PENSION PLAN

FOR THE

ROYAL CANADIAN MOUNTED POLICE

ACTUARIAL REPORT

(including Cost Certificate)

AS AT DECEMBER 31, 1989

Office of the Superintendent of Financial Institutions Canada
Bureau du surintendant des institutions financières Canada

Ottawa, Canada
K1A 0H2

June 20, 1991

The Honourable Gilles Loiselle, P.C., M.P.
President of the Treasury Board
Ottawa, Canada
K1A 0R5

Sir:

Pursuant to section 6 of the Public Pensions Reporting Act, I have the honour to transmit my valuation report on an actuarial review as at December 31, 1989 of the pension plan established under the Royal Canadian Mounted Police Superannuation Act. The report includes a cost certificate required in accordance with section 5 of the Public Pensions Reporting Act.

Subsection 9(1) of the Public Pensions Reporting Act requires a report filed with the Minister while Parliament is sitting to be laid before Parliament within thirty sitting days of its being filed. If Parliament is not then sitting, the Act requires the report to be laid before Parliament on any of the first thirty days thereafter that Parliament is sitting.

Respectfully submitted,

G.W. Poznanski
Chief Actuary

Canada

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PUBLIC PENSIONS REPORTING ACT

Report on the actuarial review as at December 31, 1989
of the pension plan established under the
Royal Canadian Mounted Police Superannuation Act

I. Introduction

Pursuant to paragraphs 3(1)(d) and 3(3)(a) of the Public Pensions Reporting Act (PPRA), we have made an actuarial review as at December 31, 1989 of the pension plan established under the Royal Canadian Mounted Police Superannuation Act (RCMPSA). The previous review was at December 31, 1985.

During the intervaluation period the only change to the terms of the plan occurred when Bill C-24 received Royal Assent on June 29, 1989. Bill C-24 repealed the provisions for suspending annuity entitlements of surviving spouses upon remarriage and, upon marriage, of surviving children between the ages of 18 and 25 while in full-time attendance at a school or university. It also provided for the reinstatement of previously suspended annuities on and with effect from June 29, 1989 with the proviso that the surviving spouse repay with interest any lump sum received previously upon suspension of annuity entitlement. In addition, Bill C-24 eliminated the annuity reduction formerly applicable to a surviving spouse more than 20 years younger than the deceased member; moreover, it provided that any previously reduced annuities be restored to their full amounts on and with effect from June 29, 1989. In Section IX of this report we discuss fully the financial impact of Bill C-24.

For purposes of this report, as required by subsection 3(2) of the PPRA, the plan is deemed to include the related benefits (inflation protection) payable under the Supplementary Retirement Benefits Act (SRBA) and the related assets of the Supplementary Retirement Benefits Account (SRB Account).

The cost certificate required by section 5 of the PPRA is included as Section II of this report.

II. Cost Certificate

We calculated the estimated normal cost of the plan by applying the actuarial methods and assumptions described in Sections III and IV respectively to the data summarized in Appendices 13A and 13B. (The normal cost for a year is the annual contribution required to provide all future benefits accruing in respect of that year of service.)

We express the normal cost in terms of the pensionable payroll which is the sum of all salaries paid in the year to plan members with less than 35 years of pensionable service. We estimate the normal costs to be the following percentages of pensionable payroll for the three years following the review date:

Year	Payable by Contributors* (%)	Effective Cost to Government (%)	Total Normal Cost (%)
1990	6.2	12.4	18.6
1991	6.1	13.1	19.2
1992	5.9	14.6	20.5

The corresponding actuarial liability (the present value of future benefits assumed to have accrued in respect of pensionable service up to the date of this review) is determined by applying the same actuarial methods and assumptions to the data summarized in Appendices 13A and 13B (active contributors) combined with the data summarized in Appendices 14B, 14C and 14D (pensioners). We estimate the actuarial liability to be $3,729.6 million as at December 31, 1989. The assets of this pension plan of $3,847.7 million as of the same date exceed the actuarial liability so that the plan has an actuarial surplus of $118.1 million as at December 31, 1989.

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* Active members make required contributions of 6.5 per cent of salary (less a credit equal to their Canada Pension Plan contributions) to the Royal Canadian Mounted Police Superannuation Account and 1 per cent of salary to the SRB Account until completion of 35 years of pensionable service. Thereafter, they contribute only 1 per cent of salary to the SRB Account.

A. Current and Ultimate Costs

We consider the estimated normal costs and actuarial surplus to be realistic because they are based on dynamic economic assumptions which anticipate that the high real rates of interest (the excess of nominal interest rates over rates of increase in the Consumer Price Index), available at the date of valuation, will prevail for some time before they return to more traditional levels. (The term "dynamic economic assumptions" refers to the fact that the economic assumptions for interest, cost of living and general salary increases vary by calendar year; they do not remain static into the future.)

Since the 1990 normal cost of 18.6% of pensionable payroll is based on assumptions that reflect the current high real rates of interest, it should not be considered an indicator of the long-term cost of the plan. In fact, if the economic assumptions that are reached ultimately (5.8% interest rates, 4.5% general salary increases and 3.3% price increases) had been assumed to apply, beginning at the date of the valuation, then the 1990 normal cost would have been 32.3% of pensionable payroll. The table on page 2 shows gradually increasing normal costs in 1991 and 1992, which reflect mainly a partial transition to those ultimate economic assumptions.

B. Variation of the Interest Assumption

The early recurrence of more traditional real rates of interest would raise the normal costs. The margin (described in Section IV under Economic Assumptions) in the assumed interest rates provides some protection against this contingency. If we removed the margin, the 1990 normal cost would be reduced by 17.2% and the actuarial liability by 14.3%.

The ultimate normal cost of 32.3% of pensionable payroll assumes a long-term real interest rate of approximately 2.5% which may be regarded as reasonably consistent with the return on long-term government bonds. If the real interest rate were more in line with the return on private sector pension funds, it would be reasonable to use an assumed interest rate one percentage point higher. In this case the normal cost in 1990 on these "ultimate assumptions" would be 24.6% of pensionable payroll rather than 32.3%.

C. Actual Financing of the Plan

The government contributions shown in this cost certificate are of a theoretical nature. In any given year, the government's regular and special contributions to the plan can be quite different from the contributions indicated by the cost certificate.

In general, the government determines its actual contributions to the Royal Canadian Mounted Police Superannuation Account (RCMPS Account) and SRB Account by doubling the member contributions to the RCMPS Account and matching the 1 per cent contributions to the SRB Account. For example, in 1990 the members will contribute 5.2% of pensionable payroll to the RCMPS Account and 1% to the SRB Account, for a total of 6.2% of pensionable payroll. The government will therefore contribute approximately 11.4% of pensionable payroll. Alternatively, we can express the government contributions as approximately 184% of the member contributions. In addition to these "formula" contributions, the government may make special contributions to the RCMPS Account whenever unanticipated general salary increases occur. (See "Special Payments" on page 29 for more details.)

In addition to the funding contributions already described, the pension plan also benefits from the fact that supplementary retirement benefits (the indexing component) payable in excess of contributions by and in respect of members (including interest) made to the SRB Account are charged directly to the Consolidated Revenue Fund. (See "Payment of Benefits", page 30 for more detail). We estimate that the payments out of the Consolidated Revenue Fund in 1990 will be approximately equivalent to 1.3% of pensionable payroll.

III. Actuarial Methods

A. Actuarial Method to Value Liabilities

We used the unit credit cost method to value liabilities in respect of plan benefits for active contributors. This is the usual actuarial method employed in valuing pension plans such as the plan established pursuant to the RCMPSA. Under this method, the contributions in any year (the normal cost) are sufficient to fund projected benefits in respect of service in that year; the corresponding actuarial liability is the actuarial present value of projected benefits accrued to the valuation date.

The unit credit cost method was applied in this valuation in accordance with the recommendations of the Canadian Institute of Chartered Accountants for accounting for pension obligations in government financial statements, contained in "Public Accounting Statement 5", dated November 1988.

B. Actuarial Method to Value Assets

The assets represent contributions to the plan, net of benefit payments, all accumulated with interest. They are shown at their "book value"; i.e., they are not adjusted to reflect changes in the interest environment. However, by using dynamic interest assumptions we effectively reflect the earning power of these assets.

IV. Actuarial Assumptions

This section describes the actuarial assumptions used in the valuation. The section is divided into three main components: economic assumptions; demographic assumptions; and other assumptions. Based on our analysis of recent and expected experience, we have significantly modified most assumptions used in the previous valuation. The description of the actuarial analysis supporting the major modifications is in Section IX.

A. Economic Assumptions

The basic economic assumptions necessary for the valuation of this pension plan consist of (i) interest rates expected to be obtained on new notional investments in future years, (ii) increases in the Consumer Price Index (CPI), and (iii) general (as distinguished from promotional) salary increases for members of the plan.

From these basic economic assumptions, we developed (i) future yields of the fund (i.e., the projected fund yields assumed to be realized in each future year on the notional investments in the fund in that year), (ii) the "dynamic interest assumption" used in the valuation, and (iii) the rate of indexing of benefits.

The projected fund yield for years after 1991 is derived from new money rates and the yields on existing notional investments on the assumption that the assets held on December 31, 1991 in the Public Service Superannuation Account, the Canadian Forces Superannuation Account, the RCMPS Account and the corresponding portions of the SRB Account are increased to equal liabilities of the three corresponding pension plans on that date and that no further contributions would be received after 1991. The "dynamic interest assumption" for a particular year is obtained by reducing the corresponding fund yield by one percentage point, but not below 5.8%.

From the CPI we developed pension indexing factors which apply on January 1 of each future year.

The third basic assumption (general salary increases) is incorporated directly in the valuation.

To develop the basic economic assumptions (interest on new investments in future years, CPI and general salary increases), we consulted economic forecasters and researchers, reviewed the projections in the February 26, 1991 federal budget and took into account the late May 1991 Government announcement that there will be no general salary increases during the first year of a three-year wage restraint period. (The general salary increases during the succeeding two years may not exceed 3% per annum.)

The general conclusion we reached as a result of our review of long-term economic forecasts was that (i) real rates on new (long-term) investments are likely to remain higher than their traditional levels for a relatively long time into the future, (ii) the level of inflation will trend downwards, and (iii) the real general salary increases will continue to be low (or even negative) for some time into the future before they start climbing to reach, ultimately, a level commensurate with the expected increases in productivity which are currently expected to reach, eventually, a level of about 1.2% per annum.

If we adopted for this valuation economic assumptions derived from this "current view of the future", their effect on the valuation results would be very significant as compared to the results that would have been obtained on the basis of economic assumptions adopted for the previous valuation which was done as at December 31, 1985. Because future economic conditions cannot be predicted with a high degree of probability, and because it is inadvisable to make large changes in assumptions from one actuarial review to the next, we decided, for this valuation, to modify the economic assumptions used in the previous actuarial review only part way to those that, on the basis of our research, would reflect the current view of expected future economic levels and relationships.

If the evidence at the next actuarial review, scheduled to be as at December 31, 1992, confirms that the currently anticipated future economic relationships are materializing and are expected to continue into the future, a further adjustment to the economic assumptions may well be made at that time. Should the economic trends at the time of the next review suggest a reversal in the currently anticipated trends, this can also be reflected in the choice of assumptions at that time.

For this valuation, we have adopted the following economic assumptions.

	Basic Assumptions			Derived Assumptions		
Year	New Money Interest (%)	RCMP General Salary Increases* (%)	CPI Increases (%)	Projected Fund Yield** (%)	Valuation Interest (%)	Pension Indexing (%)
1990	10.9***	5.1***	4.8***	11.0	10.0	4.7***
1991	10.1	3.5	5.7	11.0	10.0	4.8***
1992	9.8	0.0	3.4	10.9	9.9	5.5
1993	9.3	3.0	3.1	10.9	9.9	4.0
1994	8.8	3.0	2.8	10.8	9.8	3.2
1995	8.5	3.3	2.9	10.7	9.7	2.9
1996	8.3	3.5	3.0	10.5	9.5	2.9
1997	7.9	3.7	3.1	10.4	9.4	3.0
1998	7.4	3.9	3.2	10.2	9.2	3.1
1999	6.9	4.1	3.3	10.0	9.0	3.2
2000	6.3	4.3	3.3	9.7	8.7	3.3
2001	5.8	4.5	3.3	9.4	8.4	3.3
2002	5.8	4.5	3.3	9.0	8.0	3.3
2003	5.8	4.5	3.3	8.6	7.6	3.3
2004	5.8	4.5	3.3	8.4	7.4	3.3
2005	5.8	4.5	3.3	8.1	7.1	3.3
2006	5.8	4.5	3.3	7.9	6.9	3.3
2007	5.8	4.5	3.3	7.7	6.7	3.3
2008	5.8	4.5	3.3	7.5	6.5	3.3
2009	5.8	4.5	3.3	7.3	6.3	3.3
2010	5.8	4.5	3.3	7.1	6.1	3.3
2011	5.8	4.5	3.3	6.9	5.9	3.3
2012	5.8	4.5	3.3	6.5	5.8	3.3
Ultimate	5.8	4.5	3.3	5.8****	5.8	3.3

* These general salary increases are assumed to apply as well to the Year's Maximum Pensionable Earnings under the Canada Pension Plan.

** Projected fund yields for the combined Public Service, Canadian Forces and RCMP Superannuation Accounts, and the corresponding portions of the SRB Account.

*** These figures represent actual experience.

**** Projected fund yield declines from 6.5% in 2012 to 5.8% by 2019.

B. Demographic Assumptions

1. New Entrants

For purposes of estimating the normal costs shown in the cost certificate (Section II), we made assumptions as to the number, sex and age of future new entrants. We assumed that the number and sex of the new entrants will be such that the population of active male contributors rises by 1.3% annually whereas that of females rises by 11.6% annually. For each sex, the age distribution of the future new entrants was based on that of the actual new entrants in the 1986-89 period.

2. Active Contributors

Appendix 3 shows the assumed promotional salary increases applicable to an active contributor. Appendices 4 to 7 show, respectively, the assumed rates of nonvested termination, pensionable disability, pensionable retirement and mortality. (A nonvested termination is a termination with entitlement to a return of contributions with interest rather than to an annuity or an allowance; a pensionable disability is a disability causing the member to become a "disability pensioner" entitled to an immediate disability pension; and a pensionable retirement is a retirement on account of age or service, or a combination thereof, causing the member to become a "retirement pensioner" entitled to a retirement pension, immediate or deferred.) All the assumptions in Appendices 3 to 7 are sex-distinct, in contrast to the unisex approach in the previous valuation. In view of the increasing proportion of female members, the use of sex-distinct assumptions will result in more accurate financial projections for this pension plan.

The promotional salary increases are now service-based rather than age-based; moreover, we express them in terms of annual percentage increases rather than as a cumulative scale. Because of the switch to service-based promotional salary increases, it is difficult to compare the overall level of assumed increases to that of the previous valuation; nevertheless, we can observe that for the current valuation the assumed increases for older, long-service males are significantly higher than the assumptions used in the previous valuation.

The new service-based rates of nonvested termination are approximately 10% higher in aggregate than the age-based rates used in the previous valuation. More importantly, from a financial viewpoint, the adoption of service-based rates has significantly decreased the expected nonvested terminations among the older, long-service members.

The male rates of pensionable disability are comparable to the unisex rates of the 1985 valuation; however, the female rates are significantly higher. The new rates are applied only to members with at least 10 years of pensionable service whereas the previous rates were applied to all members regardless of length of service.

The new male rates of pensionable retirement are noticeably higher than the previously-assumed unisex rates; the new female rates are somewhat lower. The rates of pensionable retirement in the previous valuation were applicable only to members with at least 20 years of pensionable service; we have retained this restriction in the current valuation.

The new male rates of mortality for 1990, applicable to contributors, are somewhat higher than the previous unisex rates; the new female rates are much lower. Beginning with this valuation, the mortality assumption for active contributors takes into account the expected continued future reductions in the rates of mortality at the various ages. Mortality rates for years subsequent to 1990 are obtained by applying to the rates for that year (shown in Appendix 7) the annual projection factors shown in Appendix 8.

3. Former Contributors

With respect to retired contributors in receipt of an annuity, the only decrement is death. As in the previous valuation, the mortality assumptions take into account the expected continued future reductions in the rates of mortality at the various ages.

The male mortality rates shown in Appendix 7, applicable to former contributors, produce approximately 11% fewer expected deaths in 1990 than the 1986 base table (used in the previous valuation) projected to that year would have produced. The female mortality rates in Appendix 7 are simply the 1986 base table projected to 1990. On the basis of a review of recent experience we decided to continue to assume that contributors (males and females) retiring on account of disability will experience the same mortality as those who retire for reasons other than disability.

We obtain the mortality rates for years subsequent to 1990 by applying the annual projection factors shown in Appendix 8 to the 1990 mortality rates in Appendix 7. For males aged 55 to 91 inclusive and for females aged 56 to 85 inclusive, these projection factors are somewhat higher than those used in the previous valuation.

4. Surviving Spouses

To estimate the value of surviving spouse pensions that will become payable in the future as the result of deaths among active and retired contributors, we must make an assumption as to what proportion of contributors will leave an eligible spouse upon death. The "proportion married" shown in Appendix 9 for males is much higher at ages 65 and above than was assumed in the unisex scale of the previous valuation, whereas the new female assumption is much lower than the unisex assumption was at all ages.

Another assumption in respect of surviving spouses concerns the average age of the surviving spouse at the date of death of the contributor. The "average age of widow" of a retired contributor, also shown in Appendix 9, is significantly higher at the older ages than was assumed in the previous valuation; the "average age of widower" is moderately higher at some of the older ages.

We continued to assume that surviving spouses will be subject to the same underlying mortality as former contributors of the same age and sex.

5. Surviving Children and Eligible Students

Several assumptions must be made to estimate the value of pensions to surviving children and eligible students that will become payable in the future as the result of deaths among active and retired contributors.

The primary assumption concerns the number of children and eligible students surviving a contributor or former contributor. The expected number of such survivors shown in Appendix 10 is much higher for male contributors than was assumed in the previous valuation, but is significantly lower in the case of female contributors.

One secondary assumption concerns the average age of the surviving children and eligible students when a contributor dies. The average ages shown in Appendix 10 are generally much higher than those used in the previous valuation.

Another secondary assumption concerns the proportion of students remaining eligible for annuities at the end of each year of age. The proportion remaining eligible, as shown in Appendix 10, is generally much higher than was assumed in the previous valuation.

We ignored the effect of mortality in determining the value of pensions payable to children and eligible students because the mortality at the relevant ages is negligible.

C. Other Assumptions

1. Provisions of the Plan

Although the broad essentials of the plan are identical for all contributors, there are some important variations for the three types of contributors (officers, "other ranks" and civilians) that are recognized by the plan.

The plan's provisions respecting officers are identical to those for the other ranks except that officers must meet longer service requirements to qualify for unreduced immediate pension benefits.

The plan's provisions respecting civilians differ from those for the other ranks in several ways. On the one hand, civilians have the right to elect a pension benefit on termination of employment after only 5 years of pensionable service whereas other ranks require 10 years of service in the RCMP. On the other hand, to qualify for unreduced immediate pension benefits, civilians must satisfy conditions similar to those applicable to officers.

Given that the bulk of the active contributors at December 31, 1989 were classified as other ranks (see Section VI for a detailed analysis by type), we have retained the established practice of applying the plan provisions for the other ranks to the entire body of active contributors. We believe that on balance this approximation overstates the plan's normal costs and accrued liabilities to a very minor degree.

2. Election of Options

Since we value the plan on the basis of the provisions applicable to the "other ranks", we assume that every active contributor who voluntarily retires with 10 to 20 years of service in the Force can elect either a return of contributions or a deferred annuity. The experience has been that individuals strongly prefer the return of contributions (there were only 22 deferred annuitants at December 31, 1989). Accordingly, we have made the assumption that 100% of the voluntary retirements elect a return of contributions and thereby become nonvested terminations.

3. Administration Expenses

No provision was made in the liabilities or in the normal cost with respect to the cost of administering the plan.

V. Reconciliation of Membership

The following table, derived from the basic data, shows pertinent statistics concerning active contributors, retired contributors (includes both retirement pensioners and disability pensioners) and survivors during the years 1986 to 1989.

	Active Contributors	Retirement Pensioners	Disability Pensioners	Surviving Spouses	Surviving Children and Students
At December 31, 1985	16,934	2,581	136	332	156
Data corrections	(150)	6	(4)	18	
New entrants	3,896	-	-	-	
Pensionable retirements	(1,278)	1,278	-	-	
Pensionable disabilities	(72)	-	72	-	
Nonvested terminations	(933)	-	-	-	
Deaths	(72)	(86)	(5)	(24)	
New survivors	-	-	-	147	
Reinstatements (Bill C-24)	-	-	-	44	
Transfers to other plans	-	(2)	-	-	
At December 31, 1989	18,325	3,777	199	517	271*
Males as % of total	88%	97%	87%	1%	50%

Appendices 11 and 12 show reconciliations of the active contributors and retired contributors by sex.

* The available data do not permit us to reconcile the change in the eligible children and student population between December 31, 1985 and December 31, 1989. We have been informed that a number of corrections to the data have been made and we believe that the data for children and students receiving allowances as of the current valuation date are accurate.

VI. Membership Data and Analysis

A. Active Contributors

There were 18,325 active contributors at the end of 1989, of whom 88.2% were males. The average age of an active contributor was 37.3 years and the average length of pensionable service was 14.0 years. The average annual salary was $44,775 and the aggregate annual payroll was $820.5 million. Appendices 13A and 13B show detailed information on the age, pensionable service and average salary of males and females, respectively.

There are three types of active contributors: officers, other ranks, and civilians. "Other ranks" comprise 85.7% of all active contributors, followed by civilians (11.1%) and officers (3.2%).

B. Retired Contributors and Survivors

There were 4,764 claimants receiving periodic payments from the plan at the end of 1989, of whom 83.7% were males. The two types of claimants were retired contributors (3,976 in number) and survivors (788 in number). At the end of 1989, the plan was paying benefits to the claimants at a rate of $88.7 million per annum.

Appendix 14A shows a summary of all benefits in course of payment, together with breakdowns by sex, basis of entitlement, and source of payment. Appendices 14B, 14C and 14D show detailed information on the benefits in course of payment to retired contributors (male and female) and survivors.

In determining the yearly amounts of pension shown in Appendices 14A, 14B and 14C, we took into account the January 1, 1990 indexation increase pursuant to the SRBA. Moreover, the figures in Appendices 14A, 14B and 14C reflect all deferred* benefits (even though such benefits were not yet in course of payment) and recognize the benefit reductions due to CPP offsets applied to those at least age 65 and to some of those in receipt of disability pensions.

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* The most common type of deferred benefit is indexation pursuant to the SRBA; actual indexation payments begin only when the sum of the age (must be at least 55 years) and the service is at least 85 years, but no later than age 60 in any event. In addition, there are 22 former contributors whose pension benefits under the RCMPSA are deferred to age 60.

VII. Valuation Balance Sheet

The results of the valuation as at December 31, 1989, based on the actuarial methods and assumptions described in Sections III and IV, respectively, are summarized below.

		($ millions)
Assets		
Balance of Accounts		
RCMPSA	3,444.8	
SRBA	272.1	
		3,716.9
Outstanding items*		119.2
Actuarial present value of future contributions and Government credits in respect of elected prior service		11.6
Total assets		3,847.7
Liabilities and Surplus		
Actuarial present value of prospective benefits to and in respect of active members of the Force		2,500.9
Actuarial present value of benefits to persons entitled to a periodic income		
Retirement pensioners	1,131.9	
Disability pensioners	42.4	
Surviving spouses	52.6	
Surviving children and students	1.8	
		1,228.7
Total actuarial liabilities		3,729.6
Surplus		118.1
Total liabilities and surplus		3,847.7

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* The two major items that accrued in the last quarter of 1989 but were not credited until 1990 were interest credits and adjustments ($91.0 million) and government contributions ($28.4 million). In addition, there were minor items, including outstanding payments from the fund, creating a negative asset of $0.2 million.

VIII. Development of Surplus and Normal Cost

The previous valuation report showed a surplus of $163.2 million which has now decreased by $45.1 million to $118.1 million.

The previous report showed a 1986 normal cost of 16.2% of pensionable payroll, rising steadily thereafter almost entirely as a result of the gradual transition from dynamic to ultimate economic assumptions. The anticipated normal cost for 1990 (not shown in that report) was 18.5% of pensionable payroll. The actual 1990 normal cost of 18.6% of pensionable payroll (see Section II of this report) is slightly greater than the anticipated 1990 normal cost.

The various factors reconciling the surplus and normal cost in this valuation with those of the previous valuation are shown in the following table.

	Surplus ($ millions)		Normal Cost (% of pensionable payroll)	
At December 31, 1985		163.2		16.2
Anticipated increase to 1990*		83.2		2.3
Indexation payments made directly from Consolidated Revenue Fund		38.9		-
Contribution rate deficiency		(6.1)		-
Data corrections		(21.4)		-
Effects of Bill C-24				
Reinstated spouses	(4.3)		-	
Remarriage decrement removed	(6.1)		-	
Subtotal		(10.4)		-
Experience gains and losses				
Return on notional investments	34.5		-	
Pensionable retirements	(30.0)		-	
YMPE increases	(22.2)		0.2	
Nonvested terminations	(17.7)		-	
General salary increases	(14.1)		-	
Minor items (net)	(16.9)		(0.1)	
Subtotal		(66.4)		0.1
Change in actuarial assumptions				
Economic assumptions	334.9		(2.5)	
Proportion of eligible spouses	(140.0)		0.6	
Nonvested terminations	(92.6)		0.6	
Pensioner and survivor mortality	(51.7)		0.3	
Average age of new widow(er)s	44.4		(0.2)	
Pensionable retirement	(40.1)		0.2	
Promotional salary scale	(18.0)		0.1	
Minor items (net)	(1.2)		-	
Subtotal		35.7		(0.9)
Refinements of valuation program		(50.1)		0.6
Miscellaneous		(48.5)		0.3
At December 31, 1989		118.1		18.6

* Anticipated increase in surplus is due to interest; anticipated increase in normal cost is almost entirely due to a partial transition to ultimate economic assumptions.

IX. Actuarial Analysis

The preceding section showed the actuarial gains and losses experienced by the plan during the three-year period ending December 31, 1989. It also showed the financial effect of the revisions made to the actuarial assumptions. This section examines the more significant items in some detail.

A. Impact of Bill C-24

Effective June 29, 1989, Bill C-24 removed the clause under which pensions to surviving spouses were suspended on remarriage as well as a similar clause with respect to marriage of surviving eligible students. As a direct result, two actuarial assumptions made in the previous valuation were modified. First, the spouse remarriage rates were eliminated and, second, the proportion of students remaining eligible for annuities at the end of each year of age was raised. As a result, the surplus decreased by $6.1 million and the normal cost rose slightly (by 0.03% of pensionable payroll).

In addition, Bill C-24 provided that the eligibility of surviving spouses who had remarried prior to the passage of Bill C-24 should be restored. Although the reinstated spouses were not entitled to compensation in respect of omitted past payments, the reinstatements still decreased surplus by $4.3 million.

All of the costs quoted in this section were calculated as at December 31, 1989 and are not materially different from the costs that would have been calculated as at the June 29, 1989 effective date of Bill C-24.

B. New Economic Assumptions

We reviewed carefully the economic assumptions made in the previous valuation for the post-1989 period and changed them in light of informed forecasts available in early 1991 and the Government's announcement in May 1991 that there will be no general salary increases during the first year of a three-year wage restraint period. (The general salary increases during the succeeding two years may not exceed 3% per annum.)

For the years 1990 to 2000, all the economic assumptions made in the previous valuation were modified to some degree. For 2001 and subsequent years (the "ultimate" period), the real rate of interest of approximately 2.5% used in the previous report was retained. However, the real annual general salary increases of 1.5% assumed previously were reduced to 1.2% for this valuation.

The nominal annual rates adopted in this report for the ultimate period are as follows: new money rate of interest at 5.8%, general salary increases at 4.5% and price increases at 3.3%. These nominal rates produce approximately the real rates referred to in the preceding paragraph.

The adoption of new economic assumptions was by far the most important of the many changes in actuarial assumptions, causing the surplus to rise by $334.9 million and the normal cost to fall by 2.5% of pensionable payroll.

C. Proportion of Eligible Spouses

In the previous valuation, the assumption as to the proportion of contributors leaving eligible spouses upon death made no distinction between male and female contributors because there were relatively few female contributors.

Based on the assumption in the previous valuation, the 163 deaths recorded for active and retired contributors during the 1986-89 period should have yielded 134 surviving spouses. In fact, there were 147 surviving spouses; consequently, the surplus decreased by a modest amount ($1.0 million). The surplus decrease was entirely attributable to the larger than expected number of surviving spouses arising from deaths among the relatively few former contributors at ages 65 and over.

Given that the existing assumption was inadequate in relation to recent experience and that the proportion of female contributors is increasing rapidly, we developed a new assumption varying by sex. It was based in equal measure on the actual experience of the plan and on the corresponding assumption in two actuarial valuations published recently, namely, the Public Service Superannuation Act as at the end of 1986 and the Judges Act as at the end of 1988. Adopting the new assumption decreased the surplus by $140.0 million and raised the normal cost by 0.6% of pensionable payroll.

If we did not adopt the new assumption with respect to the proportion of eligible spouses, it is highly likely that the plan would suffer rapidly increasing losses in coming years as its membership matured and more former contributors reached the older ages at which the former assumption was quite inadequate.

D. Nonvested Terminations

In the previous valuation the rates of decrement for "return of contributions" were identical for male and female active contributors. Furthermore, they were applied solely on the basis of age, without reference to service.

The actual nonvested termination experience of the plan in the four years following the last valuation clearly demonstrates the anomalies that can arise when the decrement is not service-based. During that period there were significantly more nonvested terminations than expected (928 versus 840) but nevertheless there was a substantial experience loss of $17.7 million. This anomaly is entirely due to the erroneous anticipation of large gains on nonvested terminations among long-service contributors who in fact are already vested.

To put our valuation on a firmer footing, we decided, first, to convert the nonvested termination decrement from an age basis to a service basis and, second, to establish separate rates for males and females. With these goals in mind, we developed a new assumption from the crude 1986-89 experience modified only slightly for purposes of smoothness. The change of assumption had a major impact on both surplus ($92.6 million decrease) and normal cost (rise of 0.6% of pensionable payroll).

E. Mortality of Pensioners and Surviving Spouses

In the previous valuation, the mortality of pensioners (including those arising from disability) and surviving spouses was assumed to follow the 1983 GAM Table* projected in accordance with the scale shown in Appendix 5 of the report on that valuation.

During the four-year period since the last valuation, we observed an actual level of male mortality of only 82% of expected (91 deaths versus 111 expected) whereas, among the females, the 24 actual deaths were exactly as expected. Altogether, there was a modest experience loss of $3.2 million.

We deemed it necessary to develop new rates of mortality for the base year 1990 only for male pensioners and survivors. To develop the new assumption, we gave approximately equal credibility to the old assumption and to the 1986-89 experience. We also deemed it necessary to generally raise the mortality projection factors for pensioners and surviving spouses of both sexes. After making these changes, we found that surplus decreased by $51.7 million and that the normal cost rose by 0.3% of pensionable payroll.

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* The 1983 GAM Table was developed by the Society of Actuaries from group annuity mortality experience and may be applied, where appropriate, to the valuation of pension plans.

F. Average Age of New Widow(er)s

The 147 new surviving spouses (all widows except for one widower) during the 1986-89 period were one year older than expected, being on average only 2.7 years younger than their deceased spouses instead of 3.7 years younger. As a result, the plan recorded a very minor actuarial gain (estimated at $0.3 million).

For this valuation we raised the expected age of new widows arising from males dying at ages 50 and over. From ages 50 to 82, we determined the age increase (generally just one year) by giving equal credibility to our 1986-89 experience and to the previous assumption. For ages 83 and over, we adopted the assumption developed for the 1988 valuation of the pension plan established under the Judges Act. The expected ages of the new widows under this assumption are considerably higher than under the previous assumption. The expected age of new widowers was raised by as much as two years at the higher ages by adopting the relevant assumption from the 1988 valuation of the Judges plan. The new assumption increases the plan's surplus by $44.4 million and decreases the normal cost by 0.2% of pensionable payroll.

If we did not adopt the new assumption, the plan would have experienced increasing gains in future years as its membership matured and many more former contributors died at the older ages where the previous assumption noticeably overstated the survivor liability. In adopting the new assumption we are able to better anticipate the expected future experience.

G. Pensionable Retirements

In the previous valuation, the rates of pensionable retirement were identical for males and females. The published rates gave the appearance of being entirely age-based but, in fact, there was also a requirement that at least 20 years of pensionable service had to be completed.

The actual pensionable retirement experience up to age 50 was reasonably close to expected during the four years since the last valuation. However, at the higher ages the number of pensionable retirements was 84% more than expected (596 versus 324). Consequently, the plan suffered a significant experience loss of some $30 million.

We developed rates of pensionable retirement for males, giving approximately equal credibility to the previous unisex assumption and the graduated 1986-89 male experience. Based on rather sparse experience, we somewhat arbitrarily set female rates at 60% of male rates. Introducing this new assumption for male and female pensionable retirement rates caused the surplus to decrease by $40.1 million and the normal cost to increase by 0.2% of pensionable payroll.

H. Promotional Salary Scale

In the previous valuation, the promotional increases were identical for males and females. Moreover, they were entirely age-based even though these increases are usually much more a function of service than of age.

In aggregate, the 1986-89 promotional salary increase experience for the plan as a whole was reasonably close to expected, resulting in a loss of only $3.1 million. However, there were moderate gains at virtually all ages up to 45 but losses at the higher ages.

Even though the assumption in the previous valuation gave reasonable results in total, we decided to convert from an age basis to a service basis in order to correspond more closely with reality. In addition, we found that the experience differed sufficiently by sex to warrant the introduction of separate promotional salary increases for males and females. We developed the new service-based assumption from the 1986-89 experience, smoothed as necessary. The change of assumption decreased the surplus by $18.0 million and increased the normal cost by 0.1% of pensionable payroll.

X. Acknowledgements

The Compensation Branch of the Royal Canadian Mounted Police provided tapes showing basic data on active contributors, retired contributors and survivors.

The Compensation Branch answered all questions arising in respect of the data on active contributors while the Royal Canadian Mounted Police District Services Office of Supply and Services Canada did the same in respect of retired contributors and survivors.

We wish to acknowledge the co-operation and able assistance received from both the Compensation Branch and the District Services Office.

XI. Actuarial Opinion

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

(a) the data on which this report is based are sufficient and reliable,

(b) the assumptions that have been used are adequate and appropriate, and

(c) the methods that have been 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.

Respectfully submitted,

G.W. Poznanski, F.S.A., F.C.I.A.
Chief Actuary

Ottawa, Canada
June 20, 1991

APPENDIX 1

Estimates Relating to the Existing Financing Provisions of the Royal Canadian Mounted Police Superannuation Act

The existing financing provisions of the RCMPSA contemplate the recognition of actuarial liabilities relating to basic RCMPSA benefits, but not of those relating to indexing pursuant to the SRBA. (The PPRA requires the determination of actuarial liabilities including both the basic RCMPSA benefits and those relating to indexing pursuant to the SRBA. The information in the main body of the report conforms to the requirements of the PPRA).

The RCMPSA specifies requirements for the liquidation of any unfunded actuarial liability and for special credits to the RCMPS Account relating to general salary increases in excess of the rates assumed in the preceding actuarial report.

On the basis of the assumptions described in Section IV of this report, but eliminating the provision for indexing, it was estimated that as at December 31, 1989, the assets relating to the RCMPSA (amounting to $3,574.8 million) exceeded the actuarial liabilities by $1,246.0 million.

With regard to general salary increases, we estimated, on the basis of the same assumptions, that general salary increases in excess of the assumed rate for a year would generate additional liabilities that would require a special credit to the RCMPS Account equal to 1.62 times the increase in the effective payroll resulting from such excess increase, to the extent that there is insufficient surplus to absorb such additional liabilities.

APPENDIX 2

Summary of provisions of the pension plan established under the Royal Canadian Mounted Police Superannuation Act and the relevant provisions of the Supplementary Retirement Benefits Act

In this Appendix, unless the text specifies otherwise, the term "contributor" refers to an individual required to contribute to the SRB Account. In particular, it includes an individual who has 35 or more years of pensionable service and therefore is no longer required to contribute to the RCMPS Account.

A. Coverage

Persons covered by the RCMPSA comprise:

(a) all members of the Royal Canadian Mounted Police (the Force),

(b) former members of the Force who are entitled to annuities or annual allowances payable out of the RCMPS Account, and

(c) spouses and children of deceased contributors who are entitled to annual allowances payable out of the RCMPS Account.

B. Credits and Charges to the RCMPS Account and the SRB Account

1. Contributions from Contributors

Active members who have not yet completed 35 years of pensionable service make required contributions to the RCMPS Account of 6.5% of salary, less a credit equal to their Canada Pension Plan contributions. In addition, all active members contribute 1.0% of salary to the SRB Account. Contributors may elect to contribute in respect of any period of prior pensionable service as described in Note 1 at the end of this Appendix.

2. Contributions from Employer

The government, as employer, credits the RCMPS and SRB Accounts with amounts related to the contributions from members or retired members of the Force in respect of current and prior pensionable service. In addition, it makes special payments as required.

(a) Current Service

The government credits the RCMPS Account with a multiple of the amounts contributed to that Account by the members in respect of current service. The multiple is specified by the Minister of Finance and since April 1, 1978 has been equal to twice the amount received from contributors in the preceding quarter.

With respect to the SRB Account, the government matches the contributions to that Account from members.

(b) Prior Pensionable Service

The government credits to the RCMPS and SRB Accounts in respect of prior pensionable service are analogous to those already described in respect of current service.

(c) Special Payments

In addition, the government credits the RCMPS Account with such amounts as, in the opinion of the Minister of Finance, are required to provide for the increase in cost of the benefits payable under the RCMPSA as a result of any pay increase applicable to at least 1% of the members of the Force (in practice, limited to global increases in excess of the rates assumed in the previous actuarial report) or are required to meet the cost of benefits payable (i.e., unfunded liabilities) under the RCMPSA as shown by the most recent actuarial report.

The technique for financing the special employer contributions has been to credit to the RCMPS Account the full amount estimated to be required in the fiscal year that the pay increase is authorized or the actuarial report is laid before Parliament and to charge such amounts to the Consolidated Revenue Fund in five equal annual instalments beginning in such fiscal year.

3. Interest

In its role as custodian of the Account, the government credits the RCMPS Account with amounts representing interest on the balance in that Account from time to time calculated at the interest rate assumed in the preceding actuarial valuation and at such supplementary rate as may be provided by regulation. However, the Minister may apply such supplementary interest to reduce the instalments being charged to the Consolidated Revenue Fund in respect of increases in costs due to general salary increases and in respect of unfunded actuarial liabilities indicated in actuarial reports.

The total rate at which interest is credited to the RCMPS Account changes every three months and is calculated as if the amounts not required for payment of benefits in each quarter pursuant to the RCMPSA and the Public Service and Canadian Forces Superannuation Acts had been invested on a basis similar to the one used for the Canada Pension Plan; i.e., in 20-year bonds having a yield equivalent to the average yield on Government of Canada bonds with 20 or more years to maturity outstanding at that time.

Interest is credited to the SRB Account at the end of each quarter. The amount of the interest is calculated monthly on the minimum balance at a rate of interest representative of the yield on outstanding Government of Canada bonds having a term to maturity of five years, less 0.125 per cent.

4. Payment of Benefits

All payments pursuant to the RCMPSA (i.e., excluding indexing) are charged to the RCMPS Account. Benefits resulting from indexing pursuant to the SRBA are charged to the SRB Account only until the accumulated total paid in respect of a former contributor equals the aggregate of all amounts credited to the SRB Account in respect of that person, including interest. SRBA benefits paid in excess of that aggregate are then charged directly to the Consolidated Revenue Fund.

C. Summary of Benefits

(Notes referred to in this Summary appear at the end of this Appendix.)

1. Contributors Who Hold a Rank in the Force

	Benefit Depending On Service (Note 1)	
Type of Termination	Under 10 Years of Service in the Force*	10 or More Years of Service in the Force
Retirement because of age (Note 2)	Greater of: return of contributions (Note 3), or cash termination allowance (Note 4)	Immediate annuity (Note 5)
Compulsory retirement to promote economy or efficiency in the Force	Return of contributions	If less than 20 years: choice of return of contributions, deferred annuity (Note 6), or reduced immediate annuity (Note 7) If 20 or more years: immediate annuity
Compulsory retirement because of misconduct	Return of contributions, but cash termination allowance is available at the discretion of the Treasury Board (Note 8) if the contributor has reached retirement age	Return of contributions, but more generous benefit is available at the discretion of the Treasury Board (Note 8)
Voluntary retirement - officer contributors	Return of contributions	If less than 20 years: return of contributions

* A contributor who holds a rank in the Force must have 10 or more years of pensionable service to qualify for a benefit other than a lump sum payment.

Type of Termination	Under 10 Years of Service in the Force	10 or More Years of Service in the Force
		If at least 20 years but not yet entitled to immediate annuity: choice of return of contributions, deferred annuity, or annual allowance (Note 10) If 30 or more years of pensionable service at age 55 or older: immediate annuity If 35 or more years: immediate annuity
Voluntary retirement - contributors other than officers	Return of contributions	If less than 20 years: choice of return of contributions, or deferred annuity If 20 to 25 years: annual allowance (Note 9) If 25 or more years: immediate annuity
	Under 10 Years of Pensionable Service	**10 or More Years of Pensionable Service**
Compulsory retirement because of disability	Greater of: return of contributions, or cash termination allowance	Immediate annuity

2. Contributors Who Do Not Hold a Rank in the Force

Type of Termination	Under 5 Years of Pensionable Service	5 or More Years of Pensionable Service (Note 1)
Retirement because of age (Note 2)	Return of contributions	Immediate annuity
Compulsory retirement because of disability	Greater of: return of contributions, or cash termination allowance	Immediate annuity
Compulsory retirement because of misconduct	Return of contributions	Return of contributions, but more generous benefits are available at the discretion of the Treasury Board (Note 8)
Retirement for any other reason	Return of contributions	If 35 or more years of service in the Force: immediate annuity If 30 or more years at age 55 or older: immediate annuity If not qualified for an immediate annuity: choice of return of contributions, deferred annuity, or annual allowance (Note 10)

3. Benefits Paid after the Death of an Active Contributor

Type of Termination	Under 5 Years of Pensionable Service	5 or More Years of Pensionable Service
Death leaving no spouse or eligible children under age 25 (Note 11)	Return of contributions to nominated beneficiary, otherwise to estate	Greater of: return of contributions, or five times the annuity to which contributor would have been entitled (Note 13)
Death leaving spouse and/or eligible children under age 25	Greater of: return of contributions, or an amount equal to one month's pay for each year of pensionable service	Annual allowance to surviving spouse and/or children (Notes 12 and 13)

4. Benefits Paid after the Death of a Former Contributor Entitled to an Annuity or Annual Allowance

Type of Termination	Benefit
Death leaving no spouse or eligible children under age 25	Minimum benefit (Note 13)
Death leaving spouse and/or eligible children under age 25	Annual allowance (Note 12)

5. Indexing

The SRBA was enacted in 1970 to provide benefit adjustments related to increases in the cost of living for persons in receipt of pensions payable out of the Consolidated Revenue Fund. This Act applies to former contributors to the RCMPS Account and their surviving spouses and children who are entitled to annuities or annual allowances.

The supplementary benefit is calculated by multiplying the amount of the annuity or annual allowance to which the person is entitled from the RCMPS Account by the ratio of the Benefit Index for the year of payment to the Benefit Index for the year in which the person to whom or in respect of whose service the pension is payable ceased to be employed, and subtracting the amount of the annuity or annual allowance. The Benefit Index for the years prior to 1971 is shown in a Schedule in the Act. The Benefit Index for any year after 1970 is equal to the Benefit Index for the preceding year multiplied by the average of the CPI for the twelve-month period ending on September 30 of that preceding year and divided by the average for a corresponding period one year earlier. Prior to 1973, the increase in the initial Benefit Index was limited to a maximum of 2% in any year. An amendment to the SRBA in 1973 removed that limit and provided that the increase payable in January 1974 would take into account increases in the CPI above the 2% ceiling since 1970. In January 1983, an amendment made as part of a general economic restraints program limited the increase for 1983 and 1984 to 6.5% and 5.5%, respectively. Since 1983, the initial increase in the Benefit Index is prorated in respect of annuitants who have been in receipt of benefits for less than the full preceding calendar year (i.e., for contributors who retired or in respect of contributors who died during the preceding year).

Under the terms of the original Act of 1970, the supplementary benefits were payable to all former contributors in receipt of annuities or annual allowances who had attained age 60 or, if less than that age, were disabled, and to all spouses and children in receipt of annual allowances. The amendments effective January 1, 1973 provided for the payment of benefits to former contributors aged 55 to 59 in receipt of annuities or annual allowances in cases where the total of years of service plus age equals or exceeds 85 years.

The SRBA provides for a return of contributions paid by a member to the SRB Account with interest to the extent that such contributions exceed any benefit that has been or may be paid to in respect of the member.

D. Explanatory Notes

Note 1: Service

1. Service in the Force

"Service in the Force" normally means any period during which an individual is required to make contributions to the RCMPS Account but, for purposes of the plan, it also includes any period of service as a special constable of the Force before the date on which the RCMPSA came into force and any period of service as a member of a provincial or municipal police force that has been taken over by the Force.

2. Pensionable Service

Pensionable service is described in detail in the RCMPSA. In general, the pensionable service of a contributor includes any period of "service in the Force" (see above) for which he or she has contributed or has elected to contribute. It may also include other periods of prior service not in the Force for which he or she has elected to contribute in accordance with the provisions of the RCMPSA:

(a) a period of service

  (i) on active duty in the armed forces during World War I or World War II, or

  (ii) in the Canadian Army Special Force established in 1950, or

  (iii) in the regular force, or

  (iv) in forces raised by Canada, other than the regular force, provided that such service was full-time service lasting for six months or more,

(b) a period of full-time paid employment in the Public Service, and

(c) a period of service as a member of the House of Commons or as a Senator in respect of which he or she made contributions under the Members of Parliament Retiring Allowances Act.

Note 2: Retirement Because of Age

In this summary, "retirement because of age" means ceasing to be a member of the Force on or after reaching the prescribed retirement age applicable to the member's rank, or at age 60 or above in the case of a civilian member, provided the contributor is not being retired because of disability or misconduct. The retirement ages prescribed in the regulations are shown below:

	Rank	Retirement Age
(a)	Commissioner	62
(b)	Deputy Commissioner	61
(c)	All other officers and all members of the Force not holding a rank in the Force	60
(d)	Corps Sergeant Major, Staff Sergeant Major, Sergeant Major, Staff Sergeant	58
(e)	Sergeant	57
(f)	Corporal, Constable, Special Constable, Marine Constable	56

Note 3: Return of Contributions

"Return of contributions" means the payment of an amount equal to the total current and prior service contributions paid by the contributor into the RCMPS and SRB Accounts or paid into any other superannuation account or pension fund and transferred to the RCMPS and SRB Accounts, plus interest on all amounts at the rate of 4% per annum to December 31st of the year immediately preceding the year the contributor ceased to be a member of the Force. Interest is credited each December 31st (beginning in 1974) on the accumulated contributions with interest as at the prior December 31st.

Note 4: Cash Termination Allowance

"Cash termination allowance" means an amount equal to one month's salary at the rate authorized to be paid to the contributor at date of termination multiplied by the number of years of pensionable service to the credit of the contributor, minus the total reduction in contributions to the RCMPS Account as a result of integration of the Plan with the Canada Pension Plan.

Note 5: Immediate Annuity

"Immediate annuity" means an annuity that becomes payable immediately upon retirement. The annual amount of the annuity is equal to 2% of the contributor's average annual salary in respect of any selected six-year period of pensionable service multiplied by the number of years of pensionable service not exceeding 35. For a contributor who has reached age 65 or is entitled to a disability pension under the Canada Pension Plan, the amount of the annuity which is payable under the RCMPSA is reduced by 0.7% of the average annual salary, not exceeding the "Average Maximum Pensionable Earnings", used in determining the amount of the annuity, multiplied by the number of years of pensionable service after 1965 or after attaining age 18, whichever is later, but not exceeding 35 years. "Average Maximum Pensionable Earnings" is the average of the Year's Maximum Pensionable Earnings, as defined in the Canada Pension Plan, during the contributor's last three years of service.

All annuities are normally payable in equal monthly instalments in arrears until the end of the month in which the contributor dies.

Note 6: Deferred Annuity

"Deferred annuity" means an annuity that becomes payable upon attainment of age 60. The annual payment is determined on the same basis as for an immediate annuity.

If a former contributor under the age of 60 eligible for a deferred annuity under the RCMPSA becomes disabled, the annuity is converted to an immediate annuity. If a former contributor under age 60 ceases to be entitled to a disability pension, he or she becomes entitled to a deferred annuity or, at his or her option, to an annual allowance which is the actuarial equivalent of the deferred annuity.

Note 7: Reduced Immediate Annuity

"Reduced immediate annuity" means an immediate annuity where the annual amount of annuity determined as described in Note 5 is reduced until such time as the contributor reaches age 65, but not thereafter, by 5% for each full year, not exceeding six, by which the period of his or her service in the Force is less than 20 years.

This type of annuity may be chosen by a contributor who holds a rank in the Force with 10 but less than 20 years of service in the Force:

(a) if he or she is compulsorily retired prior to his or her normal retirement age due to a reduction in the Force, or

(b) at the discretion of the Treasury Board, if he or she is compulsorily retired to promote economy or efficiency.

Note 8: Retirement Because of Misconduct

In the case of compulsory retirement because of misconduct, the contributor is entitled to a return of contributions or, at the discretion of the Treasury Board, the whole or any part specified by the Treasury Board of any benefit to which he or she would have been entitled by reason of his or her age and length of service if he or she had been retired because of age, compulsorily retired to promote economy or efficiency or, in the case of a civilian member, retired for any other reason. In no case, however, shall the capitalized value of any reduced benefit (based by Regulation on the a(f) and a(m) ultimate mortality table and an interest rate of 4%) be less than the return of contributions.

Note 9: Annual Allowance (Other than Officers or Civilian Members)

"Annual allowance", in the case of a contributor other than an officer or a civilian member, means an immediate annuity, reduced by 5% for each full year by which (a) the period of his or her service in the Force is less than 25 years, or (b) his or her age at time of retirement is less than the retirement age applicable to his or her rank, whichever is the lesser.

Note 10: Annual Allowance (Officers or Civilian Members)

"Annual allowance", in the case of an officer or a civilian member (i.e., a contributor who does not hold a rank), means an optional annuity payable immediately or when the contributor attains age 50, if later.

This type of annual allowance may be chosen by

(a) an officer who retires voluntarily and has 20 or more years of service in the Force and is not entitled to a full immediate annuity by reason of having 35 years of service in the Force or having attained age 55 with 30 or more years of pensionable service;

(b) a civilian member who retires for any reason other than disability or misconduct with five years of service in the Force and five years of pensionable service and is not entitled to a full immediate annuity.

The amount of the allowance is equal to the amount of the deferred annuity to which he or she is entitled, reduced by 5% of such annuity multiplied by (i) the greater of 55 minus his or her age and 30 minus the number of years of pensionable service, if the contributor had more than 25 years of pensionable service (and in the case of a civilian, attained age 50), (ii) 30 minus the number of years of pensionable service, in the case of a civilian contributor compulsorily retired for any reason at age 55 or older with 10 years of service in the Force, or (iii) 60 minus the age when the allowance becomes payable, in the case of an officer described in (a) who has less than 25 years of pensionable service or in the case of any civilian described in (b). However, the reduction in (ii) may be waived by the Treasury Board. Age and service are expressed in the nearest one-tenth of a year.

If a former contributor entitled to an annual allowance commencing at age 50 becomes disabled before reaching age 50, his or her entitlement changes from an annual allowance deferred to age 50 to an immediate annuity. If the former contributor later ceases to be entitled to a disability pension and has not reached age 60, then the immediate annuity reverts to an annual allowance or, at the option of the former contributor, becomes a deferred annuity which is the actuarial equivalent of the annual allowance.

Note 11: Eligible Children

The expression "eligible children under 25" includes all children of the contributor under age 18, and any child of the contributor age 18 or over but under 25, in full-time attendance at a school or university, having been in such attendance substantially without interruption since he or she reached age 18 or the contributor died, whichever occurred later.

Note 12: Annual Allowance

"Annual allowance", in the case of the surviving spouse and children of an active or former contributor, means an annuity that becomes payable immediately upon the death of the contributor. The amount of the allowance is determined with reference to a basic allowance and is ordinarily payable in equal monthly instalments.

The basic allowance is equal to 1% of the average annual pay of the deceased contributor in respect of any selected six-year period of his or her pensionable service multiplied by the number of years of pensionable service not exceeding 35.

A surviving spouse is entitled to an annual allowance equal to the basic allowance except under the following circumstances:

(a) If the contributor dies within one year of marriage, no allowance is payable to the surviving spouse if the Treasury Board is not satisfied that the contributor was at the time of that marriage in such a condition of health as to justify his or her having an expectation of surviving for at least one year thereafter.

(b) If a member of the Force marries after age 60, his or her surviving spouse is not entitled to any annual allowance, unless after marriage the member became or continued to be a contributor.

(c) No allowance is payable to a widower of a contributor who was not a member of the Force on or after December 20, 1975.

The annual allowance for an eligible child is equal to 20% of the basic allowance or, if the contributor died leaving no spouse or the spouse is dead, to 40% of the basic allowance, provided that when the number of eligible children of a deceased contributor exceeds four, the total amount of allowances to such children shall not exceed the amount that would be payable if there were only four.

Allowances are not payable to children of a spouse who is not entitled to an allowance as the result of death of a contributor within one year of marriage under circumstances stated in paragraph (a) of this note. Except as provided by regulation, allowances are not payable to a child who was born, adopted or became a stepchild of a member of the Force when the member was over 60 years of age, unless he or she became or continued to be a contributor after attaining 60 years of age.

Note 13: Minimum Benefit

If upon the death of a contributor there is no person to whom an allowance provided under the terms of the RCMPSA may be paid, or if the persons to whom such allowances may be paid die or cease to be entitled thereto and no other amount may be paid to them, there is paid to the estate of the contributor the greater of

(i) a return of contributions, or

(ii) the aggregate of

   (a) five times the immediate RCMPSA annuity to which the contributor was or would be entitled at the time of his or her death, and

   (b) a return of contributions made to the SRB Account.

This payment is reduced by all amounts already paid to those persons and to the contributor.

APPENDIX 3

Promotional Salary Increases

Pensionable Service*	Males (%)	Females (%)
0	26.9	22.6
1	17.4	14.8
2	6.5	5.8
3	3.2	3.1
4	0.8	0.8
5	0.7	0.8
6	0.6	0.8
7	0.5	0.9
8	0.4	0.9
9	0.3	1.0
10	0.4	1.0
11	0.6	1.1
12	0.8	1.1
13	0.9	1.2
14	1.0	1.2
15	1.0	1.3
16	1.0	1.4
17	1.1	1.5
18	1.1	1.6
19	1.2	1.7
20	1.2	1.8
21	1.2	1.6
22	1.2	1.4
23	1.2	1.2
24	1.2	1.0
25	1.3	0.8
26	1.3	0.6
27	1.4	0.4
28	1.5	0.2
29	1.6	0.1
30	1.7	0.1
32	1.9	0.1
34	2.1	0.1
36	2.3	0.1
38	2.5	0.1
39+	2.6	0.1

* Calculated to the nearest number of years.

APPENDIX 4

Rates of Nonvested Termination*

Pensionable Service**	Males	Females
0	.0535	.1030
1	.0320	.0725
2	.0250	.0510
3	.0230	.0500
4	.0250	.0485
5	.0255	.0465
6	.0190	.0410
7	.0145	.0330
8	.0125	.0305
9	.0110	.0295
10	.0090	.0285
11	.0075	.0250
12	.0070	.0240
13	.0065	.0210
14	.0055	.0160
15	.0040	.0120
16	.0030	.0080
17	.0020	.0060
18	.0015	.0040
19	.0010	.0025
20	.0005	.0015
21+	.0005	.0010

* Decrement includes all non-mortality terminations resulting in lump sum payments.

** Calculated to the nearest number of years.

APPENDIX 5

Rates of Pensionable Disability*

Age Nearest Birthday	Males	Females
to 29	-	-
30	.0001	.0004
31	.0002	.0008
32	.0002	.0011
33	.0003	.0014
34	.0003	.0017
35	.0004	.0020
36	.0005	.0024
37	.0006	.0028
38	.0006	.0031
39	.0007	.0034
40	.0008	.0037
41	.0009	.0042
42	.0010	.0047
43	.0012	.0052
44	.0014	.0056
45	.0017	.0059
46	.0020	.0062
47	.0023	.0065
48	.0026	.0068
49	.0030	.0072
50	.0035	.0076
51	.0042	.0080
52	.0049	.0085
53	.0057	.0094
54	.0065	.0106
55	.0074	.0118
56	.0085	.0131
57	.0098	.0145
58	.0112	.0160
59	.0127	.0176
60	.0126	.0164
61	.0125	.0152
62	.0124	.0142
63	.0122	.0132
64	.0119	.0123

* Rates applicable only to active contributors with at least ten years of pensionable service.

APPENDIX 6

Rates of Pensionable Retirement*

Age Nearest Birthday	Males	Females
to 37	-	-
38	.0010	.0005
39	.0135	.0080
40	.0220	.0130
41	.0325	.0195
42	.0370	.0220
43	.0430	.0260
44	.0525	.0315
45	.0535	.0320
46	.0545	.0325
47	.0630	.0380
48	.0645	.0385
49	.0670	.0400
50	.0730	.0440
51	.0770	.0460
52	.0915	.0550
53	.1150	.0690
54	.1720	.1030
55	.2540	.1520
56	.2700	.1620
57	.2670	.1600
58	.2310	.1390
59	.2880	.1730
60	.7670	.5110
61	.5240	.3840
62	.6160	.4930
63	.7240	.6250
64	.8510	.7890
65	1.0000	1.0000

* Rates applicable only to active contributors with at least 20 years of pensionable service.

APPENDIX 7

Rates of Mortality for 1990*

Age Nearest Birthday	Males	Females
20	.0004	.0002
25	.0005	.0002
30	.0006	.0003
35	.0007	.0004
40	.0010	.0006
45	.0016	.0009
50	.0028	.0015
55	.0046	.0023
60	.0074	.0039
65	.0133	.0065
70	.0236	.0113
75	.0387	.0224
80	.0684	.0400
85	.1052	.0652
90	.1477	.1060
95	.2139	.1761
100	.3128	.2952
105	.5105	.5083
109	1.0000	1.0000

* Rates applicable equally to active contributors, retired contributors and surviving spouses.

APPENDIX 8

Mortality Projection Factors

Age Nearest Birthday	Annual Percentage Reductions After 1990	
	Males	Females
20	.10	.50
25	.10	.50
30	.50	.75
35	.75	1.25
40	1.00	1.75
45	1.50	1.75
50	1.50	1.50
55	1.30	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 9

Proportions of Deceased Contributors Married at Death and Average Age of Widow(er) Corresponding to Age of Contributor at Death

Nearest Age of Contributor at Death	Proportion Married		Average Age	
	Male	Female	Widow	Widower
20	.18	.10	20	21
25	.55	.32	24	26
30	.80	.39	29	32
35	.88	.48	33	37
40	.94	.56	38	42
45	.97	.60	43	47
50	.95	.59	48	53
55	.95	.51	53	58
60	.95	.37	57	63
65	.94	.24	62	67
70	.93	.16	66	72
75	.90	.11	71	76
80	.79	.08	75	80
85	.65	.05	80	84
90	.53	.03	84	88
95	.40	.02	87	91
100	.29	.01	89	94

APPENDIX 10

Number and Average Age of Surviving Children and Eligible Students

Nearest Age of Contributor at Death	Number of Survivors*		Average Age of Survivors*	
	On Male Death	On Female Death	On Male Death	On Female Death
25	.19	.04	2	2
30	1.33	.71	3	3
35	1.89	1.07	7	7
40	1.94	1.15	11	11
45	1.84	1.04	15	15
50	1.27	.65	18	19
55	.52	.27	20	21
60	.23	.07	21	23
65	.07	.02	22	24
70	.04	-	23	-
75	.02	-	24	-

Proportion of Students Retaining Eligibility Throughout Following Year

Age	Proportion
18	.85
19	.90
20	.90
21	.90
22	.85
23	.75
24	.50

* In this context, "survivors" refers to both surviving children and eligible students.

APPENDIX 11

Reconciliation of Active Contributors by Sex

	Males	Females	Total
At December 31, 1985	15,378	1,556	16,934
Data corrections	(109)	(41)	(150)
New entrants	2,867	1,029	3,896
Retirements	(1,243)	(35)	(1,278)
Deaths	(68)	(4)	(72)
Pensionable disabilities	(59)	(13)	(72)
Nonvested terminations	(601)	(332)	(933)
At December 31, 1989	16,165	2,160	18,325

APPENDIX 12

Reconciliation of Retired Contributors by Sex

A. Retirement Pensioners

	Males	Females	Total
At December 31, 1985	2,515	66	2,581
Data corrections	5	1	6
New pensioners	1,243	35	1,278
Deaths	(86)	-	(86)
Transfers to other plans	(2)	-	(2)
At December 31, 1989	3,675	102	3,777

B. Disability Pensioners

	Males	Females	Total
At December 31, 1985	123	13	136
Data corrections	(3)	(1)	(4)
New pensioners	59	13	72
Deaths	(5)	-	(5)
At December 31, 1989	174	25	199

APPENDIX 13A

Male Contributors as at December 31, 1989

Number of Contributors and Average Current Pay

Age Nearest Birthday	Completed Years of Pensionable Service 0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	All Years of Service
to 24	434	4	-	-	-	-	-	-	438
	$33,300	39,900	-	-	-	-	-	-	$33,400
25-29	1,292	653	36	-	-	-	-	-	1,981
	$37,300	42,300	41,000	-	-	-	-	-	$39,000
30-34	483	979	1,486	151	-	-	-	-	3,099
	$36,900	42,600	43,400	44,200					$42,200
35-39	164	246	939	2,481	102	-	-	-	3,932
	$35,900	42,400	43,700	46,100	47,800	-	-	-	$44,900
40-44	105	61	251	1,075	2,162	77	-	-	3,731
	$37,000	40,800	43,300	46,400	50,700	53,500	-	-	$48,500
45-49	55	42	70	175	406	938	71	-	1,757
	$34,900	40,200	41,600	44,800	51,200	55,400	58,900	-	$52,000
50-54	28	27	74	56	41	173	462	32	893
	$34,000	39,300	38,500	44,000	51,500	54,600	61,400	65,200	$55,200
55-59	7	12	42	61	14	21	55	78	290
	$45,100	39,100	39,400	41,100	52,000	50,600	58,600	66,700	$52,300
60-64	-	3	9	16	4	5	5	2	44
	-	45,900	37,000	39,500	42,300	44,200	49,100	75,800	$43,000
All Ages	2,568	2,027	2,907	4,015	2,729	1,214	593	112	16,165
	$36,400	42,300	43,200	45,900	50,700	55,000	60,800	66,400	$45,600

Average Age: 37.9 years

Average Service: 14.8 years

APPENDIX 13B

Female Contributors as at December 31, 1989

Number of Contributors and Average Current Pay

Age Nearest Birthday	Completed Years of Pensionable Service 0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	All Years of Service
to 24	211	2	-	-	-	-	-	-	213
	$34,900	40,600	-	-	-	-	-	-	$35,000
25-29	463	166	11	-	-	-	-	-	640
	$38,200	39,900	36,400	-	-	-	-	-	$38,600
30-34	131	210	190	20	-	-	-	-	551
	$36,000	40,200	40,900	39,700	-	-	-	-	$39,400
35-39	55	62	153	114	5	-	-	-	389
	$34,000	38,700	41,200	40,500	38,500	-	-	-	$39,500
40-44	28	19	54	36	33	4	-	-	174
	$33,500	34,900	39,600	41,100	42,500	37,400	-	-	$38,900
45-49	12	14	23	15	10	3	-	-	77
	$31,500	37,500	36,700	40,600	41,100	35,200	-	-	$37,300
50-54	2	7	14	17	7	6	5	4	62
	$55,600	37,600	35,500	38,400	40,300	38,400	47,200	40,900	$39,300
55-59	1	1	12	9	8	4	3	1	39
	$30,400	34,200	35,000	38,500	40,500	48,000	42,700	38,400	$38,800
60-64	-	1	2	6	2	-	-	1	12
	-	46,100	32,800	33,400	36,100	-	-	31,100	$34,600
65+	-	-	2	-	1	-	-	-	3
	-	-	37,000	-	43,400	-	-	-	$39,100
All Ages	903	482	461	217	66	17	8	6	2,160
	$36,600	39,600	40,200	40,100	41,300	39,900	45,500	38,800	$38,600

Average Age: 33.0 years

Average Service: 7.9 years

APPENDIX 14A

Benefits in Course of Payment as at December 31, 1989

Type of Recipient	Number	Yearly Amounts* Paid From RCMPS Account ($)	Paid From SRB Account ($)	Total ($)
Retirement pensioners				
Males	3,675	57,238,000	23,366,000	80,604,000
Females	102	918,000	386,000	1,304,000
Subtotal	3,777	58,156,000	23,752,000	81,908,000
Disability pensioners				
Males	174	1,695,000	790,000	2,485,000
Females	25	138,000	44,000	182,000
Subtotal	199	1,833,000	834,000	2,667,000
Surviving spouses				
Males	3	11,000	5,000	16,000
Females	514	1,853,000	1,907,000	3,760,000
Subtotal	517	1,864,000	1,912,000	3,776,000
Surviving children and eligible students				
Males	136	133,000	52,000	185,000
Females	135	131,000	52,000	183,000
Subtotal	271	264,000	104,000	368,000
All recipients				
Males	3,988	59,077,000	24,213,000	83,290,000
Females	776	3,040,000	2,389,000	5,429,000
Grand total	4,764	62,117,000	26,602,000	88,719,000

* In Section VI we describe the methodology used to determine the yearly amounts.

APPENDIX 14B

Retired Male Contributors as at December 31, 1989

Age Nearest Birthday	Retirement Pensioners			Disability Pensioners		
		Yearly Amounts*			Yearly Amounts*	
	Number	Average ($)	Total ($)	Number	Average ($)	Total ($)
30-34	-	-	-	1	7,000	7,000
35-39	3	11,700	35,000	6	7,800	47,000
40-44	152	15,700	2,386,000	17	10,900	185,000
45-49	543	19,800	10,751,000	22	12,700	279,000
50-54	883	22,200	19,602,000	32	17,400	557,000
55-59	1,151	24,900	28,660,000	39	17,200	671,000
60-64	508	22,900	11,633,000	31	14,000	434,000
65-69	199	18,100	3,602,000	12	10,000	120,000
70-74	105	18,200	1,911,000	12	14,000	168,000
75-79	84	16,400	1,378,000	1	4,000	4,000
80-84	33	13,400	442,000	-	-	-
85-89	13	15,000	195,000	-	-	-
90-94	-	-	-	1	13,000	13,000
95-99	1	9,000	9,000	-	-	-
All Ages	3,675	21,933	80,604,000	174	14,282	2,485,000

Average Age: 56.2 years

Average Age: 55.3 years

* In Section VI we describe the methodology used to determine the yearly amounts.

APPENDIX 14C

Retired Female Contributors as at December 31, 1989

Age Nearest Birthday	Retirement Pensioners Number	Retirement Pensioners Yearly Amounts* Average ($)	Retirement Pensioners Yearly Amounts* Total ($)	Disability Pensioners Number	Disability Pensioners Yearly Amounts* Average ($)	Disability Pensioners Yearly Amounts* Total ($)
40-44	1	12,000	12,000	7	7,100	50,000
45-49	-	-	-	3	4,700	14,000
50-54	6	15,300	92,000	3	8,700	26,000
55-59	12	12,200	146,000	5	6,400	32,000
60-64	19	16,600	315,000	4	7,200	29,000
65-69	35	11,600	406,000	2	13,000	26,000
70-74	17	11,900	202,000	1	5,000	5,000
75-79	9	11,000	99,000	-	-	-
80-84	2	9,000	18,000	-	-	-
85-89	1	14,000	14,000	-	-	-
All Ages	102	12,784	1,304,000	25	7,280	182,000

Average Age: 65.9 years

Average Age: 53.4 years

* In Section VI we describe the methodology used to determine the yearly amounts.

APPENDIX 14D

Survivors as at December 31, 1989

Age Nearest Birthday	Spouses* Number	Spouses* Yearly Amounts** Average ($)	Spouses* Yearly Amounts** Total ($)	Children Number	Children Yearly Amounts** Average ($)	Children Yearly Amounts** Total ($)
0-17	-	-	-	171	1,100	188,000
18-24	-	-	-	100	1,800	180,000
25-29	3	2,700	8,000	-	-	-
30-34	13	4,100	53,000	-	-	-
35-39	32	4,400	141,000	-	-	-
40-44	40	5,700	228,000	-	-	-
45-49	40	8,100	324,000	-	-	-
50-54	76	8,000	608,000	-	-	-
55-59	72	8,800	634,000	-	-	-
60-64	45	8,000	358,000	-	-	-
65-69	54	8,000	437,000	-	-	-
70-74	42	7,600	321,000	-	-	-
75-79	52	7,200	374,000	-	-	-
80-84	35	6,100	214,000	-	-	-
85-89	12	5,900	71,000	-	-	-
90-94	1	5,000	5,000	-	-	-
All Ages	517	7,304	3,776,000	271	1,358	368,000

Average Age: 59.0 years   Average Age: 15.8 years

* All but three spouses are females whereas there are approximately equal numbers of male and female children.

** Amounts reflect accrued indexation (per the SRBA) to and including January 1, 1990.