Office of the Superintendent of Financial Institutions
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Report on the Actuarial Examination of the Royal Canadian Mounted Police (Dependants) Pension Fund

as at 31 March 1992

Canada

REPORT ON THE ACTUARIAL EXAMINATION

OF THE

ROYAL CANADIAN MOUNTED POLICE (DEPENDANTS) PENSION FUND

AS AT

31 MARCH 1992

TABLE OF CONTENTS

		Page
I.	Introduction	1
II.	Plan Overview	2
III.	Data and Membership Statistics	3
IV.	Income Statements	4
V.	Actuarial Assumptions	5
VI.	Valuation Balance Sheet	9
VII.	Development of Surplus	10
VIII.	Actuarial Analysis	11
IX.	Recommended Disposition of Surplus	13
X.	Fund Projections	15
XI.	Actuarial Opinion	16

APPENDICES

1.	History of Part IV	17
2.	Summary of Part IV Provisions	19
3-4.	Member and Widow Displays	22
5-7.	Demographic Assumptions	24

Royal Canadian Mounted Police Pension Continuation Act - Part IV

Report on the Actuarial Examination
of the
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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 conducted an actuarial examination as at 31 March 1992 of the Fund; we conducted the previous examination as at 31 March 1990.

During the intervaluation period there were no changes to the provisions governing the operation of the Fund. However, the Governor in Council made benefit improvements in accordance with the surplus distribution recommendations in our report on the 1990 examination. The major improvements were effective general benefit increases of 6.67% as at 1 April 1991 and 6.25% as at 1 April 1992. There were also increases in the residual amount payable on the early death of a widow.

Pursuant to subsection 56(2) of the Act, we have included in this report (see Section IX) our recommendations for the disposition of the surplus identified in our examination.

II. Plan Overview

Part IV of the Royal Canadian Mounted Police Pension Continuation Act established a plan to provide benefits to survivors of constables. The benefits were to be financed solely by the accumulated contributions made by the constables. The funding vehicle for this insurance plan is the Royal Canadian Mounted Police (Dependants) Pension Fund, which is an interest-bearing account maintained by the Government of Canada. Section V describes the notional bond portfolio approach used to determine the periodic interest credits to the Fund.

The government set up the plan in 1934 and amended it on a number of occasions, most notably in 1948 and 1975. Appendix 1 shows the complete history of the plan provisions over the years. Appendix 2 is a summary of the plan provisions in effect as at 31 March 1992.

The 1948 amendments virtually closed the plan to new entrants; since then, the membership has declined from 2,102 to its present level of 265. With the lack of new entrants, the purchase of survivor benefits diminished steadily until 1978 when it ceased altogether with the retirement of the last active member under Part IV of the Act.

Until the 1975 amendments, the Fund earned 4% interest per annum, generated very modest amounts of surplus, and therefore declared only minor benefit increases from time to time. This changed radically in 1975 when the interest rates credited to the Fund were first linked to the yield on a notional portfolio of long-term bonds. The great increase in the interest credits to the Fund generated much larger amounts of surplus. As a result the benefit increases granted after 1975 were far more generous than the previous increases based on the fixed 4% interest rate.

Although the Fund has been closed for some time, it has grown each year because of the excess of interest credits over pension payments. This upward trend will continue for another 13 years under the reasonable scenario described in Section X. Thereafter the Fund will decline steadily until its last dollar is paid to the last widow in approximately the year 2040.

III. Data and Membership Statistics

The Royal Canadian Mounted Police District Services Office of Supply and Services Canada supplied us with data on the status and benefit amounts of both members and widows as at the examination date. After reviewing the data for consistency and general reasonableness, we concluded that it was very accurate. We wish to acknowledge the co-operation and able assistance received from the District Services Office.

In this report, "member" means any former Part IV current service contributor who is still alive at 31 March 1992 and whose contributions remain in the Fund. Just over one-third of the members are still making instalment payments in respect of elections made before retirement. "Widow" means a widow whose pension is in course of payment (or suspended, in one case) as at 31 March 1992. "Eligible child" refers to a child in receipt of an annuity under Part IV.

The following table derived from the basic data reconciles the numbers of members, widows, and eligible children as at 31 March 1992 with the corresponding numbers shown in the report on the previous examination as at 31 March 1990.

	Members	Widows	Eligible Children
At 31 March 1990	282	161*	3
Data corrections	0**	0	0
Deaths	(17)	(7)	0
New survivors	0	14	1
Benefit expiries	0	0	(3)
At 31 March 1992	265	168*	1

Since there were no female constables when the Fund was open to new entrants, it follows that the current membership is entirely male and that the surviving spouses are all widows.

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

* Includes a widow whose pension is suspended per subsection 54(2) of the Act.
** Net result of one addition and one deletion.

IV. Income Statements

Since the last valuation the Fund balance has grown by 12.5% to reach $21,462,000* as at 31 March 1992. 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.

	1991 Plan Year	1992 Plan Year
Opening Fund balance	$19,075,000	$20,242,000
Interest credits	2,050,000	2,158,000*
Contributions	19,000	17,000
Recoveries	5,000	0
Pension payments	(814,000)	(899,000)
Lump sum death payments	(93,000)	(56,000)
Closing Fund balance	$20,242,000	$21,462,000*

The rate of return in the 1991 plan year (i.e., the 12 months ending 31 March 1991) was 11.0%; in the following plan year it declined marginally to 10.9%.

* Includes $529,000 of interest receivable as at 31 March 1992.

V. Actuarial Assumptions

This section describes the actuarial assumptions used in the valuation. It is divided into three main components: economic assumptions, demographic assumptions, and other assumptions. Based on our analysis of recent experience and our expectations for the future, we modified most 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 their available funds (as at the end of each quarter) to buy new 20-year Government of Canada bonds yielding market rates. Moreover, it is assumed these notional bonds are held to maturity.

To develop the valuation interest assumption, we first needed the assets and liabilities of the three major plans to be in equilibrium. Accordingly, we assumed that sufficient new money had been injected on 31 December 1990 so that the book value of the notional investments was equal to the corresponding liabilities.

We then calculated the valuation interest assumption by projecting the yields that the three accounts would generate after 31 December 1990 if we closed the plans at that time. In other words, there would be neither contributions nor corresponding benefit accruals thereafter; however, members would receive their benefits accrued to 31 December 1990, as they became entitled to them. To do the projections, we assumed the following:

- continuation of the buy-and-hold strategy, and
- reinvestment of the net cash flow in each year at the assumed "new money rates".

The "new money rate" for each future plan year is the average yield available on the purchase of a 20-year federal bond. To develop this assumption, we consulted economic forecasters and researchers and also reviewed the projections in the 25 February 1992 federal budget. From our review of long-term economic forecasts we concluded that the yields on new long-term investments are likely to decline with each passing year until 1998 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 (i.e., April to March) by a simple linear interpolation.

For this valuation, we adopted the following interest assumptions:

Plan Year	Valuation Rate %	New Money Rate %
1993	10.9	8.9
1994	10.8	8.4
1995	10.6	7.9
1996	10.4	7.4
1997	10.2	6.9
1998	10.0	6.4
1999	9.7	6.0
2000	9.4	6.0
2001	9.1	6.0
2002	8.8	6.0
2003	8.4	6.0
2004	8.2	6.0
2005	7.9	6.0
2006	7.6	6.0
2007	7.5	6.0
2008	7.4	6.0
2009	7.2	6.0
2010	7.0	6.0
2011	6.8	6.0
2012	6.7	6.0
2013	6.5	6.0
2014	6.4	6.0
2015	6.2	6.0
2016	6.1	6.0
2017+	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 very good estimates of future experience, especially in the first few years.

B. Demographic Assumptions

1. New Entrants

Since the Fund has been closed to new entrants since 1959, we assumed that there would be no future new entrants.

2. Members

Appendix 5 shows the assumed rates of mortality applicable to a member in the 1993 plan year. We obtained the mortality rates for years subsequent to 1993 by applying the annual projection factors shown in Appendix 6 to the 1993 mortality rates. In the previous valuation we used static mortality rates that were at virtually all ages significantly higher than the 1993 mortality rates now assumed.

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

3. Widows

With respect to widows, the only decrement is death. Appendix 5 shows the rates of mortality assumed applicable to widows in the 1993 plan year. We obtained the mortality rates for years subsequent to 1993 by applying the annual projection factors shown in Appendix 6 to the 1993 mortality rates. In the previous valuation we used static mortality rates that were at most ages approximately 5% higher than the 1993 mortality rates now assumed.

4. Prospective Widows

To estimate the value of widow pensions that will become payable in the future as the result of deaths among members, we had to make an assumption as to what proportion of members would leave an eligible widow upon death. The "proportion married" is shown in Appendix 7. In the previous valuation we used the individual marital status of each member, as it had been reported to us.

Another assumption in respect of prospective widows concerns the average age of the widow at the date of death of the member; this is shown in Appendix 7. In the previous valuation we used the individual age differential for each member and his spouse, as it had been reported to us.

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

5. Eligible Children

In this valuation we assumed that no member would be survived by a child or student eligible to receive an annuity. In the previous valuation, we did assume that there would be eligible children, although the number was quite small in view of the ages of the members.

C. Other Assumptions

1. Suspended Pension

Pursuant to subsection 54(2) of the Act, one particular widow's pension has been suspended since 1985. We assumed that payments would resume immediately because we expected her to be reinstated with the enactment of Bill C-55. The resulting overstatement of liability was negligible.

2. Child's Annuity in Course of Payment

Although there was one child's annuity in course of payment at the valuation date, we chose to ignore the associated actuarial liability. This simplifying assumption caused a very minor liability understatement.

3. Late Reporting of Deaths

The data reflect only those member and widow deaths up to 31 March 1992 that were reported by 15 April 1992. 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 plan liabilities.

4. Guarantee on Widow Pensions in Course of Payment

We valued widow pensions in course of payment as if no residual benefit would be payable upon death occurring soon after commencement of the pension. This caused a very modest liability understatement

5. 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

The results of the valuation as at 31 March 1992, based on the plan provisions then in effect, on the 410% dividend in effect* as of 1 April 1992, and on the data and actuarial assumptions described in earlier sections, are summarized below. Our recommendations for the disposition of the very large surplus are found in Section IX.

Assets

Fund balance		$21,462,000
Actuarial present value of instalments in course of payment by members		95,000
Total assets		$21,557,000

Liabilities and Surplus

Actuarial present value of benefits to be paid on member deaths		
• widow pensions	$4,416,000	
• lump sums	1,406,000	
		5,822,000
Actuarial present value of benefits in course of payment to widows		6,876,000
Outstanding payments		51,000
Total liabilities		$12,749,000
Surplus		8,808,000
Total liabilities and surplus		$21,557,000

* For all benefits except lump sums payable on member deaths, for which the corresponding dividend is 350%.

VII. Development of Surplus

The balance sheet in this report shows a surplus in the Fund of $8,808,000 which may be reconciled with the surplus of $3,560,600 as at 31 March 1990 as follows:

Surplus as at 31 March 1990		$3,560,600
Surplus distribution per T.B. 817185		(2,173,600)
Restated surplus as at 31 March 1990		$1,387,000
Interest on restated surplus		171,000
Data corrections		35,000
Experience gains and losses		
Interest credits	$1,959,000	
Mortality of members	431,000	
Mortality of widows	(199,000)	
Miscellaneous items	74,000	
		2,265,000
Change in actuarial assumptions		
Valuation interest rate	$4,727,000	
Mortality of members	1,057,000	
Mortality of widows	(556,000)	
Proportion and age of widows	(219,000)	
Number of eligible children	13,000	
		5,022,000
Refinements of valuation program		(72,000)
Surplus as at 31 March 1992		$8,808,000

VIII. Actuarial Analysis

The preceding section shows the actuarial gains and losses experienced by the plan during the two-year period ending 31 March 1992. It also shows the financial effect of the revisions made to the actuarial assumptions. This section examines the more significant items in some detail.

A. Valuation Interest Rate

In the last valuation we retained the 6% interest rate which had been used in previous valuations. The Fund actually earned interest at an effective annual rate of 10.95% during the two years to 31 March 1992. As a result the excess interest earnings were very large ($1,959,000) and were by far the dominant experience item.

We have now developed more realistic valuation interest rates by means of the procedure described in Section V. The adoption of these new interest rates was very significant, causing the surplus to rise by $4,727,000.

B. Mortality of Members

In the previous valuation we assumed the mortality of members to be the same as the male mortality rates of the 1980-82 Life Tables for Canada (published by Statistics Canada) projected ten years in accordance with Scale D of the Society of Actuaries.

During the two-year period ending 31 March 1992, the 17 deaths observed among the members were only 72% of the 23.7 deaths expected by the assumed table. As a result the plan recorded a significant experience gain of $431,000.

In light of recurring mortality gains in recent valuations, we deemed it necessary to study the actual mortality experience of members from 1972 onwards. We found only two-thirds as many deaths as expected by the 1990 mortality assumptions. However, the actual mortality was very close to that assumed for males in the 1989 valuation of the pension plan established under the Royal Canadian Mounted Police Superannuation Act (RCMPSA).

For this valuation we assumed that member mortality in the 1993 plan year would be virtually equal to that of RCMPSA males. As described in Section V we also adopted a set of mortality projection factors to allow for falling mortality rates in the future. Altogether, this new mortality basis for members caused the plan's surplus to increase by $1,057,000.

C. Mortality of Widows

In the previous valuation the mortality of widows was assumed to follow 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.

During the two-year period ending 31 March 1992, the 7 deaths observed among the widows were only 65% of the 10.7 deaths expected by the assumed table. As a result the plan recorded a loss of $199,000.

Based on an experience study from 1972 onwards, we made minor adjustments to the existing mortality standard. More importantly, we adopted a set of mortality projection factors to allow for falling mortality rates in the future. Altogether, this new mortality basis for widows decreased the plan's surplus by $556,000.

D. Proportion and Age of Widows

In the previous valuation we used individual data on the marital status of members and, where applicable, on the age differential between spouses. The individual data indicated that all 17 members who died since 31 March 1990 were married; in fact, there were only 14 new widows. This proportion-married experience caused a negligible loss for the plan.

After some investigation we concluded that the individual data on spouses and their ages was unreliable and would become more so with the passage of time. Consequently we decided to adopt the group approach used in the 1989 valuation of the pension plan established under the Royal Canadian Mounted Police Superannuation Act. The change of assumptions caused the plan's surplus to decline by $219,000.

E. Eligible Children

In the previous valuation we assumed that a small number of children and students would be eligible for annuities upon the future deaths of members. During the last two years, only 1 surviving child emerged from the 17 member deaths.

In view of the continued aging of the membership, we believe that very few, if any, eligible children will arise from future deaths of members. Furthermore those who do arise will tend to be older and therefore will receive annuity payments for a relatively short period of time. We concluded that it would be appropriate, commencing with this valuation, to assume no prospective eligible children.

IX. Recommended Disposition of Surplus

The $8,808,000 surplus shown in this valuation is quite large in comparison with liabilities of $12,749,000. However, it should be remembered that the new actuarial assumptions are realistic, meaning that we do not expect any significant amounts of surplus to arise from future experience. In other words the current surplus, together with interest thereon, is all that will be available for annual benefit increases during the remaining lifetime of the plan, estimated to be 48 years. If distributed uniformly until that time, the surplus should be sufficient to provide annual benefit increases that are 2.1% above inflation.

Surplus should be distributed as it is earned relative to the pricing basis (the actuarial basis upon which contributions were calculated), as long as the latter sufficiently provides for all future benefits. As it happens, the liabilities on the pricing basis are more than sufficient to provide for all future benefits with full maintenance of the purchasing power. On the pricing basis, we found that $2,002,000 of surplus should be considered as earned and available for allocation to provide benefit increases in 1993 and 1994.

We recommend that the allocated surplus be distributed in accordance with the methodology established in 1949, as revised in 1990. It requires surplus to be distributed among members and their survivors in materially the same proportion as the members are considered to have contributed to it. The 1990 revision added the proviso that the expected value of any new widow's pension should always be at least as much as the lump sum death benefit (based on the expected value of the pension to a hypothetical 75 year-old widow) otherwise payable upon the member's death.

Based on the foregoing, we recommend distributing $2,002,000 of the surplus which exists in the Royal Canadian Mounted Police (Dependants) Pension Fund as follows:

(a) benefits for actual widows and children be increased by 50% effective 1 April 1993 and a further 50% effective 1 April 1994, such increases to be in addition to but not dependent on the benefits authorized by T.B. 817185 and its predecessors, with the proviso that the increase be applicable not only to pensions and annuities in course of payment on the date of the Order authorizing the increases but also to prospective pensions and annuities, and

(b) benefits for prospective hypothetical widows be increased by 10% effective 1 April 1993 and a further 10% effective 1 April 1994, such increases to be in addition to but not dependent on the benefits authorized by T.B. 810868 and its predecessors, and

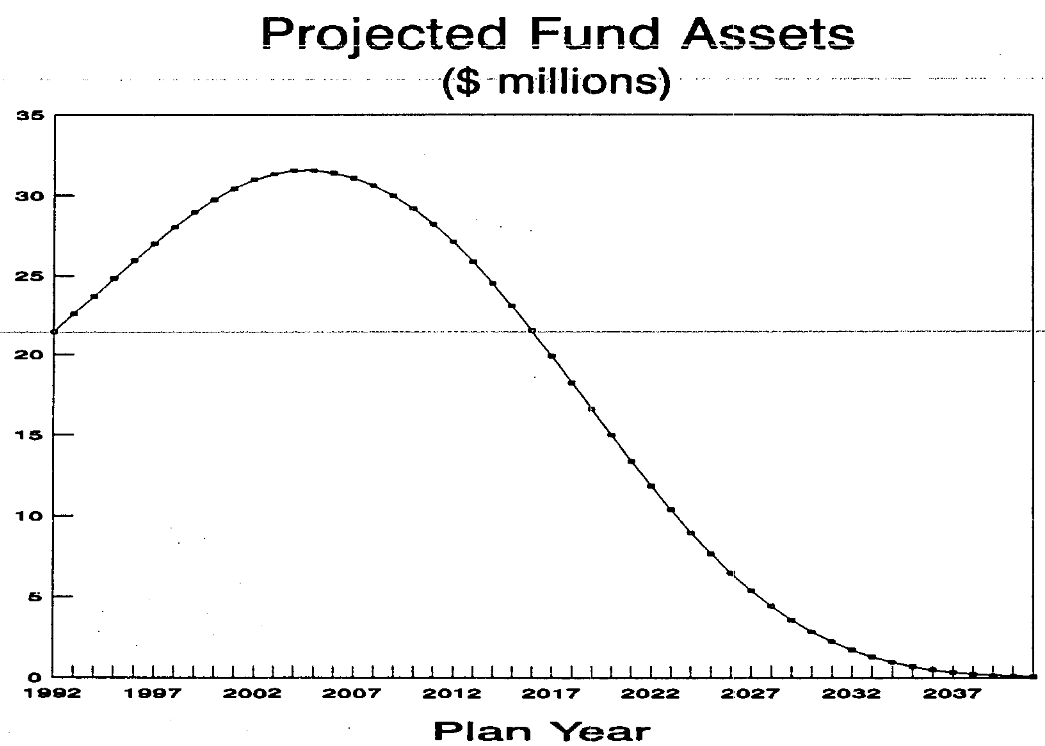
(c) for purposes only of calculating the residual amount payable on the death of a widow, a member's contributions be deemed to be his actual contributions increased by 460% if his death occurs during the 12 months beginning 1 April 1993, and by 510% if his death occurs during the 12 months beginning 1 April 1994.

It may be noted that for the widows and children described in (a) above, the recommended increases, taken together with the increases effected by the previous distributions of surplus, would provide a total increase of 460% at 1 April 1993 and 510% at 1 April 1994 in current and prospective benefits purchased by contributions made or deemed to have been made. Alternatively, if we wish to express these recommended benefit increases as percentages of the total accrued benefits (basic plus previously declared dividends) rather than as percentages of only the basic benefits, then the increase is 9.8% at 1 April 1993 and 8.9% at 1 April 1994. Similarly, for the hypothetical widows in (b) above, the total increase is 360% at 1 April 1993 and 370% at 1 April 1994; this is equivalent to effective increases of 2.2% annually.

The balance sheet in this report shows a surplus in the Fund as at 31 March 1992 of $8,808,000. Approval of our recommendation would reduce the surplus in the Fund to $6,806,000. We believe it appropriate that such remaining surplus be retained in the Fund for future distribution in accordance with the method used for the current distribution.

X. Fund Projections

Assuming that the actuarial assumptions of this valuation are realized and that surplus is distributed uniformly such that the purchasing power of the dependants rises by 2.1% annually, we projected the Fund balances as at 31 March of future years. The following graph presents the results clearly.



Under this scenario the Fund balance will reach its maximum of $31,600,000 in the year 2005. Thereafter it will decline until it is exhausted in approximately the year 2040.

This graph should be regarded only as a general indicator of the Fund's estimated progress. The actual Fund balances in the future will depend entirely on the actuarial experience and the surplus distribution policy, 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 and the Recommendations of the Canadian Institute of Actuaries.

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APPENDIX 1

History of Part IV

Prior to 1934, there was no legislative provision for benefits payable to dependants of constables. In that year, the Royal Canadian Mounted Police Act was amended by the addition of Part IV. The provisions of this Part enabled constables to purchase certain survivorship benefits for their dependants by payment of specified contributions. Constables on the Force on 1 October 1934 had the option of becoming contributors under Part IV by election; constables appointed to the Force after that date were required to become contributors as at the date of their appointment. Contributions equal to 5% of pay were required from all contributors, and supplementary contributions on a fixed scale according to age were permitted. All contributions were to be credited to an account in the Consolidated Revenue Fund called the Royal Canadian Mounted Police (Dependants) Pension Fund and all pensions, annuities and other benefits were to be charged against that account.

In 1948 the Act was amended extensively. Three new parts, namely, Parts V, VI and VII were added. For persons appointed to the Force after 1 March 1949 and for members of the Force on that date who elected to become contributors under Part V, the provisions of Part V replaced the pension arrangements formerly provided under Parts II, III and IV. However constables who were members of the Force on 1 March 1949 and who were not contributors under Part IV on that date retained their right of election to become subject to Part IV, provided that

- they had continuous service on the Force from 1 October 1934 or before, to the date of such election, and

- they did not elect at any time to become contributors under Part V.

The 1948 amendments also affected Part IV of the Act as respects financial implications; for the first time, the government agreed to assume responsibility for any deficit that might appear in the Fund.

In 1959 two new Acts, the Royal Canadian Mounted Police Superannuation Act and the Royal Canadian Mounted Police Pension Continuation Act, were passed to provide for all pension arrangements in respect of the Royal Canadian Mounted Police. The pensions formerly provided for widows and orphans under Part IV of the Royal Canadian Mounted Police Act are now provided for under Part IV of the Royal Canadian Mounted Police Pension Continuation Act.

In 1975 Part IV of the Royal Canadian Mounted Police Pension Continuation Act was amended in two respects. Prior to this amendment, benefits to children of a deceased contributor were payable until age 18 to a son and until age 21 to a daughter. As a result of the amendment, benefits also became payable until age 21 to sons, and became further payable between ages 21 and 25 to an unmarried son or daughter in full-time attendance at a school or university, having been in such attendance substantially without interruption since attaining age 21 or since the contributor died, whichever occurred later.

Also in 1975 subsection 55(3) of the Act, which had provided that interest would be added to the balance in the Fund from time to time at the rate of 4% per annum, was amended to provide that such interest would be calculated at such rate and in such manner as the Governor in Council by regulation prescribed.

In 1989 Part IV was amended to eliminate the requirement that a son or daughter in full-time attendance at a school or university be unmarried in order to receive survivor benefits. Also eliminated was the provision for actuarially reducing the pension of a widow who was more than 20 years younger than her husband at the date of his death.

APPENDIX 2

Summary of Part IV Provisions

The following summary of the plan provisions has been prepared solely for this report. In the event of any discrepancy between this summary and the legislation, the latter shall govern.

A. Contributions and Interest

1. Member Contributions

(i) Current Service - In order to purchase benefits based on their current service, members contributed 5% of pay together with supplementary amounts in accordance with the scale set out in present subsection 47(3) of the Act.

Current service contributions ceased on 31 March 1978 when the last Part IV member retired from active duty with the Force.

(ii) Past Service - An active Part IV member had the right to elect to make contributions, either in a lump sum or by equivalent* instalments, to purchase basic death benefits in respect of any period of his eligible past service, based on his rate of pay at date of election. In like manner, on promotion to or within the ranks of non-commissioned officers, a member had the right to elect to partially or fully upgrade the accrued basic death benefits on the basis of his rate of pay in this new rank.

Because all Part IV members have now retired from the Force, no new past service elections can be made. However, just over one-third of the Part IV members are still making instalment payments in respect of previous elections.

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 a surplus and therefore the government has never contributed to the Fund.

3. Interest Credits

In its role as custodian of the Fund, the government makes interest credits from time to time. The methodology for determining the amount of these credits is described in the first part of Section V.

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* 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 attributable directly to the scheduled contributions made by a member and are payable on his death if he has not withdrawn his contributions from the Fund. (In addition, dividends are payable on these basic death benefits, as described in the next subsection.)

1. Widows' Pensions

The surviving 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; in addition, a residual amount is payable if the widow dies before receiving payments at least equal to the member's contributions.

2. Eligible Children's Annuities

An annuity, not exceeding 7% of the member's final pay, is payable to each surviving child eligible in accordance with the provisions of the Act at that time. If there is no surviving widow or if the widow dies before the child's annuity ceases, the amount of the annuity is doubled.

3. 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 surviving widow 20 years older than the member at his death, but not exceeding 75 years of age.

4. Benefit Limitations

Under certain circumstances, the basic death benefits payable to a surviving widow are smaller than those normally available. This limitation can occur when a member marries after age 60; in that 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. A similar limitation applies to a member who marries before age 60 after termination of service and dies within five years, without having satisfied the Commissioner of his sound health.

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

C. Dividends on Basic Death Benefits

Subsection 57(1) of 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 the benefits provided under Part IV, or any of them, in such manner as may appear equitable and expedient. Until 31 March 1991, these benefit increases took the form of proportionate dividends applied to all basic death benefits (both accrued and prospective) except the residual amount payable on the early death of a widow. This policy changed on 1 April 1991 when the dividends in respect of actual widows (current and prospective) were increased but the dividends for lump sum benefits were frozen at 350%. 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 whose contributions have remained in the Fund can elect to withdraw them, without interest, at any time; however, his rights under Part IV and those of his dependants shall cease upon such election.

E. Discontinuance of Instalment Payments

A member who has elected to make a series of instalment payments in lieu of a lump sum contribution can at any time thereafter elect to discontinue those instalment payments.

Upon discontinuance, the actuarial present value* of the remaining instalment payments that would otherwise have been made is converted into the equivalent** amount of basic Part IV benefit for the member. The member's basic accrued benefit is then reduced by that equivalent amount.

* 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 1992

Age Last Birthday	Number	Accrued Benefits* Average $	Accrued Benefits* Total $
60-64	45	10,000	450,000
65-69	65	9,100	591,000
70-74	80	7,200	576,000
75-79	50	6,600	330,000
80-84	20	6,300	126,000
85-89	4	3,000	12,000
90-94	1	4,000	4,000
All ages	265	7,883	2,089,000

Average age last birthday: 71.1 years

* Amounts reflect the basic pension together with the 410% dividend effective from 1 April 1992 for actual widows. Only 19.6% of each accrued benefit is due to the basic pension, the remaining 80.4% being due to the dividend.

APPENDIX 4

Widows as at 31 March 1992

Age Last Birthday	Number	Annual Benefit Payments* Average $	Total $
50-54	1	4,000	4,000
55-59	3	5,000	15,000
60-64	15	8,600	129,000
65-69	39	5,900	230,000
70-74	33	7,000	231,000
75-79	40	4,600	184,000
80-84	24	4,800	115,000
85-89	10	3,800	38,000
90-94	2	2,000	4,000
95-99	1	3,000	3,000
All ages	168	5,673	953,000

Average age last birthday: 73.4 years

* Amounts reflect the basic pension together with the 410% dividend effective from 1 April 1992. Only 19.6% of each benefit payment is due to the basic pension, the remaining 80.4% being due to the dividend.

APPENDIX 5

Rates of Mortality for 1993 Plan Year

Age Last Birthday	Members	Widows
50	N/A	.0030
55	N/A	.0046
60	.0072	.0066
65	.0131	.0103
70	.0234	.0171
75	.0418	.0285
80	.0703	.0488
85	.1110	.0804
90	.1589	.1352
95	.2260	.2074
100	.3318	.3054
105	.5560	.5455
110	1.0000	1.0000

APPENDIX 6

Mortality Projection Factors

Age Last Birthday	Annual Percentage Reductions after 1993 Plan Year: Members	Widows
50	N/A	1.50
55	N/A	1.50
60	1.30	1.50
65	1.30	1.50
70	1.25	1.50
75	1.25	1.45
80	1.20	1.45
85	.90	1.05
90	.55	.70
95	.10	.30
100	-	-

APPENDIX 7

Proportion of Members Married at Death and Average Age of New Widow

Age Last Birthday at Death	Proportion of Members Married at Death	Average Age of New Widow
60	.97	57
65	.96	62
70	.95	66
75	.89	71
80	.75	75
85	.63	79
90	.53	83
95	.40	86
100	.29	88
105	.15	90
110	.06	90