NOTTINGHAMSHIRE ADMISSION AGREEMENT ETC SUPERANNUATION FUND

REPORT ON THE ACTUARIAL VALUATION

AS AT 31 MARCH 1989

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Contents

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To the County Treasurer
Nottinghamshire County Council

I Background to the Valuation and Purpose of the Report

1.1 While the Regulations governing the Local Government Superannuation Scheme operate on a country-wide basis, each Administering Authority (whether County, London Borough or designated authority in the case of the former Metropolitan Counties) controls its own Superannuation Funds. Membership of the Superannuation Funds extends beyond employees of the Administering Authority itself to include the employees of other "Scheduled Bodies" (i.e. District Councils, Probation and Magistrates County Committees, Polytechnics from 1 April 1989, etc) and Admitted Bodies (typically local transport companies still controlled by a local authority and other bodies providing public or charitable services to the local community). Superannuation Funds do not cover employees covered by other Statutory schemes such as Teachers, Police and Firemen.

1.2 The Nottinghamshire County Council Superannuation Fund was divided with effect from 1 April 1986 under the Nottinghamshire County Council (Superannuation) Act 1985. The assets and accrued liabilities for employees of the Admitted Bodies of the Nottinghamshire Fund were transferred to the Admission Agreement Etc Superannuation Fund ("the Fund"). A full list of the employers participating in the Admission Agreement Etc Superannuation Fund can be found in Appendix B to this Report.

1.3 The Superannuation Funds are currently governed by the Local Government Superannuation Regulations 1986 (as amended) made by the Secretary of State for the Environment under Statutory powers incorporated in the Superannuation Act 1972.

1.4 This is the first full actuarial valuation of the Admission Agreement Etc Superannuation Fund. The purpose of the valuation is to determine the contributions to be paid by employers participating in the Fund, with any revision to take effect from 1 April 1990. Under Regulation P6 of the 1986 Regulations, employer contributions are determined in two parts:

(a) a common rate based on the existing and prospective liabilities of the Fund arising from circumstances common to all the participating employers; and

(b) individual adjustments arising from circumstances peculiar to an individual employer.

1.5 While the Regulations express the "common" rate as a percentage of pensionable employee's remuneration, it has become common practice to adopt the practical expedient of expressing employers' contributions as percentages of employees' contributions. These are normally 6% of pensionable remuneration for employees classified as 'officers', with 5% for other employees (classified as 'manual workers').

1.6 For the most part, the Regulations did not, at 31 March 1989, cover increases to pensions in payment or deferment. These pensions increases are governed by the Pensions (Increase) Act 1971 and by Section 59 of the Social Security Pension Act of 1975 and were not liabilities of the Superannuation Funds at 31 March 1989. New Regulations requiring the payment of these increases from Superannuation Funds with effect from 1 April 1990 are described in Section II of this Report.

1.7 The previous actuarial valuations of Local Government Superannuation Funds in England and Wales were carried out as at 31 March 1984. At the time of that valuation, employers participated in the Nottinghamshire County Council Superannuation Fund and paid contributions from 1 April 1985 of 75% (exclusive of pension increase costs) of employees' contributions. I refer elsewhere in this report to this as the "1984 valuation" where it has relevance to comparisons with the present valuation.

1.8 In accordance with the Nottinghamshire County Council (Superannuation) Act 1985, the Nottinghamshire Fund was apportioned. With effect from this date the contribution rate for each participating authority was set at 100% (exclusive of pension increase costs) of employees' contributions. Subsequently, the liability in respect of the East Midlands Airport Company, previously part of the County Council, was transferred to the Fund as from 1 April 1987, and a transfer payment made. A separate report has been prepared for the Nottinghamshire Fund.

1.9 This Report has been prepared in accordance with the Guidelines GN9: "Retirement Benefit Schemes - Actuarial Reports" published by the Institute of Actuaries and the Faculty of Actuaries as current at the date of signature.

1.10 The pension and lump sum benefits provided under the Local Government Superannuation Scheme are set out in detail in the Superannuation Regulations and are summarised in a number of booklets produced by Administering Authorities and their Consultants. In the circumstances, it was not thought necessary to provide a summary of the benefits under the Scheme in this Report.

II **Changes to the Regulations and changes to other legislation affecting the Local Government Superannuation Scheme**

2.1 In a Scheme as complex as the Local Government Superannuation Scheme, it is inevitable that there should be a continual stream of changes to the Regulations governing the Scheme. The changes of greatest actuarial importance to the Fund since the 1984 valuation are discussed briefly in the following paragraphs, together with changes in legislation affecting pension schemes generally.

Consolidated Regulations

2.2 In 1986, the 1974 Regulations and numerous subsequent changes were consolidated into the Local Government Superannuation Regulations 1986 (SI 1986 No 24). It is the nature of consolidation of legislation to codify the status quo rather than to introduce new changes. Nevertheless, the Regulation governing the derivation of employers' contributions to the Scheme did contain a significant change of wording.

2.3 Whereas Regulation B8 of the 1974 Regulations specified that employers' contributions should be a rate which should be "at all times be as nearly constant as may be .....", in Regulation P6 of the 1986 Regulations, the phrase employed is "having regard to ..... the desirability of maintaining as nearly constant a rate as possible". This softening of the specification gives a greater flexibility in fixing employers' contributions.

Admission of Part-time Employees

2.4 The Local Government Superannuation (Miscellaneous Provisions) Regulations 1987 gave part-time employees working more than 15 hours a week for more than 35 weeks a year the right to opt to join the Local Government Superannuation Scheme. For many authorities, this led to a substantial number of employees joining the Scheme. Their impact on the contribution rate depends on the age, sex and officer/manual worker composition of the new admissions compared with those of the existing pensionable employees. Surpluses or deficiencies in Funds may now need to be spread over a larger body of pensionable employees, thus diminishing their impact.

Admitted Bodies and Pensions Increases

2.5 The 1987 Regulations also mandated the funding of pensions increases in respect of service under an admission agreement where that agreement was made after 31 March 1987 or related to a public transport company or public airport company. This has the effect of increasing the contributions paid by the bodies concerned.

The Social Security Act 1986

2.6 This Act (which provides for the new system of 'personal pensions') was implemented in the Scheme by the Local Government (Superannuation and Compensation) (Amendment) Regulations 1988 (SI 1988 No 466). Three principal changes were introduced.

(a) The qualifying period for benefits was reduced from five to two years. This has the impact of increasing the number of deferred pensions and thus the burden of administration but has little direct financial effect on superannuation funds;

(b) Pensionable employees became entitled to pay additional voluntary contributions on a money-purchase basis through the Scheme to an external provider such as an insurance company or building society. This has no direct financial impact on superannuation funds but did introduce superannuation officers to the requirements of the Inland Revenue in applying the benefit and contribution limits. There will have been an increase to the burden of administration due to this change.

(c) Compulsory membership of pension schemes as a condition of employment was prohibited with related requirements to allow existing pensionable employees to opt to leave the Scheme and to require new employees to opt to join the Scheme. It was found that relatively few pensionable employees left the Scheme, but only about half of new employees joined the Scheme. It is our understanding that, in consequence, Ministers have now agreed that new employees should join the Scheme, subject to the right to opt out.

<u>Finance Act 1986</u>

2.7 Growing concern about large surpluses in pension schemes generally and the need to codify repayments from pension schemes to employers led to the control of surplus provisions contained in the Finance Act 1986 (now consolidated within the Income and Corporation Taxes Act 1988). These require that, where pension schemes have assets which exceed accrued liabilities, both calculated on a basis prescribed by regulations, by more than 5%, action must be taken to reduce the surplus to within the 5% margin within five years by one or by a combination of the following methods:

(a) improving benefits,
(b) reducing contributions,
(c) a refund to the employer (subject to a 40% tax penalty).

Where these requirements are not met, the investment returns on the surplus assets become subject to income and capital gains taxes.

2.8 It seemed likely that Local Government Superannuation Funds would reveal substantial surpluses at the 1989 valuations. Changing the benefits was not a practical solution, and reducing employers' contributions, even to zero for five years, was not likely to be a sufficient remedy. The funding of pensions increases seemed the obvious solution.

<u>The Local Government Superannuation (Funds etc) Regulations 1990</u>

2.9 The Local Government Superannuation (Funds etc) Regulations 1990 (SI 1990 No 503) came into operation on 1 April 1990. They specify that pensions increases pertaining to pension (and lump sum) payments which are themselves Superannuation Fund liabilities should be paid from Superannuation Funds as from 1 April 1990. Thus the present actuarial valuation must take these increases into account.

2.10 The new regulations provide for recharges to be continued where pensions increases have been recharged to employers who have no liability to contribute to the Fund under Regulation P7. However, it should be noted that the recharging is now to be done from the Superannuation Fund and the amounts repaid are to be credited to the Fund. These recharges include those made in respect of former employees of functions transferred to Health and Water Authorities and functions transferred from one County to another as part of the 1974 Local Government reorganisation.

2.11 These new Regulations also change Regulation P6 by deleting the phrase "to ensure its solvency" and substituting "to ensure that the Fund is able to meet 75% of its existing and prospective liabilities". However, provision is made for Admitted Bodies to pay contributions assuming a 100% funding level as the target. This enables them to provide in a logical manner for all their pension liabilities.

Miscellaneous Changes

2.12 Other, more minor, changes introduced recently include:

(a) provision of pensions to widowers in respect of service from 1 April 1988;

(b) provision enabling administering authorities to deduct expenses of administration from superannuation funds; and

(c) provision for employees transferred on a local government reorganisation to elect to retain separated benefits for each period of employment.

2.13 Other changes to national legislation also affect the Local Government Superannuation Scheme. These include:

(a) requirements to disclose personal and general information relating to a pension scheme to individual members;

(b) the reductions to the benefits of the State Earnings Related Pension Scheme and consequent reduction in accrual of Guaranteed Minimum Pension;

(c) provision for increases of 3% p.a. from State pension age to Guaranteed Minimum Pensions accruing from 6 April 1988;

(d) the introduction of personal pensions as an alternative to occupational pension schemes; and

(e) the facility for paying additional voluntary contributions separate from the occupational scheme (FSAVCs).

III **Information Supplied for the Valuation**

Statistical Information

3.1 Details of pensionable employees as at 31 March 1989, together with details of former pensionable employees and their dependants (pensioners, widows, deferred pensioners, etc) with entitlement to benefit from the Fund, were supplied mainly on magnetic tape derived from the CLASS system. The tape also included information about exits from each main data group during the period 1 April 1984 to 31 March 1989. Details of pensioners and widows whose entitlement to pension accrued prior to 1 April 1974 were supplied on updated listings based on the data supplied for the valuation as at 31 March 1984 and were converted to magnetic format for the purposes of carrying out the valuation.

3.2 A brief summary of the data used in the valuation is given in the table below.

Summary of data as at 31 March 1989
as used for the Valuation

	Numbers	Annual Amounts £	Average Annual Salary/Pension £
Pensionable employees (including part-time)	557	6,414,000	11,515
Deferred Pensioners	70	60,000	863
Pensioners	43	153,000	3,552
Widows	11	7,000	597

Notes
(i) salaries of part-time pensionable employees are included at their equivalent full-time level at 31 March 1989;

(ii) all salaries are shown as annual amounts payable over the year to 31 March 1989;

(iii) all pensions shown include pensions increases accrued, excluding the increase due on 10 April 1989.

Financial Information

3.3 We were supplied with the Fund's audited annual accounts for the period 1 April 1986 to 31 March 1988 and a copy of the draft annual report (containing unaudited accounts) for the year 1 April 1988 to 31 March 1989. A summary of the accounts for the three-year period is given at Appendix A.

3.4 We were also supplied with a list of the assets held by the Fund as at 31 March 1989 and these are summarised in the following table.

Distribution of assets by market value

	£m	%
UK Securities		
Fixed-interest	1.09	10.6
Equities, including unit trusts	5.91	57.7
Overseas Securities	2.30	22.4
Property Unit Trusts	0.52	5.1
Net Current Assets	0.43	4.2
Total Assets	£ 10.25	100.0%

3.5 The median annual return obtained on a survey of most Local Government Superannuation Funds over the five years up to the valuation date was 16.0%, and indeed this return was achieved on the assets held on account of the Nottinghamshire County Council Superannuation Fund. The major component of the returns achieved is the doubling in market value of UK equities over the five years, caused mainly by a doubling in dividend rates over the period.

3.6 By comparison, the average rate of increase in pensionable remuneration of Local Government employees was in the region of 8% p.a. and the average rate of increase in the General Index of Retail Prices was 5.1% p.a. Thus the average 'real' return obtained by the Fund was about 11% p.a. It would not be prudent to expect return at this exceptionally high level to continue for any length of time (this matter is discussed in Section V below).

3.7 Nottinghamshire County Council had established a special contingency reserve for the purpose of providing for pension increases during the working lifetime of employees of admitted bodies. Now that pension increases are to be paid from the Fund, that reserve will be transferred to the Fund. Account has therefore been taken for the reserve, which amounted to £1,449,047 at 31 March 1989.

IV **The Method Adopted for the Valuation**

4.1 The main purpose of the valuation is to determine the rates of contribution to be paid by participating employers from 1 April 1990 onwards. This determination is carried out in three parts:

(a) the comparison of the assets with the liabilities in respect of benefits accrued prior to 31 March 1989 in order to establish a surplus or deficiency;

(b) the calculation of contribution rates needed to support accruing benefits for service after 1 April 1990; and

(c) an adjustment to the rate calculated in (b) to allow for any surplus or deficiency in the Fund at the valuation date, calculated in (a).

Calculation of the past service liabilities

4.2 The benefits accrued in respect of service prior to the valuation date are projected using the statistical and economic assumptions described in the next Section. These calculations were carried out on two bases:

(a) excluding pensions increases (i.e. the position as at the 1984 valuation); and

(b) including pensions increases.

A value is then placed on these benefits by discounting them back to the valuation date using the valuation rate of interest.

4.3 As described in the next Section, different groups of statistical assumptions are made for each of the four major data sub-groups (male and female officers, male and female manual workers) and the calculations are made separately for each group. The results for each group are collated by employer and expressed as a single value for each employer.

4.4 In calculating the impact of pensions increases, we have allowed for the practice of calculating increases after State pension age on the pension as increased to date less the Guaranteed Minimum Pension. We have also allowed for the increases of up to 3% p.a. on that part of the guaranteed minimum pension which accrues after 5 April 1988.

4.5 The value of benefits exclusive of pensions increases was then compared with the value placed on the assets (see paragraph 4.7 below) to determine the surplus in the Fund as at 31 March 1989 prior to transferring the liability for pensions increases to the Fund. As the greater part of this surplus was known to have arisen from the very high investment returns earned on the Fund's assets during the intervaluation period, for the purposes of establishing contribution rates, it was considered appropriate to attribute the assets between participating employers in proportion to the accrued liabilities the assets were designed to cover. This also has the effect of distributing the surplus in proportion to the accrued liabilities.

4.6 In accordance with the provision of the new Regulations described in paragraphs 2.10 to 2.13 above, 100% of the accrued liabilities (including pension increases) were then compared with the distributed assets to determine the surplus or deficiency.

Valuation of assets

4.7 It is necessary to allow for the assets on a basis which is consistent with the valuation of the liabilities of the Fund. As in 1984, we have thought it appropriate to avoid the fluctuations inherent in market values and have placed a value on the income expected to be received from the assets held on account of the Superannuation Fund. It would be possible to carry out these calculations in respect of the actual assets held by the Fund at the valuation date. However, at any one time, the actual distribution of assets is designed to take into account expected short-term considerations and reflects the average distribution over the long term only coincidentally. Hence it is usual to assume that all the assets are realised at their market values and reinvested (at no cost) in a model portfolio based on the Financial Times-Actuaries All-Share Index representing 'real' assets and on the Financial Times-Actuaries 25 year High Coupon Gilt Index representing fixed interest assets.

Contribution rates for future service

4.8 It would be feasible for the calculations to be carried out for the Fund as a whole and a single contribution rate applying to all employers derived. This approach was adopted in the 1984 valuation. However, employers have paid differing levels of additional payments to cover the costs of pensions increases attributable to each body. With the change to funding pensions increases, it was thought appropriate to review the position and calculate separate contribution rates for individual employers where appropriate.

4.9 Contribution rates have been calculated for each employer using the actuarial method known as the "Projected Unit" method. Under this method, the benefits expected to accrue in respect of the year of service following the valuation date are projected and discounted in the same way as the past service accruals in respect of the pensionable employees. The value of benefits is then related to the pensionable payroll at the valuation date to obtain a contribution rate as a percentage of salary, or related to the annual rate of employees' contributions at the valuation date to express the contributions required as a percentage of employees' ordinary contributions, for administrative convenience.

<u>Amortisation of surplus or deficiency</u>

4.10 Under the Local Government Superannuation Regulations, the only option available to deal with a surplus or deficiency in the Fund is to adjust future contributions. In deciding how this adjustment should be calculated, we have to have regard to the following points:

(a) the statement in the Superannuation Regulations that employers' contributions should be at a rate fixed "having regard to .... the desirability of maintaining as nearly constant a rate as possible";

(b) the likely tax penalties under the Finance Act 1986 if the Fund is seriously overfunded; and

(c) the artificially low funding target imposed by the new provisions regarding the "funding level".

4.11 Taking these points into consideration, it was agreed that it would be appropriate to amortise the surplus by decreasing employers' contribution rates by a fixed proportion of the employees' contributions over the average expected remaining working lifetime of the pensionable employees present at the valuation date, about 13 years.

V The Assumptions Adopted for the Valuation

5.1 An actuarial valuation is concerned with the whole future lifetime of the Fund and not just the period up to the date of the next valuation. The valuation is therefore concerned with a very long period in the future, possibly 70 or 80 years (a member now aged 20 is expected to retire in 40 years' time and then may receive benefits for a further 30 or 40 years). The employers' commitment to the Fund is to meet the cost of the benefits provided in the way specified in the Regulations after taking account of the contributions paid by members.

5.2 In order to make projections of the payments into and out of the Fund, a large number of assumptions about the future have to be made. These assumptions can be regarded as falling into two groups as follows:

(i) the economic assumptions which cover the valuation rate of interest, increases in general levels of remuneration and the growth in the flow of income from ordinary shares, unit trusts and properties.

(ii) the statistical assumptions which are all age-related and cover such matters as rates of mortality of members, both in service and during retirement, the rates of withdrawal from membership and the progression of pensionable earnings from age to age attributable to increasing age and responsibility.

5.3 Our preliminary ideas as to the economic assumptions were discussed in some detail in a seminar held for our clients in the Autumn of 1988 and in a formal memorandum circulated to clients later that year. Our reasons for retaining those ideas were discussed in our Autumn 1989 seminars, and a summary was circulated as Issue 9 of "Local Government Comment". A precis of the discussion is given below for completeness.

5.4 From the general description contained in paragraph 5.1, it will be clear that the valuation is a forward-looking process concerned with a long period in the future. Furthermore, it is important that the assumptions are the most appropriate and informed which can be made because an apparently modest change in the assumptions can lead to a marked change in the level of employers' contribution shown to be required by the valuation.

Economic Assumptions

5.5 On the occasion of the 1984 valuation, the key economic assumptions, which were adopted for the long-term future period with which the valuation is concerned, can be summarised as follows:

	Nominal % p.a.	*Real % p.a.
The rate of price inflation	5½	-
The valuation rate of interest, i.e. the rate of return from both income and capital appreciation, expected to be secured on new investments made over the long-term future of the Fund	9	3½
The increases in pensionable earnings as a result of inflationary pressures	7	1½
The increases in the flow of income from ordinary shares, unit trusts and properties	4½	-1

* The rates relative to price inflation.

5.6 At first sight it may be thought that the operation of the economy is variable with no stable relationship existing between the various factors about which assumptions need to be made in the valuation basis. However, when past experience is examined over a period of a length consistent with the long future period with which the valuation is concerned, a degree of stability in the relationship between the relevant factors becomes apparent. Indeed, it is important to emphasise that it is the relationships between various assumptions which are important, rather than the absolute level of each assumption.

Increases in Prices

5.7 The first economic assumption to be considered is price inflation, represented by the General Index of Retail Prices. When the valuation work was carried out, price inflation had increased to a peak approaching 8% p.a., having averaged about 5% p.a. over the preceding five years and having been as low as 2½% from mid 1985 to mid 1986. Given the commitment of the UK Government (and the governments of other European Community countries) to control price inflation, we have assumed that the rate of growth of prices will average 4½% p.a. in the future.

Growth in Pensionable Earnings

5.8 The next element of the basis to consider is the general rate of growth of wages and salaries as a result of increasing productivity and of inflationary pressures i.e. growth excluding that arising as a result of the pay progression of an individual due to increasing seniority. Prices and wages tend to increase together, but the wages index increases at a faster rate than the retail prices index indicating an increase in wages in real terms. There has, in fact, been a steady growth in the excess of wages index over prices during the period since 1920. It is a remarkably smooth rate of growth and averages about 2% p.a.

5.9 We believe there are sound reasons for assuming that national average earnings will continue to grow by 2% p.a. more than prices in the future and accordingly propose to adopt this assumption in the valuation. Combining the 2% real growth of wages and salaries with 4½% nominal increase in retail prices, leads to a nominal rate of growth of pay levels of 6½% p.a.

Investment Returns

5.10 There are two major assumptions which must be made in the valuation as regards investment returns. The first assumption concerns the rate of future dividend growth and is necessary in order to place a value upon the assets held at the valuation date. The second assumption concerns the overall rate of return expected to be secured upon new investments made over the future lifetime of the Fund. Separate consideration is given to each of these assumptions in the following paragraphs.

Rate of Dividend Growth

5.11 In recent years, the growth in the level of share dividends has exceeded the Retail Prices Index; and although in the last decade the reverse was the case, we believe the appropriate assumption for the valuation is that the growth in future dividends will remain constant in real terms. With an assumed rate of price inflation of 4½%, this assumption leads to a 4½% nominal rate of growth of dividends.

UK Equities

5.12 The overall rate of return on equities held for a long period can be shown to be approximately equal to the rate obtained by adding together (a) the dividend yield upon which the stock was purchased and (b) the rate of dividend growth secured. The rate of dividend growth has already been considered in paragraphs (5.10) above, so consideration need now only be given to the dividend yield.

5.13 The dividend yield on ordinary shares represents the terms on which a stream of future dividends can be bought and sold. Generally dividend yields are low when share prices are high (and vice versa) and the market peaked in 1972 and 1987. Dividend yields at the valuation date were about 4½%, which is a little less than the average level over the last sixty years or so.

5.14 In our view 4½% is an appropriate rate of dividend yield to assume for future purchases and sales. This assumption, combined with the proposed assumptions of price inflation of 4½% p.a. and no growth of dividends in real terms leads to a total investment return of 4½% p.a. in real terms and about 9% p.a. in nominal terms. This rate may be taken to be net of expenses of investment, including investment management fees and investment administration costs.

Fixed Interest Gilt-Edged Securities

5.15 When inflation was not a feature of the economy, the rates of interest obtainable on fixed interest gilt-edged securities was some 3% to 4%. The rates however rose to record levels in the 1970s, when inflation was high, and the rates current at the valuation date were just over 9½% for long-dated gilts. The course of long-term interest rates provides no evidence to suggest that the proposed rate of 9% p.a. is inappropriate, when taken in conjunction with other factors.

Index-linked Gilt-Edged Securities

5.16 These securities provide a useful point of reference against which yields obtainable on other classes of investment may be judged. Over recent years, they have been bought and sold in the market on real yields usually in the range of 3½% to 4% p.a. It is to be expected that a well-managed and balanced portfolio should be able to obtain a higher yield than that obtainable by investing solely in index-linked gilts and that index-linked gilts will not form a large proportion of the investment portfolio. In this context, an assumed average real rate of return of 4½% p.a. on the overall portfolio of investments does not seem unreasonable.

Summary

5.17 From the preceding paragraphs, it can be seen that the assumptions made in the 1989 valuation are as follows:

	Nominal % p.a.	*Real % p.a.
The rate of price inflation	4½	-
The valuation rate of interest, i.e. the rate of return from both income and capital appreciation, expected to be secured on new investments made over the long-term future of the Fund	9	4½
The increases in pensionable earnings as a result of inflationary pressures	6½	2
The increases in the flow of income from ordinary shares, unit trusts and properties	4½	-

* The rates relative to price inflation.

Statistical Assumptions

5.18 The main assumptions in this area are as follows:

(i) the rates of mortality, ill-health retirement, withdrawal from membership and retirement in normal health which will be experienced by active members in the future;

(ii) the rates of mortality which will be experienced by members after they have retired and by their spouses;

(iii) the proportion of members and pensioners who are married at their death;

(iv) the future rates of change in pensionable pay which arise from pay scales or other influences domestic to the employer.

5.19 It has been found that for many of the statistical assumptions, past experience is a good guide to what is likely to happen in the future. Such assumptions may therefore be derived from past experience adjusted to provide for continuing trends such as reducing rates of mortality.

5.20 The assumptions which we have made for the 1989 valuation are based very largely on our analysis of the experience of Local Government Superannuation Funds over the period between the 1979 and the 1984 valuations. We are able to analyse the experience of about one-third of a million contributing members and so the analysis produces highly significant results.

5.21 To some extent it would have been preferable to have looked at the experience between the dates of the 1984 and 1989 valuations before settling the 1989 valuation assumptions. It is, however, unlikely that an examination of the later experience would have led to any changes to the assumptions which would have had any significant effect on the valuation results. Furthermore, to have waited until the analysis of the 1984 to 1989 experience was available would have resulted in an unacceptable delay in the production of the valuation results.

5.22 It is worth commenting upon two of the sets of statistical assumptions made in the 1989 valuations, namely the mortality assumptions and the salary progression assumptions.

5.23 Mortality. One point which had to be considered with great care is whether allowance should be made in the assumptions for the possible effect of AIDS when the future progress of AIDS continues to be extremely uncertain. Research which has been done within the Firm on the possible effect of AIDS on the financial position of pension funds generally suggests that the effects would not be material. Accordingly we have decided that no explicit allowance need be made for it in the 1989 valuations, and indeed the assumptions we have made reflect the continuing increase in the expectation of life.

5.24 Salary Progression. The progression of salary from age to age as a result of seniority has usually been less steep at the older ages than at the younger ages. For some time now, however, a feature of our analyses of the salary progression of pension scheme members is that, whilst older employees, say those aged over 45 or 50, have received increases in excess of price inflation, they have not received increases fully in line with general earnings escalation. This feature has occurred across the board i.e. in our analyses of the experience of both private and public sector pension schemes. In the 1984 valuations, we adopted a flat salary scale at the older ages, i.e. one which at these ages anticipated total earnings increases in line with the national average. However, for the 1989 valuations, we have adopted a decreasing scale, the reduction averaging ½% for each year of advancing age which, when combined with the assumed general rate of earnings growth of 2% p.a. above price inflation, leads to assumed increases of 1½% p.a. above price inflation at these older ages.

VI **Results of the Valuation**

6.1 As discussed in Section IV above, we look at the results of the valuation in three parts:

(a) the comparison of liabilities in respect of past service with the assets available;

(b) the contributions required to support future accruals of benefits; and

(c) the adjustments to this contribution requirements to take into account the past service position.

In the following paragraphs consideration is given to the results, calculated by reference to the actuarial assumptions described in Section V.

Past service position

6.2 In view of the introduction of pensions increases as a Fund liability, we need to look separately at the position with and without pensions increases. For the Fund as a whole, we have the following results.

	£ millions	
	Excluding Pensions Increases	Including Pensions Increases
Value of liabilities in respect of:		
Pensions to former employees and their dependants, and widows' pensions	0.90	1.68
Deferred benefits for early leavers	0.29	0.44
Current pensionable employees in respect of service prior to 31 March 1989	5.81	7.06
Total accrued liabilities	7.00	9.18
Assets as valued	11.79	11.79
Surplus	£ 4.79m	£ 2.61m
Funding level	168%	128%

6.3 The main reason for the surplus of £4.79m now shown on the basis excluding pensions increases is the continuing good performance of the assets. Further surplus has arisen from the change of actuarial basis.

6.4 The imposition of the liability for pension increases changes the position to a smaller surplus amounting to about 28% of the assets. In view of the over-funding penalties imposed by the Finance Act 1986 (see paragraph 2.7 above), the need to transfer pensions increase liabilities to the Superannuation Fund is clear. The additional liabilities have been covered by the surplus.

Future service contribution

6.5 The combined employers' and employees' contribution rates needed to support accruing benefits are set out in the table below (expressed as percentages of employees' contributions).

	Excluding Pensions Increases	Including Pensions Increases
Combined rate	176%	210%
less employees' contributions	100%	100%
Employers' rate	76%	110%

6.6 These rates compare with the 100% employers' "primary" rate set at the 1984 valuation, the decrease in the figures excluding pensions increases being primarily the result of the changed actuarial assumptions and method.

6.7 It should be pointed out that these rates are sensitive to the actuarial assumptions, particularly the economic assumptions used. For example, an increase in the overall return on assets assumed from 9% to 9½% with no other changes in the assumptions would decrease the combined rate of contributions (including pensions increases) from 210% to about 183% of employee contributions (but would have little net effect on the surplus shown in paragraph 6.2).

Employers' contributions on 100% funding target

6.8 A 100% funding level would give employers' contribution rates (for the Fund as a whole) as follows:

	% of employees' contributions
Combined rate for future service	210
less employees' contributions ..	100
	110
less amortisation of surplus ...	60
Employers' contribution rate ...	50%

Employers' contribution rates for each Employing Authority are certified in Appendix B to this Report.

Finance Act 1986

6.9 The Fund is shown to be in surplus in paragraph 6.2, but there is no question of overfunding on the basis prescribed by the Finance Act 1986 (now incorporated within the Income and Corporation Taxes Act 1988). Our formal Certificate to this effect is attached at Appendix C to this report.

VII **Conclusions and Recommendations**

7.1 The main result of the valuation is to show that good asset performance has increased the Fund's surplus to the extent that the surplus was more than sufficient to cover the accrued pensions increase liabilities transferred to the Fund.

7.2 A more optimistic view of the future built into the actuarial assumptions and methods has led to the incorporation of pensions increase liabilities without a significant increase in the contributions required.

7.3 We recommend that each employer pays from 1 April 1990 to 31 March 1993 the proportion of employees' total contributions set out in Appendix B to this Report which is in the form of a Certificate complying with the provision of Regulation P6 of the Local Government Superannuation Regulations 1986.

A F Wilson
Fellow of the Institute of Actuaries
Partner in the Firm of R Watson & Sons

AFW/17G11/D3638.RP2
September 1990

NOTTINGHAMSHIRE ADMISSION AGREEMENT ETC SUPERANNUATION FUND

Summary of the Fund accounts for the period 1 April 1986 to 31 March 1989

		£
Market Value of Fund as at 1 April 1986		2,368,000
Income		
Employees' contributions	787,000	
Employers' contributions	787,000	
Transfer values received	46,000	
Investment income	996,000	
Changes in market values	1,486,000	
Transfer from main fund	4,522,000	
Other income	6,000	
	8,630,000	
Expenditure		
Pensions, grants and gratuities .	445,000	
Transfer values	222,000	
Refunds of contributions	30,000	
Expenses of administration and investment	50,000	
	747,000	7,883,000
Market Value of Fund as at 31 March 1989		£10,251,000

17G11/D3638.AP

Appendix B to Report on
the Actuarial Valuation
as at 31 March 1989

NOTTINGHAMSHIRE ADMISSION AGREEMENT ETC SUPERANNUATION FUND

Certificate of the Actuary regarding contributions payable by the employing Authorities

The County Treasurer
Nottinghamshire County Council

Dear Sir

(1) In accordance with your instructions, I have made an actuarial valuation of the Nottinghamshire Admission Agreement Etc Superannuation Fund as at 31 March 1989.

(2) In accordance with Regulation P6(1) of the Local Government Superannuation Regulations 1986 (as amended) I have made an assessment of the contributions which should be paid to the Superannuation Fund by the employing authorities.

(3) I set out in the attached Statement the contributions which, on the above basis, should in my view be payable to the Superannuation Fund by the interested employing authorities.

Yours faithfully

A F Wilson
Fellow of the Institute of Actuaries
Partner in the Firm of R Watson & Sons

September 1990

17G11/D3638.AP

NOTTINGHAMSHIRE ADMISSION AGREEMENT ETC SUPERANNUATION FUND

Common Contribution Rate payable by each employing authority under Regulation P6(1)(a): 50% of members' contributions

Individual Adjustments payable by the respective authorities under Regulation P6(1)(b) expressed as varying percentages of the respective members' contributions in the cases of the bodies listed below:

	Percentage of members' contributions from 1 April 1990 to 31 March 1993
Admitted Bodies	
Institute for the Deaf	5
Age Concern	5
Stonham Housing Association	5
East Mids Regional Exam Board	5
East Midlands Arts	5
Catholic Children's Society	5
Southwell Recreation Centre	5
Nottm Citizens Advice Bureau	5
MIND	5
Nottm Poly Students' Union	5
East Mids Area Museum Service	5
EMFEC	5
Alcohol Problems Advisory Service	5
Abbey & Kilton Boys' Club	5
Monty Hind Boys' Club	5
Hyson Green Boys' Club	5
Nottingham Scout Association	5
Mansfield Citizens Advice Bureau	5
Nottingham ITEC	5
Mansfield ITEC	5
East Midlands International Airport	-5
Nottingham & Dist Comm Relations Council	5
NORSCA Whitegates Management Committee	5
Nottingham Development Enterprise Corporation	53
Cresswell Crags	60
Greater Nottingham Groundwork Trust	60

The following authorities had no pensionable employees at the valuation date and are assumed to reimburse the Fund for pension increases on a pound-for-pound basis:

Notts Community Council
Mary Ward College
St Hugh's College
CLASP
Aspley Boys Club

17G11/D3638.AP

Appendix C to Report on
the Actuarial Valuation
as at 31 March 1989

CERTIFICATE

This Certificate is given to the Commissioners of Inland Revenue for the purposes of paragraph 2(3) of Schedule 22 to the Income and Corporation Taxes Act 1988.

NOTTINGHAMSHIRE AGREEMENT ETC SUPERANNUATION FUND

I hereby certify that:

(1) in my opinion as at 31 March 1989 the value of the assets of the Fund did not exceed 105% of the value of the liabilities of the Fund;

(2) the assets and liabilities to which paragraph (1) refers have been determined in accordance with principles and requirements prescribed by the Pension Scheme Surpluses (Valuation) Regulations 1987.

Signature .... September 1990

A F Wilson
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