

Office of the Superintendent
of Financial Institutions

Bureau du surintendant
des institutions financières

**Benefit Plan
Associated with the
Royal Canadian Mounted Police
(Dependants) Pension Fund**

Actuarial Report

as at 31 March 1994

Canada

BENEFIT PLAN
ASSOCIATED WITH THE
ROYAL CANADIAN MOUNTED POLICE (DEPENDANTS) PENSION FUND

ACTUARIAL REPORT

AS AT 31 MARCH 1994

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Report on the actuarial review as at 31 March 1994
of the benefit plan associated with the
Royal Canadian Mounted Police (Dependants) Pension Fund

I. Introduction

Part IV of the Royal Canadian Mounted Police Pension Continuation Act governs the operation of the Royal Canadian Mounted Police (Dependants) Pension Fund. Pursuant to subsection 56(1) of the Act, we have made an actuarial review as at 31 March 1994 of the benefit plan associated with the Fund. The previous review was as at 31 March 1992. The next review is scheduled for 31 March 1997 because the valuation cycle has been lengthened to three years, which is still less than the maximum of five years allowed by the Act.

During the intervaluation period the only change to the plan provisions occurred on 20 April 1993 when section 97 of Bill C-55 came into force. From that date onward, a widow retains her eligibility for benefits from the plan while she cohabits with a man to whom she is not married.

Also during the intervaluation period, the Governor in Council made benefit improvements in accordance with the surplus distribution recommendations in the 1992 report. The major improvements were effective pension increases of 9.8% as at 1 April 1993 and 8.9% as at 1 April 1994. There were also increases in the lump sum death benefit payable on the death of a member and in the residual amount payable on the early death of a widow.

Pursuant to subsection 56(2) of the Act, Section IX of this report contains our recommendations for the disposition of the actuarial surplus identified in our review.

II. Plan Overview

In 1934 the government enacted Part IV of the Royal Canadian Mounted Police Act to establish a benefit plan for constables. The benefits are financed solely by the accumulated contributions made by the constables. The funding vehicle for the plan is the Royal Canadian Mounted Police (Dependants) Pension Fund, which is an interest-bearing account maintained by the Government of Canada.

The government amended the plan on a number of occasions, notably in 1948 and 1975. Appendix 1 is a history of the plan provisions over the years and Appendix 2 is a summary of the plan provisions as at 31 March 1994.

The 1948 amendments virtually closed the plan to new entrants; since then, the membership has declined from 2,102 to its present level of 250. With the lack of new entrants, the purchase of benefits diminished steadily until 1978 when it ceased altogether with the retirement of the last active plan member.

Until the 1975 amendments the plan generated almost no surplus, and therefore benefit increases were minimal. In 1975 the interest rates credited to the Fund became linked to the yield on a notional long-term bond portfolio earning more than the fixed 4% per annum previously credited to the Fund. The resulting higher interest credits flowed through to members and survivors in the form of more generous benefit increases from 1975 onward.

Although the plan membership has been declining steadily since 1948, the Fund itself has grown each year because of the excess of interest credits over pension payments. It is estimated (see Section X) that this upward trend will continue for another nine years. Thereafter the Fund will decline steadily until the last dollar is paid to the last widow, estimated to occur in the plan year 2037.

III. Data and Membership Statistics

The RCMP Services Section of Public Works and Government Services Canada supplied the data on the status and benefit amounts of both members and widows. After a review for consistency and general reasonableness, we concluded that the data were very accurate. We wish to acknowledge the cooperation and able assistance received from the RCMP Services Section.

In this report, "member" means a former contributor to the Fund who was still alive at 31 March 1994 and whose contributions remained in the Fund. "Widow" means a widow whose pension was payable from the Fund as at 31 March 1994.

The following table derived from the basic data reconciles the numbers of members and widows as at 31 March 1994 with the numbers shown in the previous report.

	<u>Members</u>	<u>Widows</u>
At 31 March 1992	265	168*
Data corrections	(3)	0
Withdrawal	(1)	0
Deaths	(11)	(5)
New survivors	<u>0</u>	<u>10</u>
At 31 March 1994	250	173

There were no female constables when the Fund was open to new entrants; it follows that all current members are males and that all surviving spouses are widows.

Appendices 3 and 4 show detailed information on the ages and the pension entitlements of the members and widows, respectively.

* Includes a widow whose pension was suspended until 20 April 1993 in accordance with subsection 54(2) of the Act.

IV. Income Statements

Since the last valuation the Fund balance has grown by 11.5% to reach \$23,951,000 as at 31 March 1994. The following income statements show that the growth in the Fund is the result almost entirely of the excess of interest credits over pension payments.

	<u>1993</u> <u>Plan Year</u>	<u>1994</u> <u>Plan Year</u>
Opening Fund balance	\$21,479,000*	\$22,650,000
Interest credits	2,285,000	2,372,000
Instalment payments	16,000	15,000
Survivor pension benefits	(977,000)	(1,086,000)
Unmarried member death benefits	(130,000)	0
Widow death benefits	(14,000)	0
Withdrawal benefits	<u>(9,000)</u>	<u>0</u>
Closing Fund balance	\$22,650,000	\$23,951,000

The rate of return in the 1993 plan year (the 12 months ended 31 March 1993) was 10.9%; in the following plan year it declined marginally to 10.7%.

* Includes interest adjustment of \$17,000 arising from Bill C-55.

V. Actuarial Assumptions

This section describes the actuarial assumptions used in the valuation. It is divided into three main components: interest assumptions, demographic assumptions, and other assumptions. Based on our analysis of recent experience and our expectations for the future, we modified several assumptions used in the previous valuation. The actuarial analysis supporting the major modifications to the demographic assumptions is in Section VIII.

A. Interest Assumptions

The government applies the same quarterly interest rates to the Fund as it does to the three major Superannuation Accounts (Public Service, Canadian Forces, and Royal Canadian Mounted Police). The interest rates are based on the assumption that these accounts have always used the money available for investment at the end of each quarter to buy notional 20-year Government of Canada bonds yielding market rates but priced at par. Moreover it is assumed that these notional bonds are held to maturity.

We calculated the valuation interest assumption by projecting the yields that the three accounts would generate after 31 December 1992 on a fully ongoing basis (includes new entrants). To make the projections, we assumed:

- continuation of the buy-and-hold strategy, and
- reinvestment of the net cash flow in each year at that year's "new money rate" (or borrowing at that rate if the net cash flow is negative).

The new money rate for 1993 was 8.2%. For each subsequent year, the new money rate is the assumed average yield in that year on 20-year Government of Canada bonds. To develop this assumption, we reviewed various economic forecasts as well as the projections in the February 1994 Budget. We concluded that the yields on new long-term investments are likely to decline with each passing year until the calendar year 2000, when the ultimate rate of 6% per annum is first reached.

We developed the valuation interest rates and new money rates on a calendar year basis; both were then converted to a plan year basis (April to March) by linear interpolation.

For this valuation, we adopted the following interest assumptions:

<u>Plan Year</u>	<u>Valuation Rate</u> %	<u>New Money Rate</u> %
1995	10.4	8.1
1996	10.2	8.0
1997	10.0	7.7
1998	9.8	7.4
1999	9.5	6.9
2000	9.2	6.4
2001	8.9	6.0
2002	8.5	6.0
2003	8.1	6.0
2004	7.9	6.0
2005	7.7	6.0
2006	7.5	6.0
2007	7.3	6.0
2008	7.2	6.0
2009	7.0	6.0
2010	6.8	6.0
2011	6.7	6.0
2012	6.5	6.0
2013	6.4	6.0
2014	6.3	6.0
2015	6.2	6.0
2016	6.1	6.0
2017	6.1	6.0
2018+	6.0	6.0

The yields on a notional portfolio of long-term bonds held to maturity vary little from one year to the next. We therefore expect the valuation interest rates to be good estimates of future experience, especially in the first few years.

B. Demographic Assumptions

1. New Entrants

Because the Fund has been closed to new entrants since 1959, we continued to assume no future new entrants.

2. Members

Appendix 5 shows the assumed rates of mortality applicable to members in the 1995 plan year; at most ages, the rates are marginally lower than those assumed for 1995 in the previous valuation. We obtained the mortality rates for subsequent years by applying the accompanying annual reduction factors to the 1995 mortality rates.

Although members have the unrestricted right to withdraw from the plan, we continued to assume no future withdrawals.

3. Widows

Appendix 6 shows the rates of mortality assumed applicable to widows in the 1995 plan year; at most ages, the rates are marginally higher than those assumed for 1995 in the previous valuation. We obtained the mortality rates for subsequent years by applying the accompanying annual reduction factors to the 1995 mortality rates.

4. Prospective Widows

Appendix 7 shows the proportion of members assumed to leave, upon death, a widow eligible for a pension from the Fund; the proportions are generally lower than those assumed in the previous valuation. Also shown is the assumed age difference between the widow and the deceased member; compared to the previous valuation, we expect the prospective widows to be noticeably older.

We continued to assume that prospective widows would be subject to the same underlying mortality as widows.

5. Eligible Children

In this valuation we continued to assume that no member would be survived by a child or student eligible to receive an annuity.

C. Other Assumptions

1. Child Annuity in Course of Payment

Although there was one child annuity in course of payment at the valuation date, we chose to ignore it in this valuation. This simplification caused a trivial understatement of the actuarial liability.

2. Late Reporting of Deaths

The data reflect only those member and widow deaths up to 31 March 1994 that were reported by 15 April 1994. Any member death reported subsequently would cause a loss that we assumed would be offset by a gain on a late-reported widow death. We therefore ignored the reporting lag when determining the actuarial liability.

3. Administration Expenses

We made no provision in the liabilities for administration expenses because the government administers the plan free of charge.

VI. Valuation Balance Sheet

We based the valuation as at 31 March 1994 on the plan provisions described in Appendix 2, the 510% dividend* in effect as of 1 April 1994, and the data and actuarial assumptions described in earlier sections. The valuation results are summarized below. Section IX contains our recommendations for the disposition of the large actuarial surplus.

Actuarial Assets

Fund balance	\$23,939,000**
Actuarial present value of instalments in course of payment by members	<u>101,000</u>
Total actuarial assets	\$24,040,000

Actuarial Liability

Actuarial present value of benefits to be paid on member deaths		
• widow pensions	\$4,837,000	
• lump sums	<u>1,922,000</u>	6,759,000
Actuarial present value of benefits in course of payment to widows		<u>8,455,000</u>
Total actuarial liability		\$15,214,000

Actuarial Surplus \$8,826,000

* For all benefits except lump sums payable on member deaths, for which the dividend is 370%.

** After deduction of an outstanding residual payment of \$12,000.

VII. Development of Actuarial Surplus

The balance sheet in this report shows an actuarial surplus of \$8,826,000 which may be reconciled with the previous actuarial surplus of \$8,808,000 as follows:

Actuarial surplus as at 31 March 1992		\$8,808,000
Cost of 1993 and 1994 benefit increases		(2,002,000)
Data and other corrections		<u>46,000</u>
Restated actuarial surplus as at 31 March 1992		\$6,852,000
Interest on restated actuarial surplus		1,568,000
Experience gains and losses		
Mortality of members	\$222,000	
Mortality of widows	(198,000)	
Withdrawals	32,000	
Age of new widows	30,000	
Proportion married	25,000	
Interest credits	(12,000)	
Miscellaneous	<u>(24,000)</u>	
		75,000
Change in actuarial assumptions		
Valuation interest rate	\$(224,000)	
Age of new widows	214,000	
Mortality of members	138,000	
Mortality of widows	100,000	
Proportion married	<u>28,000</u>	
		256,000
Refinements of valuation program		<u>75,000</u>
Actuarial surplus as at 31 March 1994		\$8,826,000

VIII. Actuarial Analysis

The preceding section shows the experience gains and losses of the plan during the two-year period ended 31 March 1994. It also shows the financial effect of the changes made to the actuarial assumptions. This section examines the significant items in detail.

A. Mortality of Members

In the previous valuation we assumed the mortality of members to be equivalent to that assumed for males in the 1989 valuation of the pension plan established under the Royal Canadian Mounted Police Superannuation Act (RCMPSA).

During the two-year period ended 31 March 1994, the 11 reported member deaths were only 61% of the 17.9 expected deaths. As a result the plan recorded an experience gain of \$222,000.

Based on a study of experience from 1972 onward, we assumed for this valuation that member mortality would be equal to that assumed from 1 April 1994 onward for male regular members in the 1992 valuation of the RCMPSA pension plan. This new mortality basis increased the actuarial surplus by \$138,000.

B. Mortality of Widows

In the previous valuation we assumed the mortality of widows in the 1993 plan year to be essentially equal to the female mortality rates of the 1980-82 Life Tables for Canada projected ten years in accordance with Scale D of the Society of Actuaries. Mortality in subsequent plan years was obtained by applying the mortality projection factors assumed in that valuation to the 1993 base rates.

During the two-year period ended 31 March 1994, the 5 reported widow deaths were only 42% of the 11.9 expected deaths. As a result the plan recorded an experience loss of \$198,000.

Based on a study of experience from 1972 onward, we assumed for this valuation that widow mortality would be equal to that assumed from 1 April 1994 onward for surviving widows in the 1992 valuation of the RCMPSA pension plan. This new mortality basis increased the actuarial surplus by \$100,000.

C. Age of New Widows

In the previous valuation we assumed that the age of new widows would differ only slightly from the corresponding assumption in the 1989 valuation of the RCMPSPA pension plan.

The 10 new widows during the two-year period ended 31 March 1994 were on average 2.5 years older than expected. As a result the plan recorded an experience gain of \$30,000.

For this valuation we materially changed the assumption for the age of new widows, based largely on theoretical considerations involving the assumed mortality of widows. This new assumption increased the actuarial surplus by \$214,000.

D. Valuation Interest Rate

In the last valuation we assumed that the Fund would earn interest at an average annual rate of 10.85% during the two-year period ended 31 March 1994. The actual interest rates were very close to expected, causing an experience loss of only \$12,000.

We developed the interest rates for this valuation by the procedure described in Section V. Adopting this new interest assumption decreased the actuarial surplus by \$224,000.

IX. Recommended Disposition of Actuarial Surplus

The \$8,826,000 actuarial surplus shown in this valuation is large when expressed as a proportion (58%) of the actuarial liability of \$15,214,000. However, we do not expect significant amounts of actuarial surplus to arise from future experience. Therefore the current actuarial surplus, together with interest thereon, effectively must provide for all benefit increases during the remaining lifetime of the plan, estimated to be 43 years.

The intent is to distribute the actuarial surplus as it is earned relative to the actuarial basis upon which contributions were calculated, adjusted to ensure that the purchasing power of the benefits is maintained. Using this criterion, we found that \$3,119,000 of actuarial surplus should be considered as earned and allocated to provide benefit increases in 1995, 1996, and 1997.

We recommend that the allocated actuarial surplus be distributed in accordance with the established methodology. The general principle is that actuarial surplus should be distributed to a member or his survivor in materially the same proportion as he is considered to have contributed to it. Furthermore the actuarial present value of the pension payable to a prospective widow should exceed the lump sum death benefit (based on the actuarial present value of a smaller pension to a hypothetical 75 year-old widow) that would otherwise be payable upon the death of the member.

Based on the foregoing, we recommend distributing the allocated actuarial surplus of \$3,119,000 to provide the benefit improvements shown on the next page. The remaining \$5,707,000 of actuarial surplus should be retained in the Fund for future distribution in accordance with the established methodology.

Recommended Benefit Improvements

- **pension increases for current and prospective widows and children in accordance with the following table:**

<u>Effective date</u>	<u>Dividend increase*</u>	<u>Cumulative dividend*</u>	<u>Effective increase**</u>
1 April 1995	55%	565%	9.0%
1 April 1996	55%	620%	8.3%
1 April 1997	55%	675%	7.6%

- **increases in the lump sum death benefit payable upon the death of a member, based on the following pension increases for a hypothetical 75 year-old widow:**

<u>Effective date</u>	<u>Dividend increase*</u>	<u>Cumulative dividend*</u>	<u>Effective increase**</u>
1 April 1995	10%	380%	2.1%
1 April 1996	10%	390%	2.1%
1 April 1997	10%	400%	2.0%

- **increases in the residual amount payable on the death of a widow of a member who dies in the 1996, 1997, or 1998 plan years, obtained by deeming the member's contributions to be increased by 565%, 620%, and 675%, respectively.**

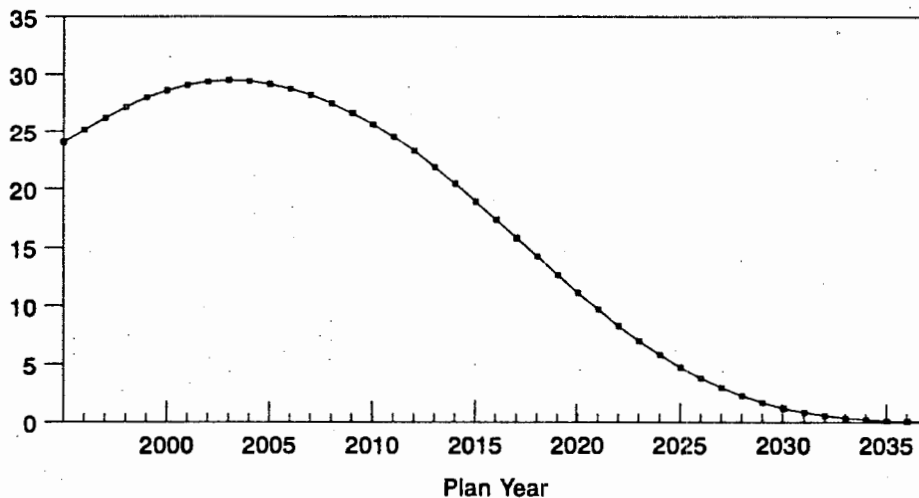
* Expressed in terms of the pensions purchased by contributions.

** Percentage increase in the total pension (i.e., the pension purchased by contributions, together with the cumulative dividend applied thereto).

X. Asset Projections

Assuming that the actuarial assumptions of this valuation are realized and that the actuarial surplus is distributed in accordance with the methodology described in Section IX, we projected what the Fund assets would be over the remaining lifetime of the plan. The graph starts with assets of \$24,040,000 as at 1 April 1994, which is the beginning of the 1995 plan year.

Projected Assets
(\$ millions)



Under this scenario the Fund assets reach their maximum of \$29,500,000 in the plan year 2003 and will decline steadily thereafter until the Fund is exhausted in the plan year 2037.

This graph is only a general indicator of the estimated progress of the Fund assets. The actual Fund assets in the future will depend entirely on the actuarial experience and the actuarial surplus distribution methodology, neither of which can be known with certainty beforehand.

XI. Actuarial Opinion

In my opinion, for the purposes of this actuarial report:

- the data upon which we based our calculations are sufficient and reliable,
- the assumptions that we used are adequate and appropriate, and
- the methods that we employed are consistent with sound actuarial principles.

This report has been prepared and this opinion has been given in accordance with generally accepted actuarial principles.



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2 December 1994

APPENDIX 1

History of Plan Provisions

The benefit plan associated with the Royal Canadian Mounted Police (Dependants) Pension Fund was established in 1934 when Part IV was added to the Royal Canadian Mounted Police (RCMP) Act. Plan membership was optional for constables on active duty on 1 October 1934; however, it was mandatory for constables appointed to the Force thereafter.

In 1948 Part V (a new pension arrangement) was added to the RCMP Act. Plan members who elected to become contributors under Part V were required to either suspend or terminate their participation in the plan. Moreover the plan was now closed to all new entrants except certain constables whose continuous service dated back to 1 October 1934 or earlier. Lastly the plan was amended so that the government assumed responsibility for any deficit in the Fund.

In 1959 the RCMP Superannuation Act and the RCMP Pension Continuation Act were enacted to provide for all RCMP pension arrangements. The plan was transferred to the RCMP Pension Continuation Act, where it remains.

In 1975 the age at which a son's eligibility for survivor benefits expires was raised from 18 years to 21 years, which already applied to a daughter. In addition survivor benefits were extended to age 25 for unmarried sons and daughters still in school, subject to certain conditions. Lastly the 4% annual interest rate that had always been applied to the Fund balance was replaced by a prescribed interest rate, which in practice was derived from the notional bond portfolio described in Section V.

In 1989 marital status was eliminated in determining the eligibility for survivor benefits of a son or daughter between ages 21 and 25. Also eliminated was the provision for actuarially reducing the pension of a widow more than 20 years younger than her husband at the date of his death.

In 1993 the plan was amended to allow the payment of pension to a widow cohabiting with a man to whom she is not married.

APPENDIX 2

Summary of Plan Provisions

The following summary of the plan provisions has been prepared solely for this report; as such, it has no legal standing or authority.

A. Contributions and Interest

1. Member Contributions

- i. Current Service - To purchase current service benefits, a member on active duty contributed 5% of pay together with any supplementary amounts in accordance with the scale set out in the Act.
- ii. Past Service - A member on active duty could elect to contribute, either in a lump sum or by equivalent* instalments, to purchase benefits in respect of any period of his eligible past service, based on his rate of pay at date of election. Similarly, on promotion to or within the ranks of non-commissioned officers, he could elect to partially or fully upgrade the accrued benefits.

Current service contributions and past service elections both ceased on 31 March 1978 when the last plan member retired from active duty.

2. Government Contributions

The Act requires the Government of Canada to make contributions only if the Fund becomes insolvent. Every valuation to date has revealed an actuarial surplus and therefore the government has never contributed to the Fund.

3. Interest Credits

The methodology for determining the amount of the interest credits made to the Fund by the government is described in the first part of Section V.

* Based on the mortality rates of the CM(5) Table with interest at 4% per annum.

B. Basic Death Benefits

The following benefits, as applicable, are payable on the death of a member who has made the scheduled contributions and has left them in the Fund. (The next subsection describes the dividends payable on these basic death benefits.) For simplicity, we ignore any survivor benefits payable to a child or eligible student.

1. Widow Pensions

A widow is entitled to the pension purchased by the member's contributions at the rates specified in Table II of the Schedule to the Act. In many cases the pension is approximately equal to 1.5% of the member's final pay multiplied by his years of credited service. The pension is payable for life. If the widow dies before receiving payments at least equal to the member's contributions, then a residual amount is payable.

2. Lump Sum Benefits

If a member is not survived by a widow, a lump sum payment is made to the dependants and relatives of the member who are, in the opinion of the relevant Minister, best entitled to share the benefit. The lump sum amount is equal to the actuarial present value* of a pension to a hypothetical widow 20 years older than the member at his death, but not exceeding 75 years of age.

3. Benefit Limitations

Under certain circumstances, the basic death benefits payable to a widow are reduced. This can occur when a member marries after age 60, in which case the actuarial present value* of the pension to his widow cannot exceed the lump sum payable if he were not survived by a widow. It can also occur when a retired member marries before age 60 and dies within five years, without having satisfied the Commissioner of his sound health.

* Based on the mortality rates of a(f) Ultimate Table at 4% per annum.

C. Dividends on Basic Death Benefits

The Act provides that if the Fund is substantially in excess of the amount required to make adequate provision for the prospective payments to be made out of it, the Governor in Council may by order increase all the plan benefits, or any of them, in such manner as may appear equitable and expedient.

Until 31 March 1991 the benefit increases took the form of dividend percentages applied equally to all basic death benefits except the residual amount payable on the early death of a widow. Effective 1 April 1991 separate dividend percentages for lump sum benefits and for pensions to actual widows (current and prospective) were introduced. At the same time, dividends first became applicable to the residual amount payable on the early death of a widow.

The dividends that may be declared are not subject to the previously described limitations on the basic death benefits.

D. Withdrawal Benefits

A member can elect at any time to withdraw his contributions from the Fund, without interest; neither he nor any of his dependants has any entitlement under the plan thereafter.

E. Instalment Payments

A member who elected to make a series of instalment payments in lieu of a lump sum contribution can subsequently elect to discontinue those payments. The actuarial present value* of the remaining instalment payments is thereupon converted into the equivalent** amount of basic death benefit. The member's basic accrued benefit is then reduced by that amount, which reduces the amount of the accrued dividends accordingly.

If a member dies while making instalment payments, the lump sum contribution is deemed to be paid in full. Consequently the member's basic accrued benefit is not reduced.

* Based on the mortality rates of the CM(5) Table with interest at 4% per annum.

** Based on the rates in Table II of the Act.

APPENDIX 3

Members as at 31 March 1994

<u>Age Last Birthday</u>	<u>Number</u>	<u>Accrued Widow Pensions*</u>	
		<u>Average</u> \$	<u>Total</u> \$
60-64	13	12,500	163,000
65-69	71	11,400	809,000
70-74	68	9,100	619,000
75-79	53	9,000	477,000
80-84	37	7,300	270,000
85-89	<u>8</u>	<u>5,700</u>	<u>46,000</u>
All ages	250**	9,536	2,384,000

Average age last birthday: 72.9 years

* Amounts reflect the basic pension together with the 510% dividend effective from 1 April 1994 for actual widows.

** Of these members, 83 were making instalment payments for life in respect of past service elections. The average annual amount was \$186 and the aggregate annual amount was \$15,438.

APPENDIX 4

Widows as at 31 March 1994

<u>Age Last Birthday</u>	<u>Number</u>	<u>Annual Pension Payments*</u>	
		<u>Average</u> \$	<u>Total</u> \$
55-59	3	7,300	22,000
60-64	12	10,500	126,000
65-69	27	7,600	205,000
70-74	40	7,400	296,000
75-79	39	6,700	261,000
80-84	33	5,300	175,000
85-89	16	5,100	82,000
90-94	2	3,100	6,000
95-99	<u>1</u>	<u>3,000</u>	<u>3,000</u>
All ages	173	6,798	1,176,000

Average age last birthday: 75.1 years

* Amounts reflect the basic pension together with the 510% dividend effective from 1 April 1994.

APPENDIX 5

Mortality of Members

<u>Age Last Birthday</u>	<u>Current* Annual Rates</u>	<u>Future* Annual Rate Reductions</u>
60	.0072	1.30%
65	.0132	1.30
70	.0229	1.25
75	.0381	1.25
80	.0670	1.20
85	.1032	.90
90	.1460	.55
95	.2169	.10
100	.3747	-
105	.6464	-
110	1.0000	-

* "Current" means the 1995 plan year and "future" means the plan years thereafter.

APPENDIX 6

Mortality of Widows

<u>Age Last Birthday</u>	<u>Current* Annual Rates</u>	<u>Future* Annual Rate Reductions</u>
55	.0044	1.50%
60	.0068	1.50
65	.0106	1.50
70	.0168	1.50
75	.0279	1.45
80	.0467	1.45
85	.0814	1.05
90	.1388	.70
95	.2288	.30
100	.3884	-
105	.6569	-
110	1.0000	-

* "Current" means the 1995 plan year and "future" means the plan years thereafter.

APPENDIX 7

Eligible Widows upon a Member Death

<u>Age Last Birthday at Death</u>	<u>Proportion of Members Married</u>	<u>Widow Age Difference*</u>
60	.97	(3)
65	.96	(3)
70	.91	(3)
75	.85	(3)
80	.75	(3)
85	.64	(4)
90	.47	(4)
95	.29	(5)
100	.11	(6)
105	.03	(11)
110	.01	(17)

* Age of widow less age of member, both calculated at death of member.