

**2003**

# **ACTUARIAL REPORT**

**ON THE**

**PENSION PLAN FOR THE**

**ROYAL CANADIAN MOUNTED POLICE**

**AS AT 31 MARCH 2002**



Office of the Superintendent of  
Financial Institutions Canada

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4 September 2003

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

Dear Minister:

Pursuant to section 6 of the *Public Pensions Reporting Act*, I am pleased to submit the report on the actuarial review as at 31 March 2002 of the Royal Canadian Mounted Police pension plan. This plan is defined by Parts I, III, and IV of the *Royal Canadian Mounted Police Superannuation Act* and by the *Pension Benefits Division Act* and the *Special Retirement Arrangements Act*.

Yours sincerely,



Jean-Claude Ménard, F.S.A., F.C.I.A.  
Chief Actuary  
Office of the Chief Actuary

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## I. Executive Summary

### A. Introduction

The previous actuarial report on the Royal Canadian Mounted Police (RCMP) pension plan was made as at 31 March 1999. The valuation was in respect of the plan defined by Parts I, III, and IV of the *Royal Canadian Mounted Police Superannuation Act* (RCMPSA) and by the *Pension Benefits Division Act*.

Beginning with this valuation, the RCMP pension plan is considered to also include the RCMP-related benefits defined by the *Special Retirement Arrangements Act*, which were last valued in the actuarial report on the Retirement Compensation Arrangements (RCA) Account as at 31 December 1998. The aggregate RCMP-related RCA benefits are very small in relation to the aggregate RCMPSA benefits.

### B. Purpose of Actuarial Report

This actuarial report on the RCMP pension plan was made as at 31 March 2002 pursuant to the *Public Pensions Reporting Act* (PPRA). The date of the next periodic review is 31 March 2005.

In accordance with accepted actuarial practice, the main purpose of this actuarial report is to show realistic estimates of:

- the balance sheets of the pension plan as at the valuation date, i.e. the assets, the liabilities, and the actuarial surpluses or actuarial deficits as at that date;
- the annual amount to amortize over a period of years any going-concern actuarial deficit revealed as at the valuation date, and
- the projected costs of the plan for each of the next three plan years<sup>1</sup> following the valuation date.

### C. Main Findings

- As at 31 March 2002 the RCMPSA portion of the plan had an actuarial surplus of \$1,251.6 million in the Superannuation Account and an actuarial deficit of \$5.7 million in the Pension Fund. These amounts are 14.5% and 1.2% of the corresponding liabilities, respectively.
- The Superannuation Account actuarial surplus exceeds 10% of the corresponding liabilities by \$387.2 million, which amount must be withdrawn from the Superannuation Account in accordance with the legislation. If the \$5.7 million Pension Fund actuarial deficit were to be amortized in 13<sup>2</sup> equal annual instalments beginning on 31 March 2004, the instalments would be \$700,000.

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<sup>1</sup> Any reference to a given *plan year* in this report should be taken as the 12-month period ending 31 March of the given year.  
<sup>2</sup> The expected average remaining service life (EARSL) for the active contributors is 13 years.

- The RCMPSA normal cost for the 2003 plan year is 20.17% of pensionable payroll<sup>1</sup>, that is \$237.2 million, and is estimated to be 20.22% of pensionable payroll for each of the following two plan years.

#### **D. RCA Results**

- As at 31 March 2002 the RCA Account had an actuarial deficit of \$1.8 million. The government made special payments in excess of the actuarial deficit in plan year 2003, no further special payments are required.
- The RCA normal cost for the 2003 plan year is 0.11% of pensionable payroll, that is \$1.3 million, and is estimated to be 0.11% and 0.12% of pensionable payroll for the following two plan years, respectively.

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<sup>1</sup> Pensionable payroll means the aggregate of pensionable earnings of all contributors with less than 35 years of service.



## II. Financial Position of the Plan

### A. RCMPSA Going-Concern Valuation Results

Beginning on 1 April 2000, employer and employee contributions to the *Royal Canadian Mounted Police Superannuation Act* (RCMPSA) portion of the plan were no longer credited to the RCMP Superannuation Account. Rather, they were deposited in the newly created RCMP Pension Fund to be invested in the financial markets. The valuation results of this section show the financial position for both RCMPSA funding vehicles as at 31 March 2002. A projection of the runoff of the Superannuation Account is shown in Appendix 10.

The following balance sheet was prepared using the assets described in Appendix 4, the data described in Appendix 5, the methodology described in Appendix 6, and the assumptions described in Appendix 7.

**Table 1**    **Going-Concern Balance Sheet**  
as at 31 March 2002 (\$ millions)

	Superannuation Account	Pension Fund
Actuarial value of assets <sup>1</sup>	9,895.8	473.8
Actuarial liabilities		
Regular Members		
· Contributors	3,794.2	413.7
· Retirement pensioners	3,768.0	13.0
· Disability pensioners	245.7	2.2
· Surviving dependants	164.2	0.2
Civilian Members		
· Contributors	373.9	48.8
· Retirement pensioners	191.1	1.2
· Disability pensioners	33.5	0.4
· Surviving dependants	15.5	0.0
Administrative expenses	58.1	
Total actuarial liabilities	8,644.2	479.5
Actuarial surplus/(deficit)	1,251.6	(5.7)

<sup>1</sup> Includes the present value of future contributions in respect of elected prior service, described in Appendix 6.

## B. Reconciliation of RCMPSA Going-Concern Valuation Results

This section reconciles each financial position shown in this going-concern valuation with the corresponding item of the previous valuation. The items shown in the following table are explained afterward.

**Table 2 Reconciliation of Financial Position**  
 (\$ millions)

	Superannuation Account	Pension Fund
As at 31 March 1999	2,430.3	-
Data corrections	2.9	-
Expected interest on initial actuarial surplus	719.6	-
Cost/contributions difference	17.3	24.5
Actuarial surplus withdrawals	(2,181.6)	-
Unrecognized investment losses	-	24.5
Experience gains and losses	(242.3)	(62.1)
Changes in assumptions and methodology	514.6	14.7
Plan amendment (two-year vesting)	(9.2)	(7.3)
As at 31 March 2002	1,251.6	(5.7)

### 1. Data Corrections

The correction of data (such as coding of status and pension amounts) upon which the 1999 report was based resulted in a decrease in the actuarial surplus of \$2.9 million.

### 2. Expected Interest on Initial Actuarial Surplus

The expected interest to 31 March 2002 on the actuarial surplus of \$2,430.3 million in the Account as at 31 March 1999 amounted to \$719.6 million, based on the Account yields projected in the previous report for the three-year intervaluation period.

### 3. Cost/Contributions Difference

An increase of \$17.3 million in the Account actuarial surplus resulted from the actual government contributions in plan year 2000 being more than the government portion of the normal cost shown in the cost certificate of the previous report. An increase of \$24.5 million in the Fund actuarial surplus in plan years 2001 and 2002 was generated similarly. These amounts include interest accumulation on the differences to 31 March 2002.

### 4. Actuarial Surplus Withdrawals

Legislative provisions grant authority to debit some actuarial surplus from the Superannuation Account. Withdrawals of \$1,900 million on 31 March 2001 and

\$115 million on 31 March 2002 decreased the surplus by \$2,181.6 million after taking interest into account.

## 5. Unrecognized Investment Losses

An actuarial asset valuation method that minimizes the impact of short-term fluctuations in the market value of assets was used (see Appendix 6), causing the actuarial value of the Pension Fund assets to be \$24.5 million more than their market value.

## 6. Experience Gains and Losses

Since the previous valuation, experience losses have decreased the Superannuation Account actuarial surplus by \$242.3 million. Since its creation, the Pension Fund has suffered \$62.1 million in experience losses. The main items (in \$ millions) are described in the following table.

	Superannuation Account	Pension Fund
Demographic assumptions (i)	8.2	(2.6)
Seniority and promotional increases	(33.6)	(0.8)
Pension indexation	(38.5)	(0.1)
Year's Maximum Pensionable Earnings (YMPE) increases	(4.1)	(0.4)
Salary increases (ii)	(164.5)	(17.0)
Investment earnings (iii)	(1.4)	(38.8)
Administrative expenses	(5.8)	-
Miscellaneous	(2.6)	(2.4)
<b>Net experience losses</b>	<b>(242.3)</b>	<b>(62.1)</b>

- (i) The net impact of the demographic experience such as mortality, pensionable retirement and other elements increased the Account actuarial surplus by \$8.2 million and decreased the Fund actuarial surplus by \$2.6 million.
- (ii) General salary increases granted to Regular Members over the three-year intervaluation period were in aggregate 3.8% higher than expected. These unforeseen increases have decreased the Account actuarial surplus by \$164.5 million and the Fund actuarial surplus by \$17 million.
- (iii) The rates of interest credited to the Account fell just short of the corresponding projected Account yields in the previous valuation; consequently the experience loss (\$1.4 million) was almost negligible.

Financial markets went through difficult times in 2001 and 2002. The Fund rates of return on a market value basis, using the dollar-weighted approach, were significantly lower than the projected annual yields of 7.25% in the previous valuation. Consequently investment earnings were \$38.8 million less than expected.

## 7. Revision of Actuarial Assumptions

Actuarial assumptions were revised based on economic trends and demographic experience as described in Appendix 7. The impact (in \$ millions) of these revisions on the actuarial surplus (deficit) as at 31 March 2002 is described below.

Assumption	Superannuation Account	Pension Fund
Mortality improvement factors	23.8	0.7
Pensionable retirements	20.4	3.2
Proportion with spouse at death	37.2	1.4
Seniority and promotional	(23.2)	(4.9)
Economic assumptions	473.4	16.1
Administrative expenses	(11.6)	-
Minor items	(5.4)	(1.8)
Net impact of revisions	514.6	14.7

The net impact of the revision of the assumptions is largely attributable to the changes in economic assumptions. As described in Appendix 7, all economic assumptions made in the previous valuation were revised, with the most important being as follows:

- ultimate level of inflation lowered from 3.0% to 2.7%;
- ultimate increase in average earnings lowered from 4.0% to 3.6%;
- ultimate yield on the Account lowered from 6.0% to 5.7%; and
- ultimate rate of return on the Fund was revised from 7.25% to 7.0%.

## 8. Plan Amendment

This valuation fully reflects the regulatory change, expected to come into force in plan year 2004, that provides for full vesting and portability options after two years of service.

### C. RCMPSA Solvency Valuation Results

For the first time, a valuation was conducted on a solvency basis. A solvency liability attempts to measure the value of the benefits on a plan termination basis. A comparison of the solvency assets with the solvency liabilities measures the degree of funding.

The plan being sponsored by the government, the plan legislation is silent on the benefits payable upon plan termination. For solvency valuation purposes, all members are assumed to be fully vested in respect of their accrued benefits. The following results are shown for illustration only.

The following solvency balance sheet for the RCMPSA portion of the plan was prepared using the data described in Appendix 5 and the assets, the methodology and the assumptions described in Appendix 9.

**Table 3 Solvency Balance Sheet**  
as at 31 March 2002 (\$ millions)

	Superannuation Account	Pension Fund
Market value <sup>1</sup> of assets	11,781.1	445.7
Arrears contributions <sup>2</sup>	6.0	1.3
<b>Total assets</b>	<b>11,787.1</b>	<b>447.0</b>
Actuarial liabilities		
Regular Members		
· Contributors	4,095.9	408.9
· Pensioners and survivors	4,602.2	16.9
Civilian Members		
· Contributors	307.0	38.7
· Pensioners and survivors	264.6	1.8
Termination expenses	5.6	0.3
<b>Total liabilities</b>	<b>9,275.3</b>	<b>466.6</b>
Solvency excess/(actuarial deficit)	2,511.8	(19.6)
Solvency ratio	127%	96%

<sup>1</sup> The imputed market value of the notional Superannuation Account assets was calculated by discounting future cash flows using the 31 March 2002 yields on Government of Canada bonds of corresponding durations. The market value of the Pension Fund assets as at 31 March 2002 was used.

<sup>2</sup> Includes only the present value of member contributions to be made in respect of prior service elections made on before 31 March 2002.

## D. RCMPSA Cost Certificate

The normal costs, assets and liabilities were computed for the RCMPSA portion of the plan using the assets described in Appendix 4, the data described in Appendix 5, the methodology described in Appendix 6, and the assumptions described in Appendix 7. Emerging experience, differing from the corresponding assumptions, will result in gains or losses to be revealed in subsequent reports.

### 1. Normal Costs

The estimated value of the sum of the benefits that will accrue on behalf of the contributors and the estimated administrative expenses to be charged to the Fund for plan year 2003 is 20.17% of pensionable payroll. The following table shows the details of the normal cost for plan year 2003.

**Table 4 Normal Cost for Plan Year 2003**  
 (\$ millions)

Total normal cost	237.2
Member required contributions	63.5
Government normal cost	173.7
Expected pensionable payroll	1,176.3
Normal cost as % of expected pensionable payroll	20.17%
Ratio of government to member contributions	2.74

The following table reconciles the RCMPSA normal cost of this valuation with the corresponding item in the previous valuation.

**Table 5 Reconciliation of RCMPSA Normal Cost**  
 (% of pensionable payroll)

For plan year 2000	22.11
Expected normal cost change <sup>1</sup>	(1.58)
Experience gains and losses	
Demographic experience	(0.10)
Economic experience	0.07
Changes in assumptions	
Pensionable retirements	(0.14)
Proportion with spouse at death	(0.05)
Seniority and promotional	0.22
Economic assumptions <sup>2</sup>	(0.76)
Minor items	0.05
Changes in methodology	(0.02)
Plan amendment (two-year vesting)	0.37
For plan year 2003	20.17

<sup>1</sup> The normal cost for 2000 reflected the projected yields on the Account, which were on average lower than the projected Pension Fund yields used to determine the normal costs for plan year 2001 onward. The difference in the projected yields caused the expected normal cost change to be negative rather than positive.

<sup>2</sup> As described in section II-B.7 and Appendix 7, the revision of all economic assumptions caused the normal cost to decrease by 0.76%.

## 2. Normal Cost by Type of Contributor

The RCMPSA normal cost is the weighted average of the separate normal costs for Regular Members and Civilian Members. For example in the 2003 plan year the overall plan normal cost of 20.17% of pensionable payroll is the composite of 20.40% for Regular Members and 18.47% for Civilian Members. The difference in normal costs is chiefly attributable to the more advantageous early retirement provisions available only to Regular Members.

## 3. Projection of Normal Costs

The following RCMPSA normal costs are expressed as a dollar amount as well as a percentage of the projected pensionable payroll in each given plan year.

Plan Year	Percentage	Millions of Dollars
2003	20.17	237.2
2004	20.22	242.7
2005	20.22	247.7
2006	20.19	253.1
2007	20.11	258.4
2012	19.69	298.3
2017	19.46	363.2

## 4. Allocation of Normal Costs

The foregoing projected normal costs are borne jointly by the contributors and the government. The member contribution rates are known with certainty only to 31 December 2003; beginning in calendar year 2004, the member contribution rates can be set as necessary by the Treasury Board subject to limitations (see Appendix 2). For projection purposes, the current member contribution rates of 4% up to the Year's Maximum Pensionable Earnings (YMPE) and 7.5% of salary above the YMPE were used.

Plan Year	Government (%)	Members (%)	Ratio
2003	14.77	5.40	2.74
2004	14.82	5.40	2.74
2005	14.83	5.39	2.75

## 5. Administrative Expenses

Based upon the assumptions described in Appendix 7, the Fund administrative expenses (included in the normal costs shown above) are estimated to be \$250,000 for plan year 2003, increasing to \$330,000 and \$420,000 for plan years 2004 and 2005, respectively.

## 6. Contributions for Prior Service Elections

Based upon the valuation data and the assumptions described in sections B and C of Appendix 7, member and government contributions for RCMPSA prior service elections were estimated as follows.

**Table 6 Estimated Contributions for Prior Service**  
(Dollars)

Plan Year	Superannuation Account		Pension Fund	
	Member	Government	Member	Government
2003	1,220,000	1,220,000	250,000	670,000
2004	1,170,000	1,170,000	370,000	1,020,000
2005	1,130,000	1,130,000	500,000	1,360,000

## 7. Special Payments

Based upon the Pension fund yields described in Appendix 7, the \$5.7 million Pension Fund actuarial deficit could be amortized over the expected average remaining service lifetime (EARSL) of the contributors in 13 equal annual instalments of \$700,000 beginning on 31 March 2004.



### E. Sensitivity to Variations in Key Assumptions

The results below measure the effect on the plan year 2003 normal cost and actuarial surplus for the RCMPSA if the key economic assumptions are varied by one percentage point per annum from plan year 2003 onward.

Assumption(s) Varied	Normal Cost		Superannuation Account		Pension Fund	
	2003 (%)	Effect (%)	Actuarial Surplus (\$ millions)	Effect (\$ millions)	Actuarial Surplus (\$ millions)	Effect (\$ millions)
None (i.e. current basis)	20.17	None	1,252	None	(6)	None
Investment yield						
- if 1% higher	16.36	(3.81)	2,468	1,216	82	88
- if 1% lower	25.31	5.14	(316)	(1,568)	(124)	(118)
Inflation						
- if 1% higher	22.93	2.76	57	(1,195)	(71)	(65)
- if 1% lower	17.94	(2.23)	2,222	970	47	53
Salary increases						
- if 1% higher	22.13	1.96	1,012	(240)	(47)	(41)
- if 1% lower	18.46	(1.71)	1,468	216	30	36
Inflation and salaries						
- if both 1% higher	25.16	4.99	(219)	(1,471)	(118)	(112)
- if both 1% lower	16.43	(3.74)	2,412	1,160	79	85
Investment yield, inflation and salaries						
- if all 1% higher	20.09	(0.08)	1,322	70	(2)	4
- if all 1% lower	20.28	0.11	1,178	(74)	(11)	(5)

The foregoing estimates indicate the degree to which the RCMPSA valuation results depend on some of the key assumptions. The differences between the results above and those shown in the valuation can also serve as a basis for approximating the effect of other numerical variations in one of the key assumptions, to the extent that such effects are indeed linear.

## F. RCA Valuation Results

The previous valuation results for the RCA portion of the RCMP pension plan were shown in the report on the Retirement Compensation Arrangements Account as at 31 December 1998. Beginning with this valuation, the RCA valuation results are shown in the same report as the RCMPSA valuation results.

The normal costs, assets and going-concern liabilities presented in this section were computed using the data, methodology and assumptions described in Appendix 8. The solvency liabilities were computed using the valuation methodology and assumptions described in Appendix 9.

### 1. RCA Going-Concern Valuation Results

**Table 7 RCA Balance Sheet**  
 as at 31 March 2002 (\$ millions)

Assets	
RCA Account	7.5
Refundable tax	3.3
<i>Total Assets</i>	10.8
Actuarial liabilities	
Pensionable earnings over the tax limit	9.1
Survivor allowance	3.5
<i>Total Liabilities</i>	12.6
Actuarial surplus/(deficit)	(1.8)

Since the last RCA valuation, the actuarial deficit has decreased by \$16.3 million to only \$1.8 million as at 31 March 2002. The decrease in the actuarial deficit is mainly the result of the 2003 Federal Budget raising the maximum annual pension accrual in a registered pension plan from the current \$1,722 to \$1,833 for calendar year 2004 and to \$2,000 for calendar year 2005.

In plan year 2003, the government made special payments in excess of the actuarial deficit of \$1.8 million as at 31 March 2002. No further special payments are required.

### 2. Government RCA Normal Costs

Plan Year	Percentage of Pensionable Payroll	Millions of Dollars
2003	0.11	1.3
2004	0.11	1.4
2005	0.12	1.5

Since the last RCA valuation as at 31 December 1998, the projected government normal cost for plan year 2003 has decreased by 0.35% to only 0.11%. To a large

extent, this significant decrease is attributable to the increases in the maximum annual pension accrual in a registered pension plan that improved the RCA balance sheet greatly (see foregoing).

### **3. Solvency Valuation Results**

The estimated value of the solvency liabilities of \$15.6 million exceeds the book value of the assets of \$10.8 million. The solvency actuarial deficit is \$4.8 million and the solvency ratio is 69%.

### III. Actuarial Opinion

In our opinion, considering that this report was prepared pursuant to the *Public Pensions Reporting Act*,

- the valuation input data on which it is based are sufficient and reliable;
- the assumptions that have been used are, in aggregate, appropriate; and
- the methodology employed is appropriate.

Based on the results of this valuation, we hereby certify that, as at 31 March 2002, the total government cost for the following three years is as follows:

**Table 8 Estimated Government Cost**

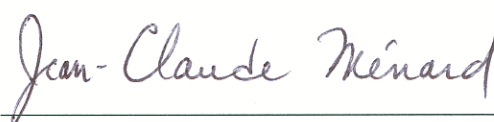
Plan Year	Normal Cost		Other Contributions <sup>1</sup> (\$ millions)	Total Cost	
	RCMPSA (\$ millions)	RCA (\$ millions)		(\$ millions)	(% of pensionable payroll)
2003	173.7	1.3	1.9	176.9	15.04
2004	177.9	1.4	2.2	181.5	15.12
2005	181.6	1.5	3.2	186.3	15.21

- If the plan were wound up on the valuation date, the value of the Superannuation Account assets would be greater than the Superannuation Account liabilities, the value of the Pension Fund assets would be less than the Pension Fund liabilities and the value of the RCA Account assets would be less than the RCA Account liabilities.

This report has been prepared, and our opinions given, in accordance with accepted actuarial practice, and particularly with the Canadian Institute of Actuaries' Consolidated Standards of Practice.



Mario Mercier  
Actuary  
Office of the Chief Actuary  
Fellow of the Canadian Institute of Actuaries



Jean-Claude Ménard  
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Office of the Chief Actuary  
Fellow of the Canadian Institute of Actuaries

Ottawa, Canada  
4 September 2003

<sup>1</sup> Includes government contributions for prior service and RCMP SA special payments. Fund administrative expenses are included in the normal cost.

## APPENDICES

### Appendix 1 – Developments Occurring After Valuation Date

#### A. Vesting and Portability

The previous valuation report was based on the plan provisions as they stood after the enactment of Bill C-71 on 17 June 1999 and Bill C-78 on 14 September 1999. Plan amendments authorized by Bill C-78 are expected to come into force in plan year 2004. They are appropriately taken into account in the determination of the accrued liabilities and the normal costs. They are described below.

##### 1. Pensionable Rights After Two Years

Pensionable rights, which previously applied after completion of at least 10 years of pensionable service (5 years for Civilian Members), now apply after at least two years of service.

##### 2. Portability of Pension Benefits after Termination

Regular Members who terminate under age 60 (50 for Civilian Members) and who are eligible for a deferred annuity may elect to transfer the present value of their benefits, determined subject to the regulations. The commuted value may be transferred to a locked-in RRSP of the prescribed kind, to another pension plan registered under the Income Tax Act, or to a financial institution for the purchase of an immediate or deferred annuity of the prescribed kind.

#### B. Pension Fund Rate of Return for Plan Year 2003

Financial markets have gone through difficult times lately and the actual Pension Fund rate of return (-12.5%, based on the method described in Appendix 4-B) for plan year 2003 was less than the 2003 assumed rate of return of 6.5% for the Pension fund. The 2003 investment returns were not taken into account; the long-term real rate of return assumed in this valuation is not influenced by the event of a single year unless a fundamental change in the investment environment is identified. Emerging experience, differing from the assumptions, will result in gains or losses to be revealed in the next valuation.

## Appendix 2 – Summary of Plan Provisions

Pensions for members of the Royal Canadian Mounted Police (“the Force”) were provided under the *Royal Canadian Mounted Police Act* until the *Royal Canadian Mounted Police Pension Continuation Act* and the *Royal Canadian Mounted Police Superannuation Act* (RCMPSA) were enacted in 1959. Benefits are also provided to members of the Force under the *Special Retirement Arrangements Act*. Benefits are modified if the *Pension Benefits Division Act* is applicable.

The current plan provisions are summarized in this appendix without distinguishing between the benefits provided under the RCMPSA, which is a registered pension plan under the Income Tax Act, and those provided under retirement compensation arrangements, which differ from registered pension plans only in that taxation of contributions and investment earnings is current rather than deferred. The portion of the plan benefits in excess of the *Income Tax Act* limits for registered pension plans is provided under the retirement compensation arrangements described in Appendix 3.

The summary also includes the improved vesting provisions and new portability options expected to come into force at the beginning of plan year 2004.

The legislation shall prevail if there is a discrepancy between it and this summary.

### A. Membership

Membership in the plan is compulsory for all members of the Force regardless of length of service. Continued membership in the plan became optional for members of the Force who transferred to the Canadian Security Intelligence Service when it was established in 1984.

### B. Contributions

#### 1. Members

During the first 35 years of pensionable service, members contribute<sup>1</sup> 4% of pensionable earnings up to the YMPE and 7.5% of salary above it. After 35 years of pensionable service, members contribute only 1% of pensionable earnings.

#### 2. Government

##### a) Current Service

The government determines its normal monthly contribution as that amount, which when combined with the required contributions by contributors in respect of current service, is sufficient to cover the cost, as estimated by the President of the Treasury Board, of all future benefits that have accrued in respect of pensionable service during that month.

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<sup>1</sup> Bill C-78, which received Royal Assent on 14 September 1999, gives the government the authority to modify member contribution rates from 1 January 2004 onward, subject to limitations.

**b) Elected Prior Service**

The government matches member contributions made to the Superannuation Account for prior service elections. Government credits to the Pension Fund in respect of elected prior service are as described for current service.

**c) Fund Administrative Expenses**

The government contributes the necessary amount to cover the administrative expenses incurred by the Fund.

**d) Actuarial Surpluses**

Bill C-78, which received Royal Assent on 14 September 1999, gives the government the authority to:

- debit actuarial surpluses from the Superannuation Account subject to limitations, and
- deal with any actuarial surpluses, subject to limitations, in the Pension Fund as they occur, either by reducing employee and/or employer contributions, by making withdrawals, or by modifying benefits.

**e) Unfunded Liability**

If an unfunded actuarial liability is identified through a triennial statutory actuarial report, the Superannuation Account and/or the Pension Fund are to be credited with such annual amounts that in the opinion of the President of the Treasury Board will fully amortize the actuarial deficit over a period not exceeding 15 years.

**C. Summary Description of Benefits**

The RCMP pension plan mainly aims at providing an employment earnings-related lifetime retirement pension to the eligible members of the RCMP. The plan also provides benefits to members in case of disability and to the spouse and children in case of death.

Subject to integration with the pensions paid by the Canada Pension Plan (CPP), the initial rate of retirement pension is equal to 2% of the highest average of annual pensionable earnings over any period of five consecutive years, multiplied by the number of years of pensionable service not exceeding 35. Once in pay, the pension is indexed annually with the Consumer Price Index. Such indexation also applies to deferred pensions during the deferral period.

Entitlement to benefits depends on either service in the Force or pensionable service, as defined in Notes 3 and 4 of section D below.

Detailed notes on the following overview are provided in section D.

## 1. Regular Members

Type of Termination	Service in the Force <sup>1</sup>	Benefit
Retirement because of age (Note 0)	Under 2 years	Greater of: <ul style="list-style-type: none"> <li>• return of contributions (Note 6), or</li> <li>• cash termination allowance (Note 7)</li> </ul>
	2 or more years	Immediate annuity (Note 8)
Compulsory retirement to promote economy or efficiency in the Force	Under 2 years	Return of contributions
	2 to 19 years	Choice of: <ul style="list-style-type: none"> <li>• return of contributions</li> <li>• deferred annuity (Note 9), or</li> <li>• reduced immediate annuity (Note 11)</li> </ul>
	20 or more years	Immediate annuity
Compulsory retirement because of misconduct	Any period	At the discretion of the Treasury Board (Note 12)
Withdrawal	Under 2 years	Return of contributions
	2 to 19 years	Choice of: <ul style="list-style-type: none"> <li>• return of contributions, or</li> <li>• deferred annuity, or</li> <li>• transfer value if under age 60 (Note 10)</li> </ul>
Voluntary retirement	20 years to exactly 24 years	Annual allowance (Note 13)
	24 years and at least one day	Immediate annuity
Type of Termination	Pensionable Service	Benefit
Compulsory retirement because of disability	Under 2 years	Greater of: <ul style="list-style-type: none"> <li>• return of contributions, or</li> <li>• cash termination allowance</li> </ul>
	2 or more years	Immediate annuity
Death leaving no eligible survivor	Under 2 years	Return of contributions to nominated beneficiary, otherwise to estate
	2 or more years	Minimum death benefit (Note 16)
Death leaving eligible survivor(s) (Notes 14 and 15)	Under 2 years	Greater of: <ul style="list-style-type: none"> <li>• return of contributions, or</li> <li>• one month of pay per year of pensionable service</li> </ul>
	2 or more years	Annual allowance to eligible survivor(s) (Note 18)

<sup>1</sup> Regardless of years of service in the Force, the benefit is only a return of contributions if pensionable service is less than two years.



## 2. Civilian Members

Type of Termination	Pensionable Service	Benefit
Voluntary retirement at age 60 or over	Under 2 years	Return of contributions (Note 6)
	2 or more years	Immediate annuity (Note 8)
Compulsory retirement because of misconduct	Under 2 years	Return of contributions
	2 or more years	At the discretion of the Treasury Board (Note 12)
Withdrawal	Under 2 years	Return of contributions
	2 to 29 years	Choice of <ul style="list-style-type: none"> <li>• return of contributions (Note 6),</li> <li>• deferred annuity (Note 9), or</li> <li>• transfer value if under age 50 (Note 10), or</li> <li>• annual allowance (Note 19)</li> </ul>
Voluntary retirement before age 60	30 to 34 years	As for 2 to 29 years Immediate annuity
	<ul style="list-style-type: none"> <li>• under age 55</li> <li>• age 55 or over</li> </ul>	
	35 or more years	Immediate annuity
Compulsory retirement because of disability	Under 2 years	Greater of: <ul style="list-style-type: none"> <li>• return of contributions, or</li> <li>• cash termination allowance (Note 7)</li> </ul>
	2 or more years	Immediate annuity
Death leaving no eligible survivor	Under 2 years	Return of contributions to nominated beneficiary, otherwise to estate
	2 or more years	Minimum death benefit (Note 16)
Death leaving eligible survivor(s) (Notes 14 and 15)	Under 2 years	Greater of: <ul style="list-style-type: none"> <li>• return of contributions, or</li> <li>• one month of pay per year of pensionable service</li> </ul>
	2 or more years	Annual allowance to eligible survivor(s) (Note 18)

## 3. Pensioners

Type of Termination	Benefit
Disability of deferred pensioners before age 60	Immediate annuity while disabled
Death leaving no eligible survivor	Minimum death benefit (Note 16)
Death leaving eligible survivor(s)	Annual allowance to eligible survivor(s) (Note 18)

## **D. Explanatory Notes**

### **1. Pensionable Earnings**

*Pensionable earnings* mean the annual employment earnings (excluding overtime but including pensionable allowances such as bilingual bonuses) of a contributor.

*Pensionable payroll* means the aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

### **2. Indexation**

#### **a) Level of Indexation Adjustments**

All immediate and deferred annuities (pensions and allowances) are adjusted every January to the extent warranted by the increase, as at 30 September of the previous year, in the 12-month average Consumer Price Index relative to the corresponding figure one year earlier. If the indicated adjustment is negative, annuities are not decreased for that year; however, the next following adjustment is diminished accordingly.

#### **b) First Indexation Adjustment**

Indexation adjustments accrue from the end of the month in which employment terminates. The first annual adjustment following termination of employment is prorated accordingly.

#### **c) Commencement of Indexation Payments**

The indexation portion of a retirement, disability or survivor pension normally starts being paid when the pension is put into pay. However, regarding a Regular Member retirement pension, indexation payments start only when the pensioner is either

- at least 55 years old, provided the sum of age and pensionable service is at least 85 years; or
- at least 60 years old.

### **3. Service in the Force**

*Service in the Force* normally includes any period during which a person made required contributions to the Plan, regardless of whether such contributions were subsequently withdrawn. As well, it includes any period of service as a member of any other police force subsequently taken over by the Force.

### **4. Pensionable Service**

*Pensionable service* includes any period of service in the Force in respect of which a contributor either (1) made contributions that remain in the plan or (2) elected to contribute. It also includes any period of prior service with another employer in respect of which a contributor has elected to contribute in accordance with the provisions of the plan.

## 5. Retirement Because of Age

*Retirement because of age* means ceasing to be a Regular Member on or after reaching age 60, for reason other than disability or misconduct. Regular Members who joined the Force before July 1988 may elect to retain the prescribed retirement ages (56 for ranks up to corporal, 57 for sergeants, and 58 for staff sergeants and majors) in effect at that time.

## 6. Return of Contributions

*Return of contributions* means the payment of an amount equal to the accumulated current and prior service contributions paid or transferred by the contributor into the plan. Interest is credited quarterly in accordance with the investment return on the RCMP Pension Fund.

## 7. 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 the date of termination, multiplied by the number of years of pensionable service to the credit of the contributor, minus the total reduction in previous contributions to the plan by virtue of its integration with the CPP.

## 8. Immediate Annuity

*Immediate annuity* means an unreduced pension that becomes payable immediately upon a pensionable retirement or pensionable disability. The annual amount is equal to 2% of the highest average of annual pensionable earnings of the contributor over any period of five<sup>1</sup> consecutive years, multiplied by the number of years of pensionable service not exceeding 35. For contributors with periods of part-time pensionable service, earnings used in the five-year average are based on a full 37.5-hour workweek but the resulting average is multiplied by the proportion of a full workweek averaged by the contributor over the entire period of pensionable service.

When a pensioner attains age 65 or becomes entitled to a disability pension from the CPP, the annual amount of pension is reduced by 0.7% of the *indexed CPP annual pensionable earnings*<sup>2</sup> (or, if lesser, the indexed five-year<sup>1</sup> pensionable earnings average on which the immediate annuity is based), multiplied by the *years of CPP pensionable service*<sup>3</sup>.

Annuities are payable in equal monthly instalments in arrears until the end of the month in which the pensioner dies or when the disabled pensioner recovers from disability. Upon the death of the pensioner, either a survivor allowance (Note 18) or a residual death benefit (Note 17) may be payable.

<sup>1</sup> If the number of years of pensionable service is less than five, then the averaging is over the entire period of pensionable service.

<sup>2</sup> *Indexed CPP annual pensionable earnings* means the average of the YMPE, as defined in the CPP, over the five calendar years leading up to and including the one in which pensionable service terminated, increased by indexation proportionate to that accrued in respect of the immediate annuity.

<sup>3</sup> *Years of CPP pensionable service* mean the number of years of RCMPSA pensionable service after 1965 or after attaining age 18, whichever is later, but not exceeding 35.

## 9. Deferred Annuity

*Deferred annuity* means an annuity that normally becomes payable to a former contributor who reaches age 60. The annual payment is determined as for an immediate annuity (Note 8) but is also adjusted to reflect the indexation (Note 2) from date of termination to the commencement of benefit payments.

The deferred annuity becomes an immediate annuity during any period of disability beginning before age 60. If the disability ceases before age 60, the immediate annuity reverts to the original deferred annuity unless the pensioner elects an annual allowance (Notes 13 and 19) that is the prescribed actuarial equivalent to the deferred annuity.

## 10. Transfer Value

Regular Members and Civilian Members who, at their date of termination of pensionable service, are under age 60 and 50, respectively, and who are eligible for a deferred annuity may elect to transfer the commuted value of their benefits, determined in accordance with the regulations, to

- a locked-in Registered Retirement Savings Plan of the prescribed kind; or
- another pension plan registered under the *Income Tax Act*; or
- a financial institution for the purchase of a locked-in immediate or deferred annuity of the prescribed kind.

## 11. Reduced Immediate Annuity

*Reduced immediate annuity* means an immediate annuity for which the annual amount of annuity determined as described in Note 8 is reduced until age 65 by 5% for each full year, not exceeding six, by which the period of service in the Force is less than 20 years. This type of annuity may be chosen by a Regular Member who has completed between 10 and 20 years of service in the Force upon being compulsorily retired

- on account of a reduction in the Force, or
- to promote economy or efficiency (only at the discretion of the Treasury Board).

## 12. Retirement Because of Misconduct

Upon compulsory retirement because of misconduct, a contributor is entitled to

- a return of contributions, or
- a greater benefit as specified by the Treasury Board but not exceeding that available in the absence of misconduct.

## 13. Annual Allowance for Regular Members

*Annual allowance* means, for a Regular Member, an immediate annuity reduced by 5% for each full year by which

- the period of service in the Force is less than 25 years, or
- the age at retirement is less than the applicable retirement age (as defined in item 5), whichever is the lesser.

#### **14. Eligible Surviving Spouse**

*Eligible surviving spouse* means the surviving spouse (includes a common-law or same-sex partner recognized under the plan) of a contributor or pensioner except if:

- the contributor or pensioner died within one year of commencement of the spousal union, unless the Treasury Board is satisfied that the health of the contributor or pensioner at the time of such commencement justified an expectation of surviving for at least one year;
- the pensioner married at age 60 or over, unless after such marriage the pensioner either:
  - became a contributor again, or
  - made an optional survivor benefit election within 12 months following marriage to accept a reduced pension so that the new spouse would be eligible for a survivor benefit. This reduction is reversed if and when the new spouse predeceases the pensioner or the spousal union is terminated for reason other than death; or
- the pensioner is a female who retired before 20 December 1975 and did not make an optional survivor benefit election within the one-year period ending 6 May 1995.

#### **15. Eligible Surviving Children**

*Eligible surviving children* include all children of the contributor or pensioner who are under age 18, and any child of the contributor or pensioner who is 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 or pensioner died, whichever occurred later.

#### **16. Minimum Death Benefit**

If a contributor or a pensioner dies leaving no eligible survivor, the lump sum normally paid is the excess of five times the annual amount of the immediate annuity to which the contributor would have been entitled, or the pensioner was entitled, at the time of death, over the pension payments, if any, already received. Indexation adjustments are excluded from these calculations.

#### **17. Residual Death Benefit**

The same formula described in Note 16 is used to determine the residual death benefit, which is the lump sum payable upon the death of an eligible survivor but also subtracting all amounts (excluding indexation adjustments) already paid to the survivor.

#### **18. Annual Allowance for Eligible Survivor(s)**

*Annual allowance* means, for the eligible surviving spouse and children of a contributor or pensioner, an annuity that becomes payable immediately upon the death of that individual. The amount of the allowance is determined with reference to a *basic allowance* equal to 1% of the highest average of annual pensionable earnings of the contributor over five consecutive years, multiplied by the number of years of pensionable service not exceeding 35.

The annual allowance for a spouse is equal to the basic allowance unless the spouse became eligible as a result of an optional survivor benefit election, in which case it is equal to the percentage of the basic allowance specified by the pensioner making the election.

The annual allowance for an eligible surviving child is equal to 20% of the basic allowance, subject to a reduction if there are more than four eligible surviving children in the same family. The annuity otherwise payable to an eligible surviving child is doubled if the child is an orphan.

Survivor annual allowances are not integrated with the CPP and are payable in equal monthly instalments in arrears until the end of the month in which the survivor dies or otherwise loses eligibility. If applicable, a residual benefit (Note 17) is payable to the estate upon the death of the last survivor.

## **19. Annual Allowance for Civilian Members**

*Annual allowance* means, for a Civilian Member, an annuity payable immediately on retirement or upon attaining age 50, if later. The amount of the allowance is equal to the amount of the deferred annuity to which the Civilian Member would otherwise be entitled, reduced by 5% of such annuity multiplied by the difference between 60 and the age when the allowance becomes payable. However, if the Civilian Member is at least 50 years old, and has at least 25 years of pensionable service, then the difference is reduced to the greater of

- 55 minus the age, and
- 30 minus the number of years of pensionable service.

The Treasury Board can waive all or part of the reduction for Civilian Members who are involuntarily retired at ages 55 and over with at least ten years of service in the Force.

If a former Civilian Member entitled to an annual allowance commencing at age 50 becomes disabled before then, the entitlement changes to an immediate annuity (Note 8). If disability ceases before age 60, then the entitlement changes to a deferred annuity (Note 9) unless the pensioner elects an annual allowance that is the prescribed actuarial equivalent to the deferred annuity.

## **20. Division of Pension with Former Spouse**

In accordance with the *Pension Benefits Division Act*, upon the breakdown of a spousal union (including common-law), a lump sum can be transferred by court order or by mutual consent from the plan assets to the credit of the former spouse of a contributor or pensioner. The maximum transferable amount is half the value, calculated as at the transfer date, of the retirement pension accrued by the contributor or pensioner during the period of cohabitation. If the member's benefits are not vested, the maximum transferable amount corresponds to half the member's contributions made during the period subject to division, accumulated with interest at the rate applicable on a refund of contributions. The benefits of the contributor or pensioner are then reduced accordingly.

## Appendix 3 – RCA Benefit Provisions

This Appendix describes the RCMP pension plan benefits funded through retirement compensation accounts (RCAs) rather than through the registered RCMPSPA plan. As described in Appendix 2, RCAs are pension plans not subject to the benefit limitations of registered pension plans because they are less tax-advantaged.

### A. Waiver of Pension Reduction on Involuntary Early Retirement

The Treasury Board may waive all or part of the annual allowance reduction for members involuntarily retired at ages 55 and over with at least 10 years of service as a Civilian Member of the RCMP. These members would have otherwise been subject to a reduction in accordance with Note 19 of section D of Appendix 2.

To be in conformance with the Income Tax Regulations (ITR) for registered pension plans, the reduction must be at least equal to 3% times the lesser of:

- 60 minus the age when the allowance becomes payable,
- 30 minus the number of years of pensionable service, and
- 80 minus the total of the member's age and years of pensionable service, all divided by 2.

If the pension payable after the full or partial waiver is granted exceeds the ITR maximum described above, then the excess is payable from the RCA.

### B. Annual Allowance for Eligible Survivors

If the annual allowance for eligible survivors described in Note 18 of section D of Appendix 2 exceeds the tax-related limits described hereafter for registered plans, then the excess in respect of service only from 1 January 1992 is payable from the RCA.

#### 1. Tax-related limits on preretirement survivor benefits

The total of all preretirement survivor pensions payable in respect of a deceased member may not exceed the member's projected lifetime retirement benefit and the amount of spouse allowance may not exceed two-thirds of the projected lifetime retirement benefit.

The member's projected lifetime retirement benefit is the greater of:

- a) the deceased member's accrued pension reduced by the CPP offset; and
- b) the lesser of:
  - i) the member's projected retirement benefit at age 65 based on current salary history, and
  - ii) 1.5 times the YMPE in effect in the year of the member's death.

#### 2. Tax-related limits on postretirement survivor benefits

The amount of spouse allowance provided under the plan is limited in any year to a maximum of two-thirds the retirement benefit that would have been payable to the member in that year.

### **C. Minimum Death Benefit**

If the minimum death benefit lump sum described in Note 16 of section D of Appendix 2 exceeds the tax-related limits described hereafter, then the excess is payable from the RCA.

#### **1. Tax-related limits on preretirement minimum death benefits**

The amount of preretirement death benefit provided under the registered plans is limited to the greater of the member's contributions with interest and the present value of the member's accrued benefits on the day prior to death.

#### **2. Tax-related limits on postretirement minimum death benefits**

If the member has no eligible dependants at retirement, then the minimum death benefit is limited to the member's contributions with interest.

### **D. Elective Service**

Where the obligation to credit pre-1990 elective service was entered into after 7 June 1990, the amount of lifetime retirement benefit that can be provided under a registered pension plan for each year of such elective service is limited to two-thirds of the defined benefit limit (\$1,722.22 in calendar year 2002) for the year in which the lifetime retirement benefits commence to be paid.

For years subsequent to the commencement year of lifetime retirement benefits, this amount can be adjusted to reflect increases in the Consumer Price Index.

This benefit limit does not apply if the member was restricted to the lower Registered Retirement Savings Plan contribution deduction limit in the year being credited as a result of membership in a registered pension plan or deferred profit sharing plan. It also does not apply if the pre-1990 year was credited before 8 June 1990 as past service in any registered pension plan.

### **E. Excess Pensionable Earnings**

From 23 February 1995 onward, the highest average of pensionable earnings under the RCMPSPA is subject to a prescribed yearly maximum. Because the RCMPSPA is integrated with the pensions paid by the Canada Pension Plan, the prescribed maximum is derived from both the maximum annual pension benefit (\$1,722.22 for calendar year 2002) payable from a registered defined benefit pension plan and the YMPE. The maximum was \$99,800 for the 2002 calendar year.

To the extent that a member's average earnings at retirement exceed the prescribed yearly maximum, the corresponding excess pension is paid from the RCA.



## Appendix 4 – Plan Assets and Rates of Return

### A. Plan Assets

#### 1. RCMP Superannuation Account

RCMPSA benefits earned up to 31 March 2000 are financed entirely through the RCMP Superannuation Account, which forms part of the Public Accounts of Canada.

The Account was credited with all RCMPSA contributions made by members and the government up to 31 March 2000, as well as with prior service contributions for elections made prior to 1 April 2000 and leave without pay contributions for periods before 1 April 2000 but remitted after that date. It is charged with both the benefit payments made in respect of service earned under the Account and the allocated portion of the plan administrative expenses.

The Account is credited with investment earnings as though net cash flows were invested quarterly in 20-year Government of Canada bonds issued at prescribed interest rates and held to maturity. No formal debt instrument is issued to the Account by the government in recognition of the amounts therein. Investment earnings are credited every three months on the basis of the average yield for the same period on the combined Superannuation Accounts of the Public Service, Canadian Forces and RCMP pension plans.

**Table 9 Reconciliation<sup>1</sup> of Balances in Superannuation Account**  
(\$ millions)

Plan year	2000	2001	2002	2000-2002
Public Accounts opening balance	9,852.6	10,712.3	9,489.3	9,852.6
INCOME				
Investment earnings	912.7	952.7	819.9	2,685.3
Employer contributions	158.5	11.7	3.4	173.6
Employee contributions	53.6	3.4	2.2	59.2
Transfers received	0.5	0.5	0.7	1.6
Actuarial liability adjustments	-	(1,900.0)	(114.8)	(2,014.8)
<i>Subtotal</i>	1,125.3	(931.7)	711.3	904.9
EXPENDITURES				
Annuities	253.7	274.4	297.0	825.1
Pension divisions	9.6	12.1	8.1	29.7
Return of contributions and cash allowances	2.2	2.3	1.5	6.0
Transfers sent	0.1	0.1	0.1	0.2
Administrative expenses	-	2.4	9.4	11.8
<i>Subtotal</i>	265.6	291.3	316.0	872.9
Public Accounts closing balance	10,712.3	9,489.3	9,884.6	9,884.6

<sup>1</sup> Balances and subtotals in this table may differ from the underlying figures due to rounding.

The foregoing table shows the reconciliation of the assets in the RCMP Superannuation Account between the last valuation date and the current valuation date. Since the last valuation, the Account balance has grown by \$32 million (a 0.3% increase) to reach \$9.9 billion as at 31 March 2002.

## 2. RCMP Pension Fund

Since 1 April 2000 RCMPSPA contributions (except for prior service elections made prior to 1 April 2000) have been credited to the RCMP Pension Fund. The Fund is invested in the financial markets with a view to achieving maximum rates of return without undue risk.

The Fund has been credited with all RCMPSPA contributions since 1 April 2000, as well as with prior service contributions in respect of elections made after 31 March 2000 and leave without pay contributions for periods after 31 March 2000. The Fund is also credited with the net investment returns generated by its capital assets. It is charged with both the benefit payments made in respect of service earned under the Fund and the allocated portion of the plan administrative expenses.

**Table 10 Reconciliation<sup>1</sup> of Balances in Pension Fund**  
(\$ millions)

Plan year	2001	2002	2001-2002
Opening balance	-	197.3	-
INCOME			
Investment earnings <sup>2</sup>	(17.7)	10.5	(7.2)
Employer contributions	161.3	178.9	340.2
Employee contributions	54.0	60.1	114.1
<i>Subtotal</i>	197.6	249.6	447.1
EXPENDITURES			
Annuities	0.1	0.7	0.8
Return of contributions and cash allowances	-	0.2	0.3
Administrative expenses <sup>3</sup>	0.1	0.3	0.4
<i>Subtotal</i>	0.2	1.3	1.5
Closing balance	197.3	445.7	445.7

The above table shows the reconciliation of the assets (market value) in the RCMP Pension Fund from its inception to the current valuation date.

## B. Rates of Return

The following RCMPSPA rates of return by plan year were calculated using the foregoing entries. The Account yields are based on book values because the notional bonds are considered to be held to maturity. The Fund yields are based on market values to measure its actual performance. The results were computed using the dollar-weighted approach,

<sup>1</sup> Balances and subtotals in this table may differ from the underlying figures due to rounding.

<sup>2</sup> Net of investment management and administrative expenses charged by the Public Sector Pension Investment Board.

<sup>3</sup> These are expenses incurred for the administration of the plan only.

assuming a uniform distribution of cash flows during the plan year (except for actuarial liability adjustments, which occurred on 31 March) by imputing to them one-half year of interest.

Plan Year	Superannuation Account	Pension Fund
2000	9.29%	n/a
2001	9.01%	(15.78%)
2002	8.78%	3.34%

**C. Sources of Asset Data**

The Account and Fund entries shown in section A above were taken from the Public Accounts of Canada. In accordance with section 8 of the *Public Pensions Reporting Act*, the Office of the Comptroller General of Canada provided a certification of the assets of the plan as at 31 March 2002.

## Appendix 5 – Membership Data

### A. Sources and Validation of Membership Data

The individual data in respect of contributors, pensioners, and eligible survivors were provided as at 31 March 2002.

The Classification and Compensation Branch of the Royal Canadian Mounted Police provided relevant valuation input data on contributors while the RCMP Services Section of Public Works and Government Services Canada did so in respect of pensioners and survivors.

We performed certain tests of internal consistency, as well as tests of consistency with the data used in the previous valuation, with respect to membership reconciliation, basic information (date of birth, date of hire, date of termination, sex, etc), pensionable service, salary levels, and pensions to retirees and survivors. In particular, all pensions in payment were verified by comparing the pension of each pensioner and survivor with the actual amount paid in March 2002, as provided by the RCMP. We also compared the basic pensionable salary of each contributor in March 2002 with the actual salary received. Based on the omissions and discrepancies identified by these and other tests, appropriate adjustments were made to the basic data after consulting with the data providers.

### B. Reconciliation of Membership

The following table, derived from the basic data, shows the reconciliation of contributors, pensioners, and survivors during the period from April 1998 to March 2002 inclusive. Relevant statistics on contributors, pensioners and survivors are shown in Appendix 11.

**Table 11 Reconciliation of Membership**

	Contributors	Retirement Pensioners	Disability Pensioners	Surviving Spouses	Surviving Children <sup>1</sup>
As at 31 March 1998 <sup>2</sup>	17,624	7,234	501	934	229
Data corrections	26	(11)	19	12	
New members	3,184	-	-	-	
Re-engagements	16	(14)	-	-	
Nonvested terminations	(454)	-	-	-	
Pensionable disabilities	(311)	-	-	-	
Pensionable retirements	(1,872)	1,872	311	-	
Emerging survivors	-	-	-	266	
Deaths	(68)	(298)	(25)	(90)	
As at 31 March 2002	18,145	8,783	806	1,122	193

<sup>1</sup> The available data were insufficient to allow the reconciliation of the change in the population of eligible surviving children.

<sup>2</sup> The census data in the 31 March 1999 valuation were provided as at 31 March 1998 and then projected forward one year.

## Appendix 6 – RCMPSA Going-Concern Valuation Methodology

### A. Plan Assets

#### 1. Superannuation Account

The Superannuation Account assets consist essentially of the recorded balance in the Public Accounts of Canada. These assets are shown at the book value of the underlying notional bond portfolio described in Appendix 4. For consistency the liabilities are determined using the projected Account yields, shown in Appendix 7, that fully reflect the earning power of the assets.

The only other Account-related asset consists of the discounted value of future member contributions and government credits in respect of prior service elections. The discounted value of future member contributions was calculated using the projected Account yields; the government is assumed to match member contributions.

#### 2. Pension Fund

For valuation purposes, we used an adjusted market value method to determine the actuarial value of the Pension Fund assets. Under the method, the difference between all investment returns accrued during a given plan year and the expected investment returns for that year based on the previous report assumptions is spread over five years.

As a result the actuarial value of assets is a five-year smoothed market value where the appreciation of investment gains or losses is recognized at the rate of 20% per year. The value produced by this method is related to the market value of the assets, but is more stable than the market value.

The actuarial value of the assets, determined as at 31 March 2002, under the adjusted market value method is \$473.8 million. This value was determined as follows:

**Table 12 Actuarial Value of Pension Fund Assets**  
as at 31 March 2002 (\$ millions)

	Plan Year	
	2001	2002
Actual net investment return	(17.4)	11.1
Expected investment return	7.8	22.9
Investment gains (losses)	(25.2)	(11.8)
Unrecognized percentage	60%	80%
Unrecognized investment gains (losses)	(15.1)	(9.4)
Market value as at 31 March 2002		445.7
<i>Plus</i>		
Present value of future contributions for elected prior service		3.6
<i>Less</i>		
Unrecognized investment gains (losses)		(24.5)
Actuarial value as at 31 March 2002		473.8

The only other Fund-related asset consists of the discounted value of future member contributions and government credits in respect of prior service elections. The discounted value of future member contributions was calculated using the assumed yield on the Pension Fund; the government is assumed to contribute 274% of member contributions.

## **B. Normal Costs and Liabilities**

To determine the RCMPA normal costs and liabilities, the cost effect of the yearly maximum salary cap and other benefit limits under the *Income Tax Act* described in Appendix 3 are applied as an offset to the liabilities and normal costs calculated without consideration thereof. The method to calculate the offset is fully described in Appendix 8 discussing the RCA valuation methodology.

### **1. Normal Costs**

The projected accrued benefit actuarial cost method (also known as the projected unit credit method) was used to compute normal costs. Under this method the normal cost computed in respect of a given year is the sum of the value, discounted in accordance with the projected Fund yields shown in Appendix 7, of all future benefits considered to accrue in respect of that year's service, and the estimated administrative expenses to be charged to the Fund in that year. Consistent with this cost method, pensionable earnings are projected up to retirement using the assumed annual increases in average pensionable earnings (including seniority and promotional increases).

### **2. Liabilities**

#### **a) Contributors**

Consistent with the projected accrued benefit actuarial cost method employed to estimate normal costs, the liabilities in respect of contributors as at the valuation date correspond to the value, discounted in accordance with the relevant projected yields on the Account and the Fund described below and shown in Appendix 7, of all future benefits accrued as at that date in respect of all previous service.

#### **b) Pensioners and Survivors**

Consistent with accepted actuarial practice and standards, the liabilities as at the valuation date in respect of pensioners (including deferred annuitants) and survivors correspond to the value, using the relevant projected yields on the Account and the Fund described below and shown in Appendix 7, of all future benefits.

## **C. Projected Yields**

The projected yields (shown in Appendix 7) assumed in computing the present value of benefits accrued under the Superannuation Account (i.e. the Account liabilities) are the projected annual yields on the combined book value of the Superannuation Accounts of the Public Service, Canadian Forces, and RCMP pension plans.

The projected Account yields were determined by an iterative process involving the following:

- the combined notional bond portfolio of the three Accounts as at the valuation date;
- the assumed future new money interest rates (also shown in Appendix 7);
- the expected future benefits payable in respect of all pension entitlements accrued up to 31 March 2002;
- the expected future contributions for prior service elections, and
- the expected future administrative expenses,

always taking into account that each quarterly interest credit to an Account is calculated as if the principal at the beginning of a quarter remains unchanged during the quarter.

The projected yields (shown in Appendix 7) assumed in computing the present value of the benefits accrued or accruing under the Pension Fund (i.e. the Fund liabilities and the normal cost) were developed on the basis of the Fund holding a diversified mixture of assets.

#### **D. Membership Data**

For valuation purposes, individual data on each member were used.

The member data shown in Appendix 5 and in Appendix 11 were provided as at 31 March 2002. In the previous valuation, the data were provided one year earlier than the valuation date. This valuation is based on the member data as at the valuation date.

## **Appendix 7 – RCMPSA Going-Concern Actuarial Assumptions**

The plan being sponsored by the government, the likelihood of the plan being wound-up with insufficient assets is practically nonexistent; consequently all the assumptions used in this report are best-estimate assumptions, i.e. they reflect our best judgement of the future long-term experience of the plan.

### **A. Economic Assumptions**

#### **1. Key Economic Assumptions**

The following key economic assumptions are required for valuation purposes. These assumptions are generally lower than those used in the previous valuation.

##### **a) Level of Inflation**

Price increases, as measured by changes in the Consumer Price Index, tend to fluctuate from year to year. Based on historical trends, the renewed commitment of the Bank of Canada and the government to keep inflation between 1% and 3% over the next five years and judgement about the long-term outlook for inflation, an ultimate rate of price increase of 2.7% was assumed for 2014 and thereafter. Recognizing past experience, the rate of price increase is assumed at 2.2% for plan year 2003 and 2.0% for years 2004 to 2007. From 2008 the rate is then uniformly increased to its ultimate level of 2.7% in 2014. In the previous valuation the ultimate rate of price increase was assumed to be 3.0%.

##### **b) Real Increase in Average Earnings**

Salary increases consist of a combination of inflation, productivity growth (i.e. real increase in average employment earnings in excess of inflation) and seniority and promotional increase. Seniority and promotion is strongly service-based and is therefore considered to be a demographic assumption rather than an economic assumption.

The assumed ultimate productivity rate was assumed at 0.9% per annum. This is closer to the average Canadian experience of the past 50 years (1.43% per annum) than that of the past 25 years (-0.06% per annum). RCMP real increases in average earnings have averaged 0.40% over the past 15 years. Real increases in average earnings were assumed to rise gradually over a 15-year select period to reach the ultimate 0.9% per annum in plan year 2016. In the previous valuation, the ultimate productivity rate was assumed to be 1.0%.

##### **c) Real Rate of Return on Long-Term Government of Canada Bonds**

The ultimate real rate of return on long-term Government of Canada bonds was assumed at 3% per annum, based on historical trends; this is unchanged from the previous valuation.

##### **d) Real Rate of Return on Fund**

For the assets invested by the Public Sector Pension Investment Board (PSPIB), it is assumed that the real rate of return on investments will be 4.3% net of investment



expenses (the ultimate level of inflation being 2.7%). The assumed long-term real rate of return on PSPIB assets takes into account the distribution of investments by category. In the previous valuation, the ultimate real rate of return was assumed to be 4.25% (the ultimate level of inflation being 3.0%).

Note that all of the real rates of return presented in this report are actually real-return differentials, i.e. the difference between the effective annual rate of return on investments and the rate of increase in prices. This differs from the technical definition of the real rate of return, which in the case of the ultimate Fund assumption would be 4.19% (derived from 1.07/1.027) rather than 4.30%.

For the period ending December 2001, the following table was prepared based on the Canadian Institute of Actuaries Report on Canadian Economic Statistics 1924-2001.

Period of Years Ending 2001	15	25	50
Level of Inflation	2.54%	4.56%	3.91%
Real Increases in Average Earnings <sup>1</sup>	0.16%	(0.06%)	1.43%
Real Return on Long-Term Canada Bonds <sup>21</sup>	7.61%	5.64%	2.90%
Average Real Return on Diversified Portfolios <sup>21</sup>	7.30%	6.87%	4.29% <sup>2</sup>

## 2. Derived Economic Assumptions

The following assumptions were derived from the key economic assumptions:

### a) Projected Yields on Superannuation Account

These yields are required for the computation of present values of benefits to determine the Superannuation Account liabilities. The methodology used to determine the projected yields on the Account is described in Appendix 6.

### b) Projected Yields on Pension Fund

These yields are derived from the assumed future level of inflation and the real return on the Fund. These yields are required for the computation of present values of benefits to determine the Fund liabilities and the normal costs. The assumed yield of 6.3% per annum for plan year 2004 is assumed to increase gradually to 7.0% per annum by plan year 2014.

### c) Increase in the Year's Maximum Pensionable Earnings (YMPE)

The YMPE is involved in the valuation process because the plan is integrated with the Canada Pension Plan. The assumed increase in the YMPE for a given year was derived, in accordance with the *Canada Pension Plan*, to correspond to the increase in the assumed Industrial Aggregate of Average Weekly Earnings (IAAWE) over successive 12-month periods ending on 30 June. The IAAWE is deemed to include a component for seniority and promotional increases; consequently the ultimate

<sup>1</sup> These real rates are calculated after the level of inflation is removed geometrically.

<sup>2</sup> This average is over the last 40 years.

increase in the YMPE is assumed to be 0.2% higher than the corresponding increase in average pensionable earnings.

**d) Maximum Pensionable Earnings**

Because the plan is integrated with the Canada Pension Plan, the tax-related maximum pensionable earnings were derived from both the maximum annual pension accrual under a registered defined benefit plan and the YMPE. The maximum annual pension accrual of \$1,722 for calendar years 2002 and 2003 will increase to \$1,833 for 2004 and \$2,000 for 2005 in accordance with the 2003 Federal Budget; thereafter, the maximum annual pension accrual is assumed to increase in accordance with the assumed increase in the Industrial Aggregate.

**e) Increase in Pension Indexing Factor**

The year's pension indexing factor is involved in the valuation process by virtue of its role in maintaining the purchasing power of pensions. It was derived by applying the indexation formula described in Appendix 2, which relates to the assumed Consumer Price Index increases over successive 12-month periods ending on 30 September.

**f) Transfer Value Real Interest Rate**

In accordance with the Recommendations for the Computation of Transfer Values from Registered Pension Plans published by the Canadian Institute of Actuaries, the real interest rate used for the first 15 years following the computation corresponds to the new money real rate of interest for the year of computation plus 0.25%; thereafter, the real rate of interest is 3.25%.

### 3. Summary of Key and Derived Economic Assumptions

**Table 13 Economic Assumptions**  
(%)

Plan Year	Inflation		Employment Earning Increases				Interest		
	CPI Increase	Pension Indexing <sup>1</sup>	Industrial Aggregate	YMPE <sup>23</sup>	Average Pensionable Earnings <sup>23,2</sup>	Maximum Pensionable Earnings <sup>23,3</sup>	New Money Rate	Yield Projected on Account	Yield Projected on Fund
2003	2.2	1.6	2.1	2.0	2.1	0.3	5.2	8.43	6.5
2004	2.0	2.1	2.2	2.2	2.2	5.9	5.0	8.30	6.3
2005	2.0	2.0	2.3	2.3	2.3	8.1	5.0	8.06	6.3
2006	2.0	2.0	2.4	2.4	2.4	2.4	5.0	7.81	6.3
2007	2.0	2.0	2.6	2.5	2.5	2.5	5.0	7.60	6.3
2008	2.1	2.1	2.8	2.6	2.6	2.6	5.1	7.42	6.4
2009	2.2	2.2	3.0	2.8	2.7	2.8	5.2	7.21	6.5
2010	2.3	2.3	3.2	3.0	2.9	3.0	5.3	7.01	6.6
2011	2.4	2.4	3.3	3.2	3.1	3.2	5.4	6.81	6.7
2012	2.5	2.5	3.4	3.4	3.2	3.4	5.5	6.42	6.8
2013	2.6	2.6	3.5	3.5	3.3	3.5	5.6	6.23	6.9
2014	2.7	2.7	3.6	3.6	3.4	3.6	5.7	6.09	7.0
2015	2.7	2.7	3.7	3.7	3.5	3.7	5.7	5.96	7.0
2016	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.76	7.0
2017	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.62	7.0
2018	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.52	7.0
2019	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.50	7.0
2020	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.50	7.0
2021	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.47	7.0
2022	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.46	7.0
2023	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.45	7.0
2024	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.44	7.0
2025	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.47	7.0
2026	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.50	7.0
2027	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.54	7.0
2028	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.57	7.0
2029	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.60	7.0
2030	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.63	7.0
2031	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.65	7.0
2032	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.68	7.0
2033+	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.70	7.0

<sup>1</sup> Assumed to be effective as at 1 January.  
<sup>2</sup> Exclusive of seniority and promotional increases.  
<sup>3</sup> Calendar year 2002 Maximum Pensionable Earnings were \$99,800.

## B. Demographic Assumptions

Except where otherwise noted all demographic assumptions were determined from the plan's own experience, as was done in the past. Where applicable, assumptions of the previous valuation were updated to reflect the available intervaluation experience of April 1998 to March 2002. Tables 36 to 45 of Appendix 12 show the details of the demographic assumptions discussed below.

### 1. Seniority and Promotional Salary Increases

*Seniority* means length of service and *promotion* means moving to a higher rank. The seniority and promotional salary increase assumption for Regular Members was slightly increased at early durations and at durations 20 to 24. The assumption fully recognizes the Service Pay Allowance granted on every fifth service anniversary and the 4% Senior Constable Provisional Allowance granted after seven completed years of service.

The assumption for Civilian Members was completely revised. The seniority and promotional salary rates are almost double those used in the previous valuation.

### 2. New Contributors

It was assumed that the number, sex, and type of new contributors would be such that the population of each subgroup of contributors changes annually as follows:

	Plan years 2003-2005	Plan years 2006+
Male Regular Members	(1%)	1%
Female Regular Members	6%	1%
Male Civilian Members	0%	1%
Female Civilian Members	3%	1%

For each subgroup, the age distribution of new contributors was based on the distribution of actual new contributors during the 2002 plan year. The initial salary of new Civilian Members in a given age-sex cell in the 2003 plan year was assumed to be the same as the corresponding experience in the 2002 plan year. For all new Regular Members it was assumed to be in accordance with the salary schedule effective 1 January 2002. Initial salary is assumed to increase in future plan years in accordance with the assumption for average earnings increase.

### 3. Pensionable Retirement

The rates of pensionable retirement assumed for Regular Members are roughly 5% to 10% lower than assumed in the previous valuation; for Civilian Members, they are only slightly lower. Rates were extended to recognize the new earlier vesting provisions.

### 4. Disability Retirement

The disability incidence rates were significantly revised to reflect the intervaluation experience. For both Regular and Civilian Members, disability incidence rates are on average 20% higher than those used in the previous valuation.

As in the previous valuation, it was assumed that 30% of future new disability pensioners would receive a CPP disability pension, which would reduce their disability pension payable from the plan accordingly.

Rates were extended to recognize the new earlier vesting provisions.

## **5. Withdrawal**

Withdrawal means ceasing to be employed for reasons other than death or retirement with an immediate annuity or an annual allowance. The assumed rates of termination for all contributors except male Civilian Members, which are unchanged, are in general slightly lower at early durations than those of the previous valuation.

Vested Regular Members (with at least two years of service) under age 60 and vested Civilian Members under age 50 are assumed to elect a transfer of the commuted value of the deferred annuity.

## **6. Mortality**

Unless otherwise noted, the assumed rates are either the same as or generally very close to those projected for plan year 2003 and later in the previous valuation.

Rates for male retirement pensioners were slightly modified. For former Regular Members, they are on average 5% lower at the younger retirement ages but slightly higher at the older retirement ages than those projected in the previous valuation. For former Civilian Members, they are marginally lower at the younger retirement ages.

The mortality rates deemed applicable to widows are marginally higher than those projected in the previous valuation.

The mortality improvement assumption was based on a 25-year select period with an ultimate mortality improvement of 0.5% at all ages. The first-year improvement factors (i.e. for year 2000) were revised to reflect the mortality improvement of the 1995-97 Life Table for Canada relative to the 1985-87 Table. The intermediate factors were obtained by linear interpolation between the first-year and ultimate factors.

## **7. Family Composition**

Assumptions for the proportion of members leaving, upon death, a spouse eligible for a survivor pension under the plan were all modified. In particular the probability of a male Regular Member leaving a widow is roughly 5% lower, except at the extreme ages, than in the previous valuation. Assumptions for male Civilian Members and for females were also modified but to a lower extent.

For almost all female pensioners aged 65 and over, a new widower is expected to be one or two years older than in the previous valuation. The age assumption for all other new survivors remains virtually unchanged.

The number of eligible children surviving a male contributor or pensioner was assumed to be roughly 20% lower than in the previous valuation. All other assumptions regarding eligible children are unchanged from the previous valuation. To determine the value of pensions payable to eligible children, the rates of pension termination were

assumed to be zero prior to age 17 and 15% per annum thereafter until expiry of the benefit on the 25<sup>th</sup> birthday.

### **C. Other Assumptions**

#### **1. Pension Benefits Division / Optional Survivor Benefit / Leave Without Pay**

Pension benefits divisions have almost no effect on the valuation results because the plan liabilities are reduced on average by roughly the amount paid to the credit of the former spouse. Consequently, no future pension benefits divisions were assumed in estimating normal costs and liabilities. However, past pension benefits divisions were fully reflected in liabilities.

Two other provisions, namely the optional survivor benefit and the suspension of membership while on leave without pay, were also treated like pension benefits divisions for the same reason.

#### **2. Minimum Postretirement Death Benefit**

This valuation does not take into account the minimum death benefit described in Note 16 of section D of Appendix 2, in respect of deaths occurring after retirement. The resulting understatement of accrued liability and normal cost is not material because a majority of the relatively few pensioners who die in the early years of retirement do leave an eligible survivor.

#### **3. Administrative Expenses**

It is estimated that administrative expenses will be 0.35% of pensionable payroll, which is 0.05% greater than in the previous valuation. The allocation of the expenses has also been revised. In plan year 2003 the Account is assumed to be charged with 94% of the total expenses, reducing by 2% each year thereafter.

The future expenses expected to be charged to the Account have been capitalized and are shown as a liability on the balance sheet, whereas the expenses to the Fund have been added to the normal cost as they occur.

#### **4. Funding of Elected Prior Service**

The government credits to the Account in respect of prior service elections are assumed to be 100% of the resulting contributions made by the contributors; the corresponding figure for the Fund is 274%.

#### **5. Outstanding Terminations**

Payments owing to former contributors as at 31 March 2002 were ignored in this valuation. The consequent understatement of liability is negligible because there were very few such cases and the average amount owing was modest.

#### **6. Disability Incidence Rates for Pensioners Under Age 60**

Both deferred pensioners and pensioners receiving an annual allowance while under age 60 were assumed to have a 0% disability rate. The resulting understatement of liabilities and normal costs is negligible.

**7. Recovery Rates for Disability Pensioners**

No recoveries were assumed for disability pensioners. The resulting overstatement of liabilities and normal costs is negligible.

**8. Sex of Surviving Spouses**

Each eligible surviving spouse is assumed to be of the opposite sex.

## **Appendix 8 – RCA Going-Concern Valuation Methodology and Assumptions**

### **A. Valuation of Assets**

The assets comprise the recorded balance in the Retirement Compensation Arrangements Account, which forms part of the Public Accounts of Canada, and a refundable tax. Each calendar year a cash transfer is made to the Canada Customs and Revenue Agency (CCRA) such that in total half of the assets are held by CCRA as a refundable tax.

The RCA Account is not invested in marketable securities. Instead, the government borrows the plan assets. Investment earnings are credited every three months in accordance with the actual average yield on a book value basis for the same period on the combined Superannuation Accounts of the Public Service, Canadian Forces and Royal Canadian Mounted Police pension plans. The actuarial asset value is equal to the book value.

### **B. Valuation of Liabilities**

Described in this appendix are the liability valuation methodologies used and any differences in demographic assumptions from those used in the RCMPSA valuation.

#### **1. Terminally Funded RCA Benefits**

The following RCA benefits are being terminally funded (i.e. not prefunded but on an occurrence basis):

- Preretirement survivor benefits
- Minimum death benefit
- Waiver of pension reduction on compulsory early retirement
- Elective service

These benefits are terminally funded because they are uncommon or of little financial significance. For example, the preretirement survivor benefit becomes payable only when the average salary is less than 1.4 times the YMPE, which excludes almost all Regular Members. As well, the RCA minimum death benefit is expected to occur only with deaths at younger ages where the probability of death is small.

#### **2. RCA Postretirement Survivor Benefits**

The limit on the amount of spousal annual allowance that can be provided under the RCMPSA decreases at the same time the member's pension reduces due to the CPP offset, usually at age 65.

This benefit was valued conservatively by assuming the plan limit is always reduced by the CPP offset. The liability overstatement is minor because the probability of the former contributor dying prior to age 65 is small. (This overstatement tends to be offset by the understatement of accrued liability caused by terminally funding the preretirement survivor benefit.) The projected accrued benefit cost method was used to estimate the liabilities and normal costs for this RCA benefit.



### 3. Excess Pensionable Earnings

The projected accrued benefit cost method was used to estimate plan liabilities and normal costs retirement for benefits in excess of the Maximum Pensionable Earnings (MPE).

For Civilian Members, the valuation population and actuarial assumptions described in Appendix 7 were used without modification.

For Regular Members the expected salary of a member at termination was based not on the seniority and promotional salary increase assumption described in Appendix 7 but on the assumed salary level the member has attained by that time. A probability distribution was developed to determine the salary level at termination, based on the current membership data. The following table shows the projected salary (in current dollars) of those assumed to terminate with a salary exceeding the Maximum Pensionable Earnings of \$99,800 for calendar year 2002.

**Table 14 Assumed Terminations with Salary Exceeding Current MPE**

Current Salary Level (\$ thousands)	Current Population	Salary (\$ thousands) at Termination		
		100 - 120	120 - 130	130+
38 - 67	10,018	97	10	4
67 - 72	2,786	46	3	1
72 - 79	1,553	52	3	1
79 - 89	829	73	5	1
89 - 100	342	114	13	3
100 - 120	197	173	18	6
120 - 130	24	-	16	8
130+	13	-	-	13
Total	15,762	555	68	37

The general economic salary increase assumption was increased by 0.5% per annum for executives.

### 4. Administrative Expenses

To compute the liabilities and normal costs, no provision was made regarding the expenses incurred for the administration of the RCA. These expenses, which are not charged to the RCA Account, are borne entirely by the government and are commingled with all other government expenses.

### C. Actuarial Assumptions

The valuation economic assumptions are those described in Appendix 7 and shown in Table 13, except that the interest discount rate used to determine the present value of the RCA liabilities and normal cost is one-half of the yield projected on the combined Superannuation Accounts.

Except for the modifications described in section B, the demographic assumptions for the RCA valuation are those used for the going-concern RCMPSA valuation, described in section B of Appendix 7. Modifications to the termination rates were not made for this valuation, unlike the previous RCA valuation.

**D. Valuation Data**

The RCA pension benefits in payment were provided as at 31 March 2002. RCA benefits expected to be paid in respect of contributors and accrued spousal allowances of current retired members were all derived from the membership data described in Appendix 5 and shown in Appendix 11.

Details on the RCA valuation data for current pensioners are shown in Tables 33 to 35 of Appendix 11.

## **Appendix 9 – Solvency Valuation Methodology and Assumptions**

### **A. Valuation of Assets**

For the Superannuation Account, a market-related asset value was calculated by discounting future cash flows using 31 March 2002 yields on Government of Canada bonds of corresponding durations. For the Pension Fund, the market value of the assets as at 31 March 2002 was used. For the RCA Account, the book value of the assets was used. Member contributions being made in respect of prior service elections were valued as if they were immediate annuities.

### **B. Valuation of Liabilities**

All members were assumed to be vested in respect of their accrued benefits. The members eligible for an immediate annuity or an annual allowance were assumed to retire immediately. The remaining members were assumed to terminate employment and elect to transfer the commuted value of a deferred annuity out of the plan.

The solvency liability was calculated as the actuarial value of the estimated accrued benefits as at 31 March 2002 on the basis of the actuarial assumptions described in section C.

The computation of the commuted value of the deferred annuities was based on the interest basis specified in the Recommendation for the Computation of Transfer Values from Registered Pension Plans of the Canadian Institute of Actuaries. The actuarial value of all immediate annuities and annual allowances, including pensions already in payment, was the estimated cost of purchasing the appropriate life annuities.

### C. Assumptions

The following table summarizes the actuarial assumptions used for solvency valuation purposes.

**Table 15 Solvency Actuarial Assumptions**

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Interest rates	
Commutated value of deferred indexed annuities	RCMPSA: 4.00% first 15 years, 3.25% thereafter RCA: 0.75% first 15 years, 0.125% thereafter
Immediate annuities and annual allowances	
Immediately indexed benefit	RCMPSA: 3.75% first 15 years, 3.00% thereafter RCA: 0.625% first 15 years, 0.00% thereafter
Deferred indexed benefit	For the first 15 years <ul style="list-style-type: none"> <li>• when pension is not indexed RCMPSA: 6.25% RCA: 3.125%</li> <li>• when pension is indexed RCMPSA: 3.75% RCA: 0.625%</li> </ul> Thereafter: <ul style="list-style-type: none"> <li>• when pension is not indexed RCMPSA: 6.00% RCA: 3.00%</li> <li>• when pension is indexed RCMPSA: 3.00% RCA: 0.00%</li> </ul>
Final average earnings	Calculated using valuation pensionable earnings, actual rates of increase in earnings and assumed seniority and promotional salary increases
Mortality	Same as for going-concern valuation
Family composition	Same as for going-concern valuation
Termination expenses	\$ 6 million in aggregate for the Superannuation Account, the Pension Fund and the RCA Account

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## Appendix 10 – Superannuation Account Projection

Until 31 March 2000 the RCMPSA was entirely financed through the RCMP Superannuation Account. The Account is now charged only with benefit payments made in respect of service earned before 1 April 2000 and administrative expenses; it is credited with prior service contributions made for elections made prior to 1 April 2000 and interest earnings. The legislation allows maintaining an actuarial surplus equal to 10% of the liabilities at the end of the period.

The results of the following projection were computed using the assets described in Appendix 4, the data described in Appendix 5, the methodology described in Appendix 6, and the assumptions described in Appendix 7.

The projection shows the expected development of the Superannuation Account actuarial surplus if all assumptions are realized. Emerging experience, differing from the corresponding assumptions, will result in gains or losses to be revealed in subsequent reports.

**Table 16 Superannuation Account Projection**  
(\$ millions)

Plan Year	Beginning Account Balance	Beginning Liabilities	Beginning Actuarial Surplus	Actuarial Surplus Reduction	Payments	Investment Earnings
2003	9,896	8,644	1,252	388	326	788
2004	9,970	9,031	939	36	352	810
2005	10,392	9,407	985	44	380	819
2006	10,787	9,763	1,024	48	409	823
2007	11,153	10,096	1,057	47	438	828
2008	11,496	10,404	1,092	52	467	832
2009	11,809	10,688	1,121	52	495	830
2010	12,092	10,942	1,150	56	524	826
2011	12,338	11,164	1,174	58	552	818
2012	12,546	11,352	1,194	59	577	783
2017	12,888	11,653	1,235	70	688	701
2022	12,316	11,127	1,189	76	763	647

## Appendix 11 – Detailed Information on Membership Data

**Table 17 Reconciliation of Contributors**

	Regular Members		Civilian Members	
	Male	Female	Male	Female
As at 31 March 1998	13,476	1,988	1,159	1,001
Data corrections	19	13	(5)	(1)
New members	1,885	666	297	336
Re-engagements	11	1	3	1
Nonvested terminations	(209)	(100)	(68)	(77)
Pensionable disabilities	(208)	(36)	(22)	(45)
Pensionable retirements	(1,642)	(43)	(134)	(53)
Deaths	(55)	(4)	(8)	(1)
As at 31 March 2002	13,277	2,485	1,222	1,161

**Table 18 Reconciliation of Retirement Pensioners**

	Former Regular Members		Former Civilian Members	
	Male	Female	Male	Female
As at 31 March 1998	6,621	44	383	186
Data corrections	(16)	1	3	1
New pensioners	1,642	43	134	53
Deaths	(240)	-	(40)	(18)
Re-engagements	(9)	(2)	(2)	(1)
As at 31 March 2002	7,998	86	478	221

**Table 19 Reconciliation of Disability Pensioners**

	Former Regular Members		Former Civilian Members	
	Male	Female	Male	Female
As at 31 March 1998	373	38	39	51
Data corrections	18	-	1	-
New pensioners	208	36	22	45
Deaths	(19)	-	(4)	(2)
As at 31 March 2002	580	74	58	94

**Table 20 Male Regular Member Contributors**  
Number and Average Annual Pensionable Earnings<sup>1</sup> as at 31 March 2002

Age Last Birthday	Completed Years of Pensionable Service								All Years of Service	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35		
To 24	285 \$47,277	- -								285 \$47,277
25-29	889 \$51,752	152 \$62,183	- -							1,041 \$53,275
30-34	672 \$54,549	600 \$63,529	411 \$65,737	9 \$66,284						1,692 \$60,513
35-39	249 \$56,770	321 \$63,806	1,102 \$66,312	583 \$67,673	80 \$68,488					2,335 \$65,364
40-44	76 \$57,505	105 \$64,338	382 \$65,639	642 \$67,788	1,423 \$70,490	47 \$70,999				2,675 \$68,547
45-49	56 \$63,156	25 \$64,325	91 \$65,324	189 \$67,247	936 \$69,986	1,364 \$74,427	74 \$75,350			2,735 \$71,810
50-54	32 \$66,102	9 \$62,486	45 \$63,997	66 \$65,336	181 \$67,917	680 \$73,455	1,010 \$79,036	35 \$83,848		2,058 \$75,254
55+	2 \$65,333	3 \$58,925	10 \$64,676	32 \$65,341	31 \$66,884	77 \$68,558	157 \$78,496	144 \$87,515		456 \$77,110
All Ages	2,261 \$53,263	1,215 \$63,501	2,041 \$65,967	1,521 \$67,510	2,651 \$70,034	2,168 \$73,839	1,241 \$78,748	179 \$86,798		13,277 \$67,328

Average age last birthday: 41.3 years

Average pensionable service last anniversary: 16.9 years

Annualized pensionable payroll<sup>2</sup>: \$878.4 million

<sup>1</sup> As defined in Note 1 in section D of Appendix 2.

<sup>2</sup> The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

**Table 21 Female Regular Member Contributors**  
Number and Average Annual Pensionable Earnings<sup>1</sup> as at 31 March 2002

Age Last Birthday	Completed Years of Pensionable Service						All Years of Service
	0-4	5-9	10-14	15-19	20-24	25-34	
To 24	139 \$48,544	- -					139 \$48,544
25-29	372 \$54,275	99 \$62,806	2 \$61,889				473 \$56,093
30-34	231 \$56,401	229 \$63,421	162 \$65,386	- -			622 \$61,326
35-39	60 \$56,016	77 \$63,728	273 \$65,611	205 \$66,961	7 \$68,177		622 \$64,926
40-44	18 \$61,457	15 \$63,157	58 \$65,690	129 \$66,887	138 \$67,472	2 \$67,154	360 \$66,493
45-49	12 \$58,529	8 \$63,903	21 \$65,533	30 \$64,421	88 \$66,536	54 \$73,464	213 \$67,346
50-54	2 \$48,078	- -	5 \$65,341	6 \$65,623	12 \$70,034	20 \$72,901	45 \$69,223
55-59	- -	- -	2 \$65,138	- -	2 \$65,365	7 \$71,326	11 \$69,117
All Ages	834 \$54,235	428 \$63,334	523 \$65,528	370 \$66,708	247 \$67,266	83 \$72,996	2,485 \$61,958

Average age last birthday: 35.0 years

Average pensionable service last anniversary: 9.7 years

Annualized pensionable payroll<sup>2</sup>: \$154.0 million

<sup>1</sup> As defined in Note 1 in section D of Appendix 2.

<sup>2</sup> The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.



**Table 22 Male Civilian Member Contributors**  
Number and Average Annual Pensionable Earnings<sup>1</sup> as at 31 March 2002

Age Last Birthday	Completed Years of Pensionable Service								All Years of Service	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35		
To 24	26 \$48,677	- -								26 \$48,677
25-29	76 \$50,980	8 \$58,187	- -							84 \$51,666
30-34	70 \$54,617	43 \$60,234	18 \$58,215	- -						131 \$56,955
35-39	47 \$57,107	30 \$62,321	55 \$63,255	32 \$63,605	2 \$67,699					166 \$61,467
40-44	37 \$58,756	22 \$57,762	36 \$63,580	64 \$66,588	50 \$63,996	3 \$67,942				212 \$63,202
45-49	25 \$57,618	13 \$56,617	13 \$68,140	47 \$64,651	83 \$68,030	62 \$67,535	5 \$67,670			248 \$65,617
50-54	15 \$62,658	15 \$56,400	9 \$59,852	17 \$67,142	34 \$68,874	64 \$70,326	43 \$71,301	4 \$54,853		201 \$67,631
55+	10 \$74,781	8 \$64,325	16 \$55,240	23 \$58,376	19 \$68,521	41 \$70,474	31 \$68,674	6 \$66,804		154 \$67,675
All Ages	306 \$55,390	139 \$59,659	147 \$62,069	183 \$64,588	188 \$67,156	170 \$69,302	79 \$70,040	10 \$62,024		1,222 \$63,127

Average age last birthday: 43.4 years

Average pensionable service last anniversary: 14.5 years

Annualized pensionable payroll<sup>2</sup>: \$76.5 million

<sup>1</sup> As defined in Note 1 in section D of Appendix 2.

<sup>2</sup> The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

**Table 23 Female Civilian Member Contributors**  
Number and Average Annual Pensionable Earnings<sup>1</sup> as at 31 March 2002

Age Last Birthday	Completed Years of Pensionable Service								All Years of Service
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35	
To 24	20 \$46,561	- -							20 \$46,561
25-29	93 \$48,431	9 \$52,099	- -						102 \$48,755
30-34	80 \$50,362	43 \$54,399	33 \$50,508	1 \$54,924					157 \$51,527
35-39	57 \$51,144	42 \$50,860	77 \$54,358	26 \$55,353	- -				202 \$52,852
40-44	36 \$50,345	27 \$50,009	44 \$53,778	45 \$58,148	54 \$54,081	7 \$52,811			213 \$53,688
45-49	35 \$55,812	21 \$46,695	29 \$49,865	31 \$59,612	61 \$57,477	58 \$58,097	2 \$57,394		237 \$55,775
50-54	10 \$58,396	6 \$46,428	14 \$50,434	22 \$55,299	35 \$53,865	37 \$60,693	27 \$63,760	3 \$55,142	154 \$57,163
55+	4 \$62,266	9 \$61,575	10 \$66,630	20 \$57,725	14 \$55,832	11 \$61,811	8 \$65,747	- -	76 \$60,679
All Ages	335 \$50,682	157 \$51,642	207 \$53,319	145 \$57,447	164 \$55,448	113 \$58,981	37 \$63,845	3 \$55,142	1,161 \$54,039

Average age last birthday: 41.4 years

Average pensionable service last anniversary: 12.3 years

Annualized pensionable payroll<sup>2</sup>: \$62.6 million

<sup>1</sup> As defined in Note 1 in section D of Appendix 2.

<sup>2</sup> The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

**Table 24 Male Former Regular Member Retirement Pensioners**  
Number and Average Annual Pension<sup>1</sup> as at 31 March 2002

Age Last Birthday	Superannuation Account		Pension Fund	
	Number	Average (\$)	Number	Average (\$)
35-39	1	19,241	-	-
40-44	53	20,831	31	1,291
45-49	644	27,811	206	1,149
50-54	1,605	32,315	266	1,110
55-59	1,886	37,291	189	991
60-64	1,677	36,737	22	1,089
65-69	1,264	31,273	-	-
70-74	656	29,673	-	-
75-79	126	26,389	-	-
80-84	57	28,626	-	-
85-89	23	22,694	-	-
90-94	5	29,781	-	-
95-99	1	20,906	-	-
All Ages	7,998	33,444	714	1,097

Average age last birthday at 31 March 2002: 59.6 years

Average age last birthday at retirement: 48.8 years

Total annualized pensions

Superannuation Account: \$267.5 million

Pension Fund: \$0.8 million

<sup>1</sup> Equals initial amounts of pension plus all accrued indexation to and including 1 January 2002, reduced by any CPP and PBDA offsets in effect as at 31 March 2002. All pensions are in pay except for 4 retirement pensions deferred to age 60. All accrued indexation is in pay except that in respect of retirement pensioners who have not yet satisfied at least one of the relevant criteria for receiving indexation payments.

**Table 25 Male Former Regular Member Disability Pensioners**  
 Number and Average Annual Pension as at 31 March 2002

Age Last Birthday	Superannuation Account		Pension Fund	
	Number	Average (\$)	Number	Average (\$)
30-34	1	11,513	1	1,817
35-39	5	12,686	2	1,278
40-44	40	19,133	18	1,335
45-49	124	22,509	30	1,170
50-54	167	26,652	33	1,171
55-59	126	26,651	13	1,007
60-64	59	28,058	2	930
65-69	30	26,550	-	-
70-74	17	21,480	-	-
75-79	5	16,812	-	-
80-84	4	18,673	-	-
85-89	2	18,299	-	-
All Ages	580	24,918	99	1,183

Average age last birthday at 31 March 2002: 54.2 years

Average age last birthday at retirement: 46.3 years

Total annualized pensions

Superannuation Account: \$14.5 million

Pension Fund: \$0.1 million

**Table 26 Female Former Regular Member Retirement Pensioners**  
Number and Average Annual Pension<sup>1</sup> as at 31 March 2002

Age Last Birthday	Superannuation Account		Pension Fund	
	Number	Average (\$)	Number	Average (\$)
35-39	4	39,906	-	-
40-44	17	17,242	6	852
45-49	41	22,710	13	1,051
50-54	16	26,977	3	891
55-59	6	24,232	1	361
60-64	-	-	-	-
65-69	2	9,938	-	-
All Ages	86	23,032	23	948

Average age last birthday as at 31 March 2002: 47.6 years

Average age last birthday at retirement: 43.6 years

Total annualized pensions

Superannuation Account: \$2.0 million

Pension Fund: \$22,000

<sup>1</sup> Equals initial amounts of pension plus all accrued indexation to and including 1 January 2002, reduced by any CPP and PBDA offsets in effect as at 31 March 2002. All pensions are in pay except for 1 retirement pension deferred to age 60. All accrued indexation is in pay except that in respect of retirement pensioners who have not yet satisfied at least one of the relevant criteria for receiving indexation payments.

**Table 27 Female Former Regular Member Disability Pensioners**  
 Number and Average Annual Pension as at 31 March 2002

Age Last Birthday	Superannuation Account		Pension Fund	
	Number	Average (\$)	Number	Average (\$)
30-34	2	10,977	1	362
35-39	4	13,041	2	1,038
40-44	23	16,444	6	1,021
45-49	22	17,934	4	728
50-54	16	18,081	3	1,287
55-59	5	21,622	-	-
60-64	-	-	-	-
65-69	2	5,715	-	-
All Ages	74	16,969	16	958

Average age last birthday at 31 March 2002: 46.7 years

Average age last birthday at retirement: 41.7 years

Total annualized pensions

Superannuation Account: \$1.3 million

Pension Fund: \$15,000

**Table 28 Male Former Civilian Member Retirement Pensioners**  
Number and Average Annual Pension<sup>1</sup> as at 31 March 2002

Age Last Birthday	Superannuation Account		Pension Fund	
	Number	Average (\$)	Number	Average (\$)
35-39	2	50,345	1	1,236
40-44	4	20,318	1	974
45-49	2	21,070	-	-
50-54	14	37,412	7	1,669
55-59	89	32,970	30	1,204
60-64	107	30,782	15	1,036
65-69	106	23,014	1	13
70-74	81	18,459	-	-
75-79	49	17,698	-	-
80-84	19	14,477	-	-
85-89	5	17,850	-	-
All Ages	478	25,402	55	1,192

Average age last birthday at 31 March 2002: 65.8 years

Average age last birthday at retirement: 57.3 years

Total annualized pensions

Superannuation Account: \$12.1 million

Pension Fund: \$66,000

<sup>1</sup> Equals initial amounts of pension plus all accrued indexation to and including 1 January 2002, reduced by any CPP and PBDA offsets in effect as at 31 March 2002. All pensions are in pay except for 15 retirement pensions deferred to age 60.

**Table 29 Male Former Civilian Member Disability Pensioners**  
 Number and Average Annual Pension as at 31 March 2002

Age Last Birthday	Superannuation Account		Pension Fund	
	Number	Average (\$)	Number	Average (\$)
35-39	4	8,354	1	703
40-44	2	6,469	1	1,848
45-49	5	17,814	-	-
50-54	10	23,452	2	550
55-59	12	22,993	2	1,108
60-64	9	15,401	-	-
65-69	9	13,701	-	-
70-74	6	11,710	-	-
75-79	-	-	-	-
80-84	1	30,075	-	-
All Ages	58	17,381	6	978

Average age last birthday at 31 March 2002: 57.9 years

Average age last birthday at retirement: 50.6 years

Total annualized pensions

Superannuation Account: \$1.0 million

Pension Fund: \$6,000



**Table 30 Female Former Civilian Member Retirement Pensioners**  
Number and Average Annual Pension<sup>1</sup> as at 31 March 2002

Age Last Birthday	Superannuation Account		Pension Fund	
	Number	Average (\$)	Number	Average (\$)
35-39	1	10,647	-	-
40-44	2	13,569	1	911
45-49	2	19,473	1	113
50-54	9	26,824	4	1,509
55-59	23	26,327	8	1,108
60-64	56	20,999	10	809
65-69	49	17,194	-	-
70-74	33	15,673	-	-
75-79	27	14,920	-	-
80-84	13	13,863	-	-
85-89	4	13,444	-	-
90-94	1	31,672	-	-
95-99	1	17,607	-	-
All Ages	221	18,758	24	1,001

Average age last birthday at 31 March 2002: 66.9 years

Average age last birthday at retirement: 57.3 years

Total annualized pensions

Superannuation Account: \$4.1 million

Pension Fund: \$24,000

<sup>1</sup> Equals initial amounts of pension plus all accrued indexation to and including 1 January 2002, reduced by any CPP and PBDA offsets in effect as at 31 March 2002. All pensions are in pay except for 7 retirement pensions deferred to age 60.

**Table 31 Female Former Civilian Member Disability Pensioners**  
 Number and Average Annual Pension as at 31 March 2002

Age Last Birthday	Superannuation Account		Pension Fund	
	Number	Average (\$)	Number	Average (\$)
30-34	5	6,740	2	410
35-39	3	5,027	2	1,141
40-44	9	13,789	4	736
45-49	23	14,108	7	673
50-54	22	16,458	7	824
55-59	13	17,285	5	739
60-64	6	11,651	1	617
65-69	3	12,759	-	-
70-74	7	7,996	-	-
75-79	1	7,756	-	-
80-84	2	6,879	-	-
All Ages	94	13,509	28	744

Average age last birthday at 31 March 2002: 52.4 years

Average age last birthday at retirement: 45.9 years

Total annualized pensions

Superannuation Account: \$1.3 million

Pension Fund: \$21,000

**Table 32 Eligible Survivors**  
Number and Average Annual Allowance<sup>1</sup> as at 31 March 2002

Age Last Birthday	Superannuation Account		Pension Fund	
	Number	Average (\$)	Number	Average (\$)
30-34	2	8,784	-	-
35-39	18	8,276	3	515
40-44	38	8,093	5	418
45-49	76	11,161	9	384
50-54	122	11,622	6	568
55-59	113	14,011	3	770
60-64	174	14,305	1	137
65-69	206	14,401	-	-
70-74	150	11,879	-	-
75-79	82	12,098	-	-
80-84	63	11,740	-	-
85-89	57	10,878	-	-
90-94	20	10,994	-	-
95-99	1	6,903	-	-
Widow(er)s <sup>2</sup>	1,122	12,602	27	480
Children	193	1,944	22	129

Average age last birthday at 31 March 2002: 64.5 years

Average age last birthday at death of contributor: 56.2 years

Total widow annualized pensions

Superannuation Account: \$14.1 million

Pension Fund: \$13,000

Total children annualized pensions

Superannuation Account: \$0.4 million

Pension Fund: \$3,000

<sup>1</sup> Equals initial amounts of annual allowance plus all indexation to and including 1 January 2002.

<sup>2</sup> All but 18 are widows.

**Table 33 RCA Retirement Pensioners<sup>1</sup>**  
Number and Average Annual Pension as at 31 March 2002

Age Last Birthday	Former Regular Members		Former Civilian Members	
	Number	Average (\$)	Number	Average (\$)
50-54	4	2,346	1	1,110
55-59	18	2,134	1	991
60-64	4	645	-	-
All Ages	26	1,938	2	948

**Table 34 RCA Spousal Allowances<sup>2</sup> Accrued by Retirement Pensioners**  
Number and Average Annual Pension as at 31 March 2002

Age Last Birthday	Male		Female	
	Number	Average (\$)	Number	Average (\$)
35-39	-	-	2	1,133
40-44	42	700	15	533
45-49	144	309	18	507
50-54	75	418	10	1,037
55-59	73	367	19	699
60-64	37	154	30	270
65-69	16	55	7	112
70-74	6	26	3	93
75-79	2	92	1	45
All ages	395	352	105	498
Regular Members	299	361	37	566
Civilian Members	96	322	68	460

**Table 35 RCA Spousal Allowances<sup>41</sup> Accrued by Disability Pensioners**  
Number and Average Annual Pension as at 31 March 2002

Age Last Birthday	Male		Female	
	Number	Average (\$)	Number	Average (\$)
30-34	-	-	5	197
35-39	5	147	2	216
40-44	4	109	13	192
45-49	10	94	16	159
50-54	14	151	15	220
55-59	11	107	8	195
60-64	9	221	2	153
65-69	3	53	-	-
70-74	1	193	-	-
All ages	57	136	61	190
Regular Members	27	105	6	106
Civilian Members	30	164	55	200

<sup>1</sup> All are male retirement pensioners.

<sup>2</sup> Spousal allowance shown in this table has not been reduced for members with no eligible spouse.

## Appendix 12 – Detailed Demographic Assumptions

**Table 36 Assumed Seniority and Promotional Salary Increases**  
(percentage of annual earnings)

Pensionable Service <sup>1</sup>	Regular Members <sup>2</sup>	Civilian Members
0	13.0	6.0
1	17.0	5.2
2	6.6	4.5
3	1.5	3.9
4	1.2	3.5
5	0.8	3.2
6	4.6	2.9
7	0.3	2.7
8	0.3	2.4
9	0.5	2.2
10	0.3	2.0
11	0.3	1.9
12	0.4	1.8
13	0.4	1.6
14	0.6	1.6
15	0.5	1.5
16	0.5	1.5
17	0.6	1.4
18	0.6	1.4
19	0.8	1.3
20	0.7	1.3
21	0.7	1.2
22	0.7	1.2
23	0.7	1.1
24	0.9	1.1
25	0.7	1.0
26	0.7	1.0
27	0.7	1.0
28	0.7	1.0
29	0.9	1.0
30	0.7	1.0
31	0.7	1.0
32	0.7	1.0
33	0.7	1.0
34	0.9	1.0
35	0.7	1.0

<sup>1</sup> Expressed in completed years.

<sup>2</sup> Includes 0.2% attributable to Service Pay allowance increases on every fifth anniversary of engagement and 4.0% at duration six for Senior Constable allowances.

**Table 37 Assumed Rates<sup>1</sup> of Pensionable Retirement for Regular Members  
 (per 1,000 individuals)**

Age Last Birthday	Completed Years of Pensionable Service						
	19	20-22	23	24-28	29-33	34	35
37	2	-	-	-	-	-	-
38	3	3	-	-	-	-	-
39	8	8	-	-	-	-	-
40	12	12	-	-	-	-	-
41	15	16	39	-	-	-	-
42	17	18	44	38	-	-	-
43	20	21	49	43	-	-	-
44	22	24	52	48	-	-	-
45	23	25	58	50	-	-	-
46	24	26	63	51	-	-	-
47	27	29	67	55	61	-	-
48	28	30	69	58	64	-	-
49	30	31	75	72	73	-	-
50	31	33	81	73	78	-	-
51	35	36	91	80	88	-	-
52	40	40	110	100	110	250	-
53	60	60	150	140	140	350	220
54	80	80	220	200	190	370	340
55	190	90	250	230	210	430	360
56	200	100	260	240	240	440	410
57	210	110	280	250	250	450	420
58	220	130	290	280	290	500	430
59	1,000	1,000	1,000	1,000	1,000	1,000	1,000

<sup>1</sup> Rates shown for duration 19 are halved in practice to recognize that pensionable retirement can occur only after 20 years of service have been completed.

**Table 38 Assumed Rates<sup>1</sup> of Pensionable Retirement for Civilian Members**  
(per 1,000 individuals)

Age Last Birthday	Completed Years of Pensionable Service								
	0	1-8	9-13	14-18	19-23	24-28	29-33	34	35
49	-	5	10	15	20	30	50	-	-
50	-	5	10	15	20	30	50	-	-
51	-	5	10	15	20	30	50	-	-
52	-	5	10	15	20	30	50	100	-
53	-	5	10	15	20	30	100	100	100
54	-	20	40	60	60	60	250	500	800
55	-	20	40	60	60	60	100	320	500
56	-	20	40	60	70	70	210	380	500
57	-	20	40	60	70	70	300	420	500
58	-	20	40	60	70	70	390	460	500
59	-	270	270	270	280	660	680	680	680
60	-	200	200	200	200	500	500	500	500
61	-	200	200	200	200	200	250	250	250
62	-	200	200	200	200	200	250	250	250
63	-	200	200	200	200	600	600	600	600
64	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

<sup>1</sup> Rates shown for duration 1 and for age 49 are halved in practice to recognize that pensionable retirement can occur only after 2 years of service have been completed or age 50 has been attained, respectively.

**Table 39 Assumed Rates<sup>1</sup> of Pensionable Disability**  
 (per 1,000 individuals)

Age Last Birthday	Regular Members		Civilian Members	
	Male	Female	Male	Female
20	0.4	0.5	0.3	0.4
21	0.4	0.5	0.3	0.4
22	0.4	0.5	0.3	0.4
23	0.4	0.5	0.3	0.4
24	0.4	0.5	0.3	0.4
25	0.5	0.6	0.4	0.5
26	0.5	0.6	0.4	0.5
27	0.5	0.6	0.4	0.5
28	0.5	0.6	0.4	0.5
29	0.5	0.6	0.4	0.5
30	0.6	1.0	0.4	0.6
31	0.6	1.3	0.4	0.7
32	0.6	1.7	0.5	0.7
33	0.7	2.4	0.5	0.8
34	0.8	3.2	0.6	1.0
35	0.9	4.3	0.7	1.3
36	1.2	4.9	1.0	1.6
37	1.3	5.3	1.3	1.8
38	1.5	6.0	1.6	2.0
39	1.7	6.5	1.7	2.3
40	1.9	7.2	1.8	2.5
41	2.2	7.8	1.9	2.6
42	2.5	8.3	2.2	2.9
43	3.0	8.9	2.3	3.1
44	3.5	9.6	2.5	3.5
45	4.1	10.3	2.8	4.0
46	4.9	10.8	2.9	4.3
47	5.8	11.4	3.1	4.8
48	6.6	12.1	3.8	5.4
49	7.5	12.6	4.4	6.0
50	8.5	13.3	5.0	6.7
51	9.6	14.6	5.6	7.4
52	10.9	16.1	6.4	8.2
53	12.4	17.5	7.0	9.1
54	14.0	19.1	7.6	10.1
55	15.9	20.9	8.4	11.2
56	18.0	23.0	9.5	12.5
57	20.4	25.4	10.7	13.7
58	23.2	28.1	12.0	15.1
59	26.3	31.0	13.3	16.7

<sup>1</sup> Rates apply only if at least two years of pensionable service have been completed, but not if the sum of the age (minimum 55 years) and the years of pensionable service is at least 85. Rates are halved for the plan year in which these criteria are first met or ceased to be met.



**Table 40 Assumed Rates of Withdrawal<sup>1</sup>**  
(per 1,000 individuals)

Pensionable Service <sup>2</sup>	Regular Members		Civilian Members <sup>3</sup>	
	Male	Female	Male	Female
0	30	50	45	60
1	17	28	29	47
2	15	27	27	44
3	14	23	26	44
4	14	25	26	42
5	13	22	24	37
6	9	20	16	30
7	8	18	13	26
8	8	18	11	25
9	7	16	9	24
10	7	16	9	23
11	6	16	7	22
12	5	15	6	20
13	5	13	6	18
14	4	9	5	14
15	3	6	3	9
16	2	5	2	7
17	2	3	2	4
18	1	2	1	3
19	1	1	1	2
20+	0	0	0	0

<sup>1</sup> Includes all terminations resulting in a lump sum payment (including a transfer value), or a deferred annuity, other than deaths leaving no eligible survivor(s) and occurring after at least two years of pensionable service.

<sup>2</sup> Expressed in completed years.

<sup>3</sup> Rates at durations two and over do not apply from age 50 onward.

**Table 41 Assumed Rates of Mortality Excluding Disability Pensioners  
for 2003 Plan Year (per 1,000 individuals)**

Age Last Birthday	Regular Members <sup>1</sup>		Civilian Members <sup>50</sup>		Surviving Spouses	
	Male	Female	Male	Female	Male	Female
25	0.6	0.3	0.8	0.3	0.9	0.3
30	0.7	0.3	1.0	0.3	1.3	0.4
35	0.8	0.4	1.0	0.5	1.6	0.6
40	1.1	0.6	1.2	0.7	1.7	0.9
45	1.4	0.8	1.7	0.8	2.2	1.4
50	2.2	1.1	2.6	1.3	3.5	2.3
55	3.7	1.8	4.6	2.2	5.9	3.8
60	6.2	3.5	8.4	4.2	10.2	6.1
65	11.2	6.8	15.2	7.7	16.9	9.7
70	19.3	10.7	25.3	12.9	26.8	15.7
75	33.0	17.8	41.4	21.6	43.4	26.2
80	56.7	31.2	69.5	37.5	72.5	44.6
85	92.5	54.4	113.5	65.1	115.9	76.5
90	142.2	95.7	182.4	111.8	176.1	129.5
95	207.0	154.7	277.2	181.8	254.7	207.0
100	285.1	232.2	369.4	274.1	355.9	316.0
105	371.2	327.7	425.8	382.7	454.9	432.4
110	439.9	412.1	459.1	467.9	493.0	484.4
115	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0

<sup>1</sup> Rates apply to both contributors and retirement pensioners.

**Table 42 Assumed Rates of Mortality for Disabled Pensioners**  
for 2003 Plan Year (per 1,000 individuals)

Age Last Birthday	Former Regular Members		Former Civilian Members	
	Male	Female	Male	Female
25	1.5	0.6	2.3	0.7
30	2.0	0.7	2.8	0.7
35	2.5	1.0	3.3	1.2
40	3.1	1.5	3.8	1.7
45	3.7	2.0	4.4	2.2
50	5.2	2.7	6.3	3.1
55	7.8	3.9	9.7	4.7
60	12.5	6.5	15.9	7.9
65	19.5	10.9	24.6	12.3
70	29.3	15.0	35.5	18.1
75	43.7	23.1	53.6	28.0
80	65.1	37.1	82.6	44.6
85	96.5	59.0	123.0	70.6
90	140.1	95.7	181.9	111.8
95	206.8	154.7	277.0	181.8
100	285.1	232.2	369.4	274.1
105	371.2	327.7	425.8	382.7
110	439.9	412.1	459.1	467.9
115	1,000.0	1,000.0	1,000.0	1,000.0

**Table 43 Assumed Longevity Improvement Factors**

Age Last Birthday	Initial and Ultimate Plan Year Mortality Reductions <sup>1</sup> (%)			
	Male		Female	
	2000	2025+	2000	2025+
20	3.00	0.50	2.00	0.50
25	2.50	0.50	1.75	0.50
30	1.50	0.50	1.25	0.50
35	0.75	0.50	1.25	0.50
40	1.00	0.50	1.25	0.50
45	1.75	0.50	1.75	0.50
50	2.50	0.50	2.00	0.50
55	2.75	0.50	1.75	0.50
60	2.75	0.50	1.50	0.50
65	2.50	0.50	1.50	0.50
70	2.00	0.50	1.50	0.50
75	1.50	0.50	1.25	0.50
80	1.25	0.50	1.00	0.50
85	0.75	0.50	0.75	0.50
90	0.50	0.50	0.50	0.50
95	0.25	0.25	0.25	0.25
100	0.25	0.25	0.25	0.25
105+	0.00	0.00	0.00	0.00

<sup>1</sup> The mortality rate reduction applicable during any plan year within the 25-year select period is found by linear interpolation between the figures for plan years 2000 and 2025.

**Table 44 Assumed Probability<sup>1</sup> of Eligible Spouse<sup>2</sup> at Death of Member**

Age Last Birthday	Regular Members		Civilian Members	
	Male	Female	Male	Female
25	0.42	0.36	0.34	0.57
30	0.70	0.49	0.43	0.57
35	0.81	0.53	0.48	0.57
40	0.90	0.53	0.57	0.57
45	0.88	0.53	0.66	0.56
50	0.86	0.52	0.73	0.56
55	0.86	0.51	0.77	0.55
60	0.86	0.48	0.80	0.52
65	0.83	0.45	0.77	0.49
70	0.78	0.41	0.73	0.45
75	0.73	0.37	0.68	0.40
80	0.65	0.30	0.61	0.33
85	0.55	0.23	0.51	0.25
90	0.42	0.15	0.40	0.16
95	0.29	0.08	0.27	0.09
100	0.16	0.03	0.15	0.04
105	0.08	0.01	0.07	0.01
110	0.03	0.00	0.03	0.00

<sup>1</sup> Does not apply if the deceased member was a contributor with less than five years of pensionable service.

<sup>2</sup> Assumed to be of the opposite sex.

**Table 45 Assumptions for Survivor Allowances<sup>1</sup>**

Age Last Birthday at Death	Eligible Spouse Age Difference <sup>2</sup>	Male		Female		
		Eligible Children		Eligible Spouse Age Difference <sup>55</sup>	Eligible Children	
		Average Number	Average Age		Average Number	Average Age
25	(1)	0.18	3	1	0.12	2
30	(1)	0.94	4	2	0.76	3
35	(1)	1.29	8	2	1.09	7
40	(1)	1.30	12	2	1.15	11
45	(2)	1.22	16	2	1.01	15
50	(2)	0.80	19	3	0.61	19
55	(2)	0.32	20	3	0.24	21
60	(3)	0.14	21	3	0.06	23
65	(3)	0.05	22	3	0.02	24
70	(3)	0.02	23	2	-	
75	(3)	0.02	24	2	-	
80	(3)	-		2	-	
85	(4)	-		1	-	
90	(5)	-		-	-	
95	(6)	-		(2)	-	
100	(8)	-		(3)	-	
105	(10)	-		(6)	-	
110	(13)	-		(9)	-	

<sup>1</sup> Payable unless the deceased member was a contributor with less than two years of pensionable service.

<sup>2</sup> Age of spouse less age of member, both calculated at death of member.

## **Appendix 13 – Acknowledgements**

The Comptrollership Branch of the Treasury Board Secretariat provided a certification of the assets of the plan as at 31 March 2002.

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