living over the fixed-rate as has applied in the recent past, subject to a limit of 95 per cent of the increase in the cost of living.

4.9 If these assumptions are realised, then comparator schemes will continue to provide a significant degree of protection against increases in the cost of living. With price increases of 7 per cent a year, as have been assumed, protection against 52 per cent of price increases would be given on pensions in excess of the GMP for the officers' comparators; and against 67 per cent of price increases for the other ranks' comparators.

4.10 For members of the armed forces it has been assumed that full protection against price increases on the pension in excess of the GMP will continue to be provided, and that increases on the GMP will be provided by the State scheme and not by the Armed Forces Pension Scheme.

4.11 I consider the above assumptions, taken together, to be appropriate for the assessment of benefits currently accruing to scheme members.

## 5. RESULTS

5.1 The benefits payable under the Armed Forces Pension Scheme are summarised in Annex 1. On the basis used, the value of these benefits to an officer is 34.1 per cent of salary; and to a serviceman, 19.8 per cent of salary. The large difference between these two figures is largely accounted for by the much higher level of withdrawals (including withdrawals with rights to deferred pensions) assumed for servicemen, as is shown in Annex 3; for servicemen, 87 per cent of new entrants (at the average entry age of 19) are assumed to withdraw from service (with or without rights to a deferred pension) before being entitled to an immediate pension whereas for officers the corresponding figure is 42 per cent. Following on from this, 50 per cent of officer new entrants are assumed to remain in service until they are eligible for an immediate pension (not including pensions payable on invaliding grounds) whereas only 8 per cent of servicemen are assumed to do so.

5.2 The value of the benefits of the Armed Forces Pension Scheme is noticeably higher than that of most other public service pension schemes. This is for two main reasons. First, the amount of pension earned for each year of reckonable service—the accrual rate—tends to be higher than for most other public service pension schemes; for example, an officer might be entitled to an immediate pension of roughly one-third of final pay after about 20 years' reckonable service whereas in most other public service pension schemes reckonable service of about 27 years would be needed before being entitled to a one-third pension. But secondly, and much more importantly, immediate pensions (not counting those payable on invaliding grounds) can be payable from relatively young ages—as young as 37 in the case of officers—which is much younger than for most pension schemes.

5.3 It might be argued that, even though the Armed Forces Pension Scheme allows for pensions to be paid from younger ages than most other pension schemes, it would be wrong to consider all these pensions as superannuation benefits in the normally accepted sense; and that instead they should be considered, in part, as compensation for early termination of career and for any liability to recall at times of national emergency. If allowance is made in the calculations only for that part of (non-invaliding) pensions payable after age 60 (60 being the age at which deferred pensions first come into payment under the Armed Forces Pension Scheme), then the value of the benefits is reduced from 34.1 per cent of salary to 23.8 per cent (for officers); and from 19.8 per cent of salary to 15.3 per cent (for other ranks). Alternatively, if allowance is made in the calculations only for that part of (non-invaliding) pensions payable after age 55 (55 being the age at which pensions increases are actually put into payment and the age by which a maximum pension can be earned under the Armed Forces Pension Scheme), then the value of the benefits is 28.7 per cent of salary (for officers) and 16.8 per cent of salary (for other ranks). The figures shown in the tables are on the two extreme approaches of (i) allowing fully for all benefits payable from the Armed Forces Pension Scheme and (ii) excluding pension (other than invaliding pension) payable before age 60. The Review Body may well decide that one or other of these approaches is the correct one, but if it decides that the right approach is somewhere between these two extreme approaches—for example it might decide to exclude pension (other than invaliding pension) payable before age 55—then the appropriate figure will be between the extreme figures shown in the tables in later paragraphs.

5.4 As is explained in Annex 1 the resettlement grant, payable to those who have served for a stated minimum period in the armed forces and who withdraw without an immediate pension, is outside the scope of the Armed Forces Pension Scheme. For this reason, none of the figures quoted in this report (except those quoted in this paragraph) allows for the resettlement grant. Nevertheless, it is a benefit which can be valued in the same way as pension benefits and it is estimated that its value is about 0.2 per cent of salary for officers and about 0.3 per cent of salary for other ranks.

5.5 The value of the benefits of each comparator scheme was calculated. The method used was the same as that adopted in connection with the adjustment for differences in superannuation benefits for Civil Service pay research in

1979<sup>1</sup> and 1980<sup>2</sup>. This method was explained in Appendix 8 to my 1979 report (on Civil Service pay research) and entails carrying out full calculations for a limited set of model schemes and then interpolating between those results to allow for the particular benefits available under each comparator scheme. The results were then averaged allowing for the appropriate weighting factor for each comparator scheme (as mentioned in paragraph 2.3). In the case of other ranks there were separate comparators for senior NCOs and for the lower ranks (as mentioned in paragraph 2.3 and discussed further in paragraphs 5.18 and 5.19). In deriving an overall figure for other ranks, the relative weights assigned to the senior NCO comparators and to the lower rank comparators were based on the total salaries of the members of the forces of the corresponding rank.

5.6 An adjustment needs to be made for those comparator employments which are not contracted out of the upper tier of the State pension scheme. Employees of such comparator employments effectively pay higher National Insurance contributions in return for higher benefits from the State pension scheme. Although this falls outside the comparator pension scheme, it is right to consider the extra State pension contributions and benefits of such comparators compared with members of the armed forces and other comparators that are contracted-out. For those comparator schemes that are not contracted-out, the value of the extra State pension contributions that the employee effectively pays (i.e. the employee share of the contracting-out rebate, currently 2½ per cent of earnings between the lower and upper earnings limits for National Insurance contribution liability) is deducted from the value of the extra State pension to which he will become entitled (i.e. approximately the value of the GMP payable from a contracted-out scheme). An adjustment is made to allow for the fact that National Insurance contributions are effectively paid out of income net of tax.

5.7 As explained in paragraphs 3.4 and 3.5, it is necessary to consider the superannuation benefits that would accrue (a) to retired members of the armed forces during any subsequent civilian employment subject to comparator scheme benefits and (b) during a whole career subject to comparator scheme superannuation benefits (where the career, as regards salary and mortality rates etc. is the same as for a member of the armed forces except that the age of retirement is based on the practice of the comparator schemes). If we consider officers and their comparators, the comparison being made is between:

- (i) the value of the benefits of the Armed Forces Pension Scheme (which, from paragraphs 5.1 and 5.3, is 34.1 per cent of their forces salary if all benefits are fully taken into account or 23.8 per cent if that part of the pension payable over the period to age 60 is left out of account) *plus* the value of superannuation benefits accruing during any subsequent civilian employment (which, on the basis used, is 13.4 per cent of such civilian salary); and
- (ii) the value of the benefits accruing during a whole career subject to comparator scheme superannuation benefits (which, on the basis used, is 13.2 per cent of salary).

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<sup>1</sup>The 1979 Review of the Adjustment for Differences in Superannuation Benefits, Report by the Government Actuary.

<sup>2</sup>The 1980 Review of the Adjustment for Differences in Superannuation Benefits, Report by the Government Actuary.

In making the comparison allowance must also be made for the average level of employee contribution. For officer comparators the level of employee contribution, averaged over a whole career, is 3.4 per cent of salary.

5.8 For other ranks and their comparators exactly the same kind of comparison is made as for officers and their comparators but the figures are significantly different. From paragraphs 5.1 and 5.3, the value of the benefits of the Armed Forces Pension Scheme is 19.8 per cent of their forces salary if all benefits are fully taken into account or 15.3 per cent if that part of the pension payable over the period to age 60 is left out of account. The value of superannuation benefits accruing during any subsequent civilian employment for retired members of the forces is, on the basis used, 10.8 per cent of such civilian salary; while the value of benefits accruing during a whole career subject to comparator scheme superannuation benefits is, on the basis used, 7.1 per cent of salary. As with officers, allowance must be made in the comparison for the average level of employee contribution; for other ranks' comparators this, when averaged over a whole career, is 3.6 per cent of salary.

5.9 As mentioned in paragraph 3.5, not all retired members of the forces who are drawing a pension will take up civilian employment and those who do might earn less, or in some cases more, than they were earning when they retired from the forces. The allowance to be made for these two factors is not an actuarial matter but one for the Review Body to decide. I have carried out calculations on two extreme assumptions in this regard: first that every retired member of the forces (except those retired on invaliding grounds) will take up civilian employment at the same salary he was receiving when he retired from the forces; and secondly that no retired member of the forces enters civilian employment. It will be seen in the tables below that the figures are lower in row (b) (which assumes that no retired member of the forces enters civilian employment) than in row (a) (which assumes that all retired members of the forces enter civilian employment). This could be said to reflect any pension disadvantage that those leaving the forces might have. If upon leaving the forces they cannot, or do not, find pensionable civilian employment, they are losing the opportunity to acquire further pension rights and this pension disadvantage is therefore reflected in the lower figures. The question of interpolating between the two extreme sets of calculations to allow for the proportions considered by the Review Body to be appropriate may be left until after the further process described in paragraphs 5.12 to 5.14.

5.10 As explained in paragraph 3.6, the difference between the value of the superannuation benefits accruing over the two life-time careers (as set out in (i) and (ii) of paragraph 3.4 or 5.7) is expressed as a level percentage of pay during the career in the armed forces. These differences, which allow for the level of employee contributions, are summarised in the following table.

**Table 1: Excess of the value of the superannuation benefits to members of the armed forces over those of the comparator schemes (averaged over all schemes).**

	Percentage of armed forces salary			
	Officers		Other ranks	
	Allowing fully for all benefits payable from the Armed Forces Pension Scheme  (1)	Excluding that part of the pension (other than invaliding pension) payable over the period to age 60 (2)	Allowing fully for all benefits payable from the Armed Forces Pension Scheme  (3)	Excluding that part of the pension (other than invaliding pension) payable over the period to age 60 (4)
(a) All taking up civilian employment	24.5	14.1	17.0	12.5
(b) None taking up civilian employment	19.2	8.8	15.6	11.1

*Note:* Row (a) allows for every retired member of the forces drawing a pension (except those retired on invaliding grounds) taking up civilian employment at the same salary he was receiving when he retired from the forces whereas row (b) assumes that no retired member of the forces enters civilian employment. (See paragraph 5.9).

5.11 It will not be immediately clear how the figures quoted in earlier paragraphs lead to the figures shown in Table 1. This paragraph explains by way of an example the derivation of one of the figures in the table, that of 24.5 per cent of armed forces salary for officers allowing fully for all benefits payable from the Armed Forces Pension Scheme and assuming that all retired officers take up civilian employment. The comparison being made has been described in paragraph 5.7. The first step is to express the value of all items (superannuation benefits and employee contributions) in lump sum, or discounted value, form and for this the following factors which convert a contribution of 1 per cent of salary over the period shown into its discounted value as at age 22 (the average entry age of officers to the armed forces) are needed:

Age range	Discounted value of 1 per cent of salary over the period
22 to 46½ (on average) i.e. period of service in the armed forces	£ 1,310
46½ to 65 (on average) i.e. period of subsequent civilian employment	710
22 to 65 (on average) i.e. whole career in comparator employment	2,020

The value of all the benefits of the Armed Forces Pension Scheme is (from paragraphs 5.1, 5.3 or 5.7) 34.1 per cent of forces salary. Thus the discounted (or lump sum) value of these benefits is  $34.1 \times \text{£}1,310$ , or **£44,671**.

The value of superannuation benefits accruing during any subsequent civilian employment is (from paragraph 5.7) 13.4 per cent of such civilian salary. However, allowance must also be made for the average level of employee contribution during this period which is 3.5 per cent of salary so that the net value of superannuation benefits is 13.4—3.5, or 9.9 per cent of civilian salary. Its discounted value is therefore  $9.9 \times \text{£}710$ , or  $\text{£}7,029$ .

The value of superannuation benefits accruing during a whole career subject to comparator scheme superannuation benefits is (from paragraph 5.7) 13.2 per cent of salary from which must be deducted the average level of employee contribution of 3.4 per cent of salary giving a net value of superannuation benefits of 9.8 per cent of salary. Its discounted value is therefore  $9.8 \times \text{£}2,020$ , or  $\text{£}19,796$ .

The excess of the value of the benefits of the Armed Forces Pension Scheme over those of the comparator schemes is therefore  $\text{£}44,671 + \text{£}7,029 - \text{£}19,796$ , or  $\text{£}31,904$  in discounted value form. Expressed as a percentage of armed forces salary this is  $\text{£}31,904 \div \text{£}1,310$ , or 24.4 per cent; roundings in the calculations account for the difference from the figure of 24.5 per cent shown in Table 1.

5.12 The differences brought out in Table 1 do not, however, give the appropriate deduction to be made from the comparator scheme pay since the benefits to a member of the armed forces will be calculated on a lower salary than the comparator salary on account of the deduction itself. The process of converting the benefit difference to a deduction from pay is set out in Table 2.

5.13 It should be noted that the figures shown in the first three rows of Table 2 do not, in general, represent the appropriate percentage contribution rate for the benefits described. As explained in paragraphs 3.6 and 5.10, the value of the superannuation benefits is expressed as a level percentage of pay during the career in the armed forces. Considering the figure of 15.0 per cent in row (i) for the net value of superannuation benefits from a whole career subject to comparator scheme benefits (for officers), this figure has been derived as follows.

From paragraph 5.11, the net value (i.e. after deducting the average level of employee contribution) of superannuation benefits accruing during a whole career subject to comparator scheme benefits is 9.8 per cent of salary. Its discounted value is therefore  $9.8 \times \text{£}2,020$ , or  $\text{£}19,796$ , which when expressed as a percentage of armed forces salary is  $\text{£}19,796 \div \text{£}1,310$ , or 15.1 per cent. The difference from the figure of 15.0 per cent in Table 2 is accounted for by roundings in the figures.

The figures in row (iii) of Table 2 allow for the superannuation benefits accruing during any subsequent civilian employment for retired members of the forces. Where there is assumed to be no subsequent civilian employment (as in all the (b) columns), the figures represent the value of the Armed Forces Pension Scheme benefits as given in paragraphs 5.1 and 5.3. Where retired members of the forces are assumed to enter civilian employment (as in all the (a) columns), the difference between the figure in the (a) column and the figure in the (b) column represents the value of the superannuation benefits accruing

Table 2: Conversion of benefit difference (Table 1) to a pay deduction.

	Officers				Other ranks			
	All benefits		Excluding pension over period before age 60		All benefits		Excluding pension over period before age 60	
	All taking civilian employment (1) (a)	None taking civilian employment (1) (b)	All taking civilian employment (2) (a)	None taking civilian employment (2) (b)	All taking civilian employment (3) (a)	None taking civilian employment (3) (b)	All taking civilian employment (4) (a)	None taking civilian employment (4) (b)
	Percentage of armed forces pay							
(i) Net value of superannuation benefits from a whole career subject to comparator scheme benefits .. .. .	15.0	15.0	15.0	15.0	4.2	4.2	4.2	4.2
(ii) Excess of the value of the superannuation benefits to members of the armed forces over those of comparator schemes (from Table 1) .. .. .	24.5	19.2	14.1	8.8	17.0	15.6	12.5	11.1
(iii) Value of superannuation benefits to members of the armed forces (including allowance for any subsequent civilian employment) = (i) + (ii) ..	39.5	34.1	29.1	23.8	21.2	19.8	16.7	15.3
	£							
(iv) Value of superannuation benefits from a whole career subject to comparator scheme benefits plus pay: per £100 pay = 100 + (i) .. .. .	115.0	115.0	115.0	115.0	104.2	104.2	104.2	104.2
(v) Value of superannuation benefits to members of the armed forces (including allowance for any subsequent civilian employment) plus pay: per £100 pay = 100 + (iii) .. .. .	139.5	134.1	129.1	123.8	121.2	119.8	116.7	115.3
(vi) Armed forces pay giving same total value as comparator = (iv) × 100 / (v)	82.4	85.7	89.0	92.9	86.0	87.0	89.3	90.4
	Percentage of comparator pay							
(vii) Percentage deduction from comparator pay = 100 - (vi) .. .. .	17.6	14.3	11.0	7.1	14.0	13.0	10.7	9.6

Note: Figures in the table may not agree exactly due to roundings.

during that civilian employment expressed as a percentage of armed forces pay i.e. 5.3 per cent for officers (which may be shown as 5.4 per cent due to roundings) and 1.4 per cent for other ranks.

5.14 The results derived in Table 2 above are summarised in Table 3 below which shows the necessary deduction from comparator pay, on the same alternative assumptions, to allow for the differences between the armed forces and comparator superannuation arrangements.

**Table 3: Deduction from comparator pay to allow for the excess of the value of the superannuation benefits to members of the armed forces over those of the comparator schemes (averaged over all schemes).**

	Percentage of comparator pay			
	Officers		Other ranks	
	Allowing fully for all benefits payable from the Armed Forces Pension Scheme  (1)	Excluding that part of the pension (other than invaliding pension) payable over the period to age 60 (2)	Allowing fully for all benefits payable from the Armed Forces Pension Scheme  (3)	Excluding that part of the pension (other than invaliding pension) payable over the period to age 60 (4)
(a) All taking up civilian employment	17.6	11.0	14.0	10.7
(b) None taking up civilian employment	14.3	7.1	13.0	9.6

*Note:* Row (a) allows for every retired member of the forces drawing a pension (except those retired on invaliding grounds) taking up civilian employment at the same salary he was receiving when he retired from the forces whereas row (b) assumes that no retired member of the forces enters civilian employment. (See paragraph 5.9).

5.15 The figures in Table 3 show the appropriate deductions to be made from comparator pay to reflect the difference in the superannuation benefits of the Armed Forces Pension Scheme and comparator schemes on two different assumptions about the Armed Forces Pension Scheme benefits to be allowed for, and on two different assumptions about the extent of civilian employment for retired members of the forces. If it is decided to allow fully for all the benefits payable from the Armed Forces Pension Scheme, an interpolation should be made between the figures shown in column (1) (for officers) or column (3) (for other ranks) depending in each case on the extent of civilian employment assumed for retired members of the forces (as discussed in paragraph 5.9). Similarly the figures shown in columns (2) (for officers) and (4) (for other ranks) should be used if it is decided to leave out of account that part of the pension (other than invaliding pension) payable over the period before age 60.

5.16 A simple numerical example (based on purely illustrative assumptions) may clarify the comments in the previous paragraph:

### Example

If the Review Body decides:

- (i) to allow for all the benefits payable from the Armed Forces Pension Scheme;
- (ii) to assume that 50 per cent of retired officers will enter civilian employment; and
- (iii) to assume that the average salary in the new employment will be 75 per cent of that received at the time of retirement from the forces;

then an interpolation must be made between the figures shown in column (1) of Table 3 giving an answer of:

$$14.3 + (17.6 - 14.3) \times 0.50 \times 0.75 \\ = 15.5 \text{ per cent deduction from (officer) comparator pay.}$$

*Note:* For technical reasons it is not quite correct to interpolate linearly in the way indicated in the above example but any resulting error should not be great.

5.17 If the Review Body decides to leave out of account that part of the pension (other than invaliding pension) payable from the Armed Force Pension Scheme over the period before age 55, then the figures in columns (2) and (4) of Table 1 (which exclude pension payable over the period before age 60) would be increased (from paragraph 5.3) by 4.9 percentage points and by 1.5 percentage points respectively. The figures shown in rows (ii) and (iii) of columns (2) and (4) of Table 2 would be increased by the same amounts. The resulting changes to the other rows in Table 2 would increase the figures in columns (2) and (4) of Table 3 to the following figures:

Column/row	Previous figure	New figure
(2)(a)	11.0	14.2
(2)(b)	7.1	10.7
(4)(a)	10.7	11.9
(4)(b)	9.6	10.8

*Note:* Roundings account for the above figures not reconciling exactly with previously quoted figures.

5.18 Tables 1 to 3 show officers and servicemen separately because the comparators for these two groups are of differing value and because their careers are different. It is possible to construct separate typical careers for officers and servicemen as few officers are promoted from the ranks.

5.19 The evaluation of the superannuation benefits of comparator schemes for senior NCOs shows that they are somewhat more valuable than those for lower ranks (see Annex 2 for an analysis of the schemes), but a separate career cannot be constructed for each of these two groups because all senior NCOs must normally have passed through the lower ranks and a significant proportion of those of lower rank will be promoted to senior rank. On the basis of a typical career covering all servicemen, the percentage deductions from comparator pay given in columns (3) and (4) of Table 3 would be reduced by about three-

quarters of one percentage point if the comparator schemes for senior NCOs alone were used instead of all the other ranks' comparators; and they would be increased by about one-half of one percentage point if the comparator schemes for lower ranks alone were used.

## **6. VARIATIONS IN ECONOMIC ASSUMPTIONS**

6.1 The economic assumptions underlying the results summarised in Section 5 are described in paragraph 4.2 and the assumptions about pensions increases described in paragraphs 4.6 to 4.10. As mentioned in paragraph 4.3, the Scott Report suggested upper and lower limits to a range of "reasonable" assumptions. This Section considers how the results summarised in Section 5 would be affected if these upper and lower limits of "reasonable" assumptions were to be adopted.

6.2 Paragraph 128 of the Scott Report says:

"At the more optimistic end of the range, we have assumed a real rate of return of 3 per cent per annum coupled with an average rate of inflation rather lower than 7 per cent and with a degree of protection against inflation for the analogue schemes somewhat higher than that assumed by the Government Actuary in 1980. At the other end of the range, we have assumed a real rate of return of zero accompanied by a degree of inflation protection for the analogues somewhat lower than the Government Actuary assumed."

On these alternative assumptions the figures shown in Table 3 would become :

**Table 4: Deduction from comparator pay to allow for the excess of the value of the superannuation benefits to members of the armed forces over those of the comparator schemes (averaged over all schemes).**

	Percentage of comparator pay			
	Officers			
	Allowing fully for all benefits payable from the Armed Forces Pension Scheme (1)		Excluding that part of the pension (other than invaliding pension) payable over the period to age 60 (2)	
	Optimistic end of range	Pessimistic end of range	Optimistic end of range	Pessimistic end of range
(a) All taking up civilian employment	15.5	23.6	8.9	16.4
(b) None taking up civilian employment	12.8	16.6	5.8	7.9
	Other ranks			
	Allowing fully for all benefits payable from the Armed Forces Pension Scheme (3)		Excluding that part of the pension (other than invaliding pension) payable over the period to age 60 (4)	
	Optimistic end of range	Pessimistic end of range	Optimistic end of range	Pessimistic end of range
	Optimistic end of range	Pessimistic end of range	Optimistic end of range	Pessimistic end of range
(a) All taking up civilian employment	12.1	24.3	8.9	20.0
(b) None taking up civilian employment	11.4	21.7	8.1	17.1

The note to Table 3 applies to this table.

6.3 It is for the Review Body to decide what allowance to make for superannuation benefits in the assessment of armed forces pay. The basis used in this report, leading to the results in Table 3, relates to a point intermediate between the "optimistic" and "pessimistic" ends of the range suggested in the Scott Report. For other points further calculations could, if necessary, be done; it should be noted though that linear interpolation of the figures shown in Table 4 to allow for alternative economic assumptions could possibly give misleading results.

6.4 The Scott Report also refers to the problems of valuing pensions which are guaranteed to increase fully in line with the cost of living and discusses an approach that has been developed to allow for this. The method entails

discounting at a lower rate of interest any benefits carrying this kind of guarantee; in this case some of the benefits of the Armed Forces Pension Scheme (and of those comparator schemes whose benefits are covered by the Pensions (Increase) Acts) would need to be valued at a lower rate of interest than that assumed. The Scott Report points out though that the method "is still subject to controversy". In view of this and the difficulties of deciding on an appropriate reduction in the discounting rate of interest to be used, no attempt has been made to quantify this feature in this way or to produce another set of alternative figures in this report. On the other hand some implicit allowance has been made by assuming future rates of pension increase for comparator schemes (where pensions are not guaranteed to increase fully in line with the cost of living) which are considered to be on the cautious side. These assumptions have been described in paragraph 4.8 and it can be argued that with assumed rates of inflation lower in the long-term future than over the past five years or so, comparator schemes might be expected to grant increases in pensions that represent a higher proportion of the increase in the cost of living than in the recent past.

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London

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