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ROYAL CANADIAN MOUNTED POLICE SUPERANNUATION ACCOUNT

ACTUARIAL REPORT

AS AT DECEMBER 31, 1982

Canada

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ROYAL CANADIAN MOUNTED POLICE SUPERANNUATION ACT - PART I

Report on the Actuarial Examination of the Royal Canadian Mounted Police Superannuation Account in the Consolidated Revenue Fund as at December 31, 1982

I. Introduction and Summary

Pursuant to Section 25 of the Royal Canadian Mounted Police Superannuation Act, we have made an actuarial examination of the Account as at December 31, 1982 and have the honour to report thereon.

The last examination of this Account was made as of December 31, 1979. No amendments to the Act have been made since that time.

The normal actuarial cost, that is, the total contribution required from contributors and Government combined to provide all benefits in respect of current service, is estimated to be 17.304% of pay. Allowing for coordination with the Canada Pension Plan, the effective rate of contribution to the Account from contributors is equivalent to 5.383% of pay. As a result, it is estimated that Government credits are required at a rate equal to 2.21 times the contributions from contributors.

The normal actuarial cost makes allowance for general salary increases at the rate of 5.0% of pay per annum. Pursuant to subsection 24(2) of the Act, additional liabilities arising out of general increases in pay in excess of this rate are estimated to require Special Credits to the Account equal to 1.90 times the increase in the effective annual payroll in excess of 5.0% per annum. Under the existing provisions of the Act, such credits would be set up as a deferred charge to be amortized in five equal annual instalments. These instalments, together with those in respect of existing deferred charges may be offset by interest earnings in excess of 6.5% per annum, pursuant to subsection 24(4) of the Act.

The estimated unfunded actuarial liability in the Account as at December 31, 1982 was $23.0 million (but this shortfall was more than made up by December 31, 1985 as a result of interest earnings in excess of the assumed rate).

This report and the above figures make no provision for benefits and increases in benefits related to increases in the Consumer Price Index. Such benefits, payable to persons in receipt of annuities or annual allowances under various government superannuation and other acts, including the Royal Canadian Mounted Police Superannuation Act (RCMPSA), are provided under the Supplementary Retirement Benefits Act and, pursuant to Part III of the RCMPSA, contributors are required to pay special contributions to the Supplementary Retirement Benefits Account. Although these provisions do not affect the operation of the Royal Canadian Mounted Police Superannuation Account, it was considered appropriate to continue the practice of including a description of those provisions and commenting briefly on the related financing and actuarial implications, in order to present a complete picture of the employer-sponsored pension provisions for contributors to the Royal Canadian Mounted Police Superannuation Account. This is done in Appendix 1.

II. Data and Membership Statistics

The Royal Canadian Mounted Police provided the basic data tapes containing seriatim records. All records were examined for consistency, interrelationships and general reasonableness both with regard to individual members or survivors and with regard to previous data submissions. In instances where necessary corrections could not be obtained, reasonable assumptions and/or substitutions were introduced.

The following tables derived from those tapes show pertinent statistics concerning contributors to the Account (members and former members of the Royal Canadian Mounted Police) and survivors eligible for allowances during the intervaluation period from December 31, 1979 to December 31, 1982.

A. Members of the Force

Class of Contributors	*Contributors on Jan.1/80	New contributors 1980-1982	Terminations during the 1980-82 period: Type of Benefit	Type of Termination: Death	Disabled	Other**	Total	Contributors on Dec.31/82
Officers			Annuity	4	1	18	23	
			Lump Sum	-	-	1	1	
	565	-		4	1	19	24	541
Other Ranks			Annuity	30	21	568	619	
			Lump Sum	5	-	987	992	
	13,649	2,606		35	21	1,555	1,611	14,644
Civilians			Annuity	2	6	60	68	
			Lump Sum	1	-	269	270	
	1,596	545		3	6	329	338	1,803
Total			Annuity	36	28	646	710	
			Lump Sum	6	-	1,257	1,263	
	15,810	3,151		42	28	1,903	1,973	16,988

* In this column, contributors who had other rank status on January 1, 1980 and who attained officer status at some time during the 1980-82 period are shown as officers rather than other ranks. The data supplied for the preceding examination indicated the total number of contributors as at December 31, 1979, as being 15,642.

** Compulsory retirements because of age, promotion of economy or efficiency, misconduct, together with all retirements for other reasons

B. Persons Entitled to Annuities or Annual Allowances

Retired Contributors*

	Entitled on Jan. 1/80	New Entitlements 1980 to 1982	Terminations 1980 to 1982		Entitled on Dec. 31/82
			Deaths	Other**	
Other than disability					
Male	1,519	634	51	2	2,100
Female	32	12	1	-	43
Total	1,551	646	52	2	2,143
Disability					
Male	83	27	9	-	101
Female	7	1	-	-	8
Total	90	28	9	-	109
Grand total	1,641****	674	61	2	2,252

Surviving Spouses***

Entitled on Jan.1/80	New Entitlements 1980 to 1982	Terminations 1980 to 1982		Entitled on Dec. 31/82
		Deaths	Remarriages	
198****	78	8	5	263

Children and Students

	Entitled on Jan.1/80	Entitled on Dec.31/82
Children under 18	111	130
Students (18 to 25)	11	22

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* Includes former contributors entitled to deferred annuities (eleven as at Dec. 31, 1982)

** Re-enrollments in the Force and transfers to other superannuation plans

*** All females except for two new widowers who remain entitled at December 31, 1982

**** The data supplied for the preceding examination indicated the total numbers entitled to annuities or allowances as at December 31, 1979, as 1656 retired contributors and 223 spouses.

III. Valuation Assumptions

A. General Comments

Continuing the practice used in previous valuations, studies were made of the actual experience during the period 1980-82 compared with the expected experience for salaries and terminations, based on the assumptions used in the 1979 valuation. Some of the assumptions were changed as is explained in detail under the respective headings.

Our primary purpose in continuing to treat this plan in a manner consistent with the practice for industrial pension plans is not to provide security through funding, but to account for pension costs in an appropriate and reasonably comparable fashion. Before discussing the various assumptions under individual headings, the following general comments relating to economic assumptions may be in order.

(1) Effect of explicit or implicit level of inflation determining the general level of economic assumptions

There are two aspects to the discussion under this heading:

(a) The extent to which the required normal actuarial cost (current service contribution rate) is affected by the level of economic assumptions depends on the type of pension plan under consideration. For a pension plan of the career-average type, where the rate of interest is normally the sole economic assumption, a relatively higher level of interest produces a very substantially lower cost. For a final-average-pay plan, such as the Royal Canadian Mounted Police Superannuation Act, where the effect of a relatively high assumed rate of interest tends to be offset by the effect of an accompanying relatively high level of assumed salary increases, the effect is considerably smaller. Finally, for a fully indexed final-average salary plan, such as the RCMPSA if it were combined with the applicable provisions of the Supplementary Retirement Benefits Act, the level of assumed inflation tends to have a very slight effect on costs if its relationship to assumed interest rates and general increases in salaries remains approximately the same. Clearly, the level of economic assumptions and the differentials between them must be kept in mind when attempts are made to compare different types of pension plans or when modifications in a particular plan are being considered, and mere consistency will not necessarily ensure acceptable conclusions regarding costs.

(b) It seems unavoidable that actuaries, individually and collectively influence expectations regarding future inflation by their very act of attempting to use "realistic" assumptions. And it may well be that the realism, desirable as it may appear to economists, accountants and actuaries, needs to be moderated if there is to be any hope of maintaining a moderate long-term level of inflation. While this appears to apply quite generally, it seems crucial in relation to actuarial reports dealing with pension plans operated by governments or major financial or industrial enterprises.

(2) Effect of benefits beyond the terms of pension plans

As suggested above, when costs of different plans are being compared or amendments are being considered, it is important to bear in mind the level of the economic assumptions as well as the differentials between individual assumptions. However, there are considerations beyond these. In recent years for a growing number of plans, in some cases as a result of collective bargaining, employers have adopted the practice of (a) making periodic ad hoc adjustments to pensions in payment to compensate for some or all of the purchasing power lost through inflation, and (b) increasing the benefits accrued to active members of flat-benefit or career-average type pension plans in order to keep earned pensions in a reasonable relationship to current rates of pay. When there is no explicit commitment under the terms of the plan for similar adjustments in the future, they will not be included in the calculations of normal actuarial cost and actuarial liabilities.

It might be argued, especially when adjustments occur with regularity, that the employer has made a strong moral commitment to maintain pension values at a certain level and that from an accounting point of view the costs are understated. It would be possible, of course, for the employer to make advance provision for future adjustments without contributing additional funds to the plan by setting up a special contingent liability in his balance sheet and by including the additions to such contingent liability account with the normal actuarial cost to the pension fund for purposes of assessing the total normal actuarial cost. Such practice might make for more valid comparison of the potential value of pensions under different plans and more equitable allocation of costs between different generations of shareholders, consumers and taxpayers. However, setting up a contingent liability in the employer's balance sheet might well be interpreted as converting a moral commitment into a promise, in which case the additional benefits should be considered part of the formal plan and funded in the same manner as basic benefits. For practical purposes, of course, this would eliminate the employer's option of updating benefits from time to time without any commitment regarding future adjustments.

B. Rate of Interest

Until the quarter ending June 30, 1969, in accordance with the Act, interest was credited to the Account on the last day of each quarter in the fiscal year at the rate of 1% on the balance to the credit of the Account on the last day of the preceding quarter. This is a rate equivalent to approximately 4% per annum which is the rate that was assumed in the actuarial valuations prior to 1974.

The 1969 amendments to the Act made provision for crediting interest to the Account at the rate used in the preceding actuarial valuation and for the possibility of crediting interest in excess of that rate. However, interest credits in excess of the valuation rate may be applied against budgetary expenditure related to the amortization of actuarial deficiencies. The total rate at which interest is now credited changes every three months and is calculated as if the amounts not required for payment of benefits in each quarter pursuant to this Act and the Public Service and Canadian Forces Superannuation Acts had been invested on a basis similar to the one used for the Canada Pension Plan, i.e., in twenty-year bonds having a yield equivalent to the average yield on Government of Canada bonds with 20 or more years to maturity outstanding at that time.

For the quarter ending December 31, 1982 the total rate of interest credit was 2.5016% which is equivalent to 10.39% per annum. Subsequently, the total annual rate of interest credit slowly rose to above 11% and seems likely to continue above 6.5% for some considerable period of time, even if allowance is made for a drop in anticipated inflation and interest rates to substantially lower levels, given that rates of return on new notional investments reached an average of about 15% during 1981 and 1982 and have only occasionally dipped below 11% since that time.

For purposes of this valuation it was decided to continue the use of an assumed rate of interest of 6.5% which, as noted above, is expected to be exceeded by actual interest credits for a considerable period of time. In the long term, the rate is assumed to be composed of an inflation factor of 3.5% and a real rate of return of about 3%.*

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* more precisely $\left[\frac{1.065}{1.035} - 1 \right]$ or 2.899%

A real rate of return of 3.0% is considered to be reasonably consistent with an average long term inflation rate of 3.5%, particularly, if that rate is assumed to be somewhat unstable. As well, 3.0% appears to be a real rate explicitly or implicitly assumed in many actuarial valuations of private pension plans, so that its use would tend to minimize the nevertheless formidable difficulties in comparing normal actuarial costs (contribution rates) with those of other plans.

C. <u>Salary Increases</u>

There are two main forces that tend to generate increases in rates of pay. First, a promotional force resulting from experience and training and increase in responsibility due to appointment to a higher rank; second, an economic force related, directly or indirectly, to such factors as inflation, general increases in productivity and labour market conditions. Increases in pay resulting from this second force are herein referred to as "general" increases.

Where used in this report, the term "salary scale" means the assumed pattern of future increases in pay from year to year as a member advances in age.

A study of the rates of pay for male contributors from December 31, 1979 to December 31, 1982 indicated somewhat lower increases than assumed in the 1979 valuation for ages 25 to 35 and somewhat higher increases for most other ages. A new salary scale giving fifty percent weight to the recent experience was developed. The new promotional salary scale and illustrations of equivalent level annual rates of increment are shown in Appendix 3.

With regard to general increases, the wide variations that have occurred in recent years as a result of varying economic and social pressures are indicative of the difficulty in predicting the level of future increases of this type. For purposes of this valuation, we have assumed a level rate of general increases in pay of 5%. The assumed rate of general increases of 5% may be thought of as being composed of a 3.5% inflation factor and a 1.5%* factor for real general increases related to productivity and labour market conditions.

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* more precisely $\left[\frac{1.050}{1.035} - 1 \right]$ or 1.449

D. Rates of Retirement or Termination (for reasons other than death)

1. Rates of Termination with Return of Contributions

The actual number of terminations among male contributors during the 1980-82 period was about 24% higher than the number expected in accordance with the 1979 assumptions. New rates were developed, giving about fifty percent weight to the 1980-82 experience. These rates are shown in Appendix 4.

2. Rates of Disability

The rates of disability used in the 1979 valuation were deemed to remain appropriate and used again. The actual number of disabilities among male contributors during the 1980-82 period was zero below age 30 and about eight percent lower than the number expected for ages 30 to 59. The rates are shown in Appendix 4.

3. Rates of Retirement

The actual number of retirements among male contributors during the 1980-82 period was substantially below the number expected in accordance with the 1979 assumptions. New rates were constructed based on the 1980-82 experience but giving only fifty percent weight to the recent experience for ages thirty-nine and over. These rates are shown in Appendix 4.

E. Rates of Mortality and Remarriage and Probability of Student Eligibility

1. Active Contributors

Although the actual number of deaths is small, it was found that the 1983 GAM Table projected ten years according to Scale H was a much better representation of mortality among male contributors during the 1980-82 period than the rates assumed for the 1979 valuation. Therefore, the former basis was used and is shown in Appendix 4.

2. Former contributors entitled to annuities or annual allowances

Different mortality rates generally apply to persons entitled to pensions because of disability as compared to persons entitled for other reasons. However, as the group of disability pensioners is relatively small, being 4.8% of the 2,252 entitled to pensions at December 31, 1982, we have continued to assume the same rates of mortality for both groups. Although there were only sixty-one deaths during the 1980-82 period, the experience indicated that the 1971 GAM Table which was used in the preceding valuation was no longer appropriate without projection. The 1971 GAM Table projected 30 years in accordance with Scale D was found to provide a reasonable margin for expected continued increases in longevity and was adopted for this valuation. The rates are shown in Appendix 5.

3. Surviving Spouses

The mortality rates adopted for the valuation of benefits to former contributors were found to be equally appropriate for the valuation of both present and prospective spouses' allowances. The remarriage rates used for the preceding valuation were considered to remain appropriate. They are as follows:

(i) for widows - select and ultimate rates derived from the 1940-57 experience of widows awarded pensions under the Pension Act and previous government administrative orders from August 4, 1914 to December 31, 1957.

(ii) for widowers - the same rates as used for purposes of the actuarial report on the Canada Pension Plan as at December 31, 1977.

The mortality rates and samples of the remarriage rates are shown in Appendix 5 and 6, respectively.

4. Children and Students

Allowances to children are payable up to age 18 in all circumstances and from age 18 up to age 25 if the child is unmarried and attending a school or university. As in preceding valuation, the effect of mortality amongst these annuitants was ignored.

For purposes of valuing allowances in payment for students, the probability of a student at any age remaining eligible for allowance at the end of one year was derived from recent experience under the Canadian Forces Superannuation Act. The probabilities are shown in Appendix 6.

F. <u>Proportions of deceased contributors leaving eligible spouses, and Average ages of spouses corresponding to ages of contributors at death</u>

The proportions leaving eligible spouses and the average ages of the surviving spouses used in the preceding valuation were deemed to remain appropriate, except that the average ages of widowers were arbitrarily assumed to be two years higher than those of their deceased spouses. Both these factors are shown for quinquennial ages in Appendix 7.

G. <u>Integration with Canada Pension Plan</u>

Reductions in benefits and contributions to provide for integration with the Canada Pension Plan apply only in respect of salary up to the Year's Maximum Pensionable Earnings (YMPE) as defined in the Canada Pension Plan.

For purposes of this valuation, it was assumed that the YMPE had reached the level of average wages ($21,800) in 1983 and would increase thereafter at the rate of 5.0% per annum, i.e., at the rate assumed for general pay increases. This results in a slight overstatement of the value of benefit reductions attributable to integration in respect of those who retire in 1983, 1984 and 1985 which, however, is offset to some extent by an understatement arising out of the assumption that contributors retired because of disability will not receive any Canada Pension Plan pension until age 65.

H. <u>Male Civilian and Female Members of the Force</u>

It is reasonable to expect that rates of retirement, withdrawal, disability and mortality as well as salary scales applicable to the male civilian members and to the female members, would be different from those applicable to the regular male members of the Force. However, since the civilian and female members of the Force constitute only about 15% of the total number of contributors, it was considered appropriate to make no distinction between these groups in the valuation, except as respects the mortality and remarriage rates of female versus male pension recipients and the relative ages of eligible spouses.

IV. Actuarial Cost Method

The method used is the same as for the preceding valuation and is known as the Unit Credit Actuarial Cost Method. it contemplates contributions in any year sufficient to fund all future benefits in respect of service in that year. This method is the one selected by the Canadian Institute of Chartered Accountants for purposes of its Proposed Accounting Recommendations ("Pension Costs and Obligations", January 1985).

The Normal Actuarial Cost (current service contributions) may be affected by changes in the underlying economic and demographic assumptions as well as by changes in the distribution of contributors by age and sex and relative salaries.

The actuarial liability is the actuarial present value of projected benefits in respect of service to the effective date of the valuation.

V. Contributions and Required Credits to the Account

Using the assumptions and actuarial cost method described in Sections III and IV, respectively, and the distribution of active contributors as at December 31, 1982 summarized in Appendix 8, the normal actuarial cost, i.e., the total rate required from contributors and the Government combined to fund future benefits in respect of current service was calculated to be 17.304% of pay.

After making allowance for integration with contributions payable to the Canada Pension Plan, contributions from contributors to the Account were calculated to be equal to approximately 5.383% of pay, leaving a required Government credit of 11.921% of pay or an amount equal to 2.21 times the contributions from contributors. The required Government credit would be greater, if the effective rate of contributions from contributors were less as a result of integration with Canada Pension Plan contributions at a rate higher than 1.8% of CPP contributory earnings.

The valuation assumptions include provision for 5.0% annual increases in the general level of pay. Under normal pension funding practices, liabilities arising out of increases in pay in excess of the assumed rate would be taken care of, along with other deficiencies after allowing for any gains, following receipt of periodic actuarial reports. The Royal Canadian Mounted Police Superannuation Act, however, provides for special credits to the Account following authorization of general pay increases.

Accordingly, it has been estimated that special credits to the Account in respect of such pay increases should be made equal to 1.90 times the amount of increase in the effective annual payroll in excess of 5.0% per annum. Under the existing provisions of the Act, such credits would be set up as a deferred charge to be amortized in five equal annual instalments. These instalments, together with instalments in respect of any actuarial deficiency reported as a result of statutory actuarial examinations, could be offset by interest earnings in excess of 6.5% per annum.

The normal actuarial cost of 17.304% of pay indicated above is lower than the corresponding figure in the preceding report by about 0.1% of pay. This is mainly accounted for by the following changes:

	Increase(Decrease)
Age and service distribution of contributors	0.1
Promotional salary scales	0.4
Retirement	(0.3)
Pensioner mortality	0.4
Termination with return of contributions	(0.5)
Other changes in assumptions	(0.2)
	(0.1)

VI. Valuation Balance Sheet and Gain and Loss Analysis

The results of the valuation based on the assumptions and the actuarial cost method described in Sections III and IV, respectively, are summarized and the status of the Account as at December 31, 1982, is shown in the following balance sheet.

Assets

	(millions)
Balance on Account (Par Value)*	$ 1,340.0
Credits from Government outstanding at December 31, 1982 and made in 1983	52.5
Actuarial present value of future contributions from members and former members of the Force for prior service plus future credits from Government (assumed equal to 2.0 times the amount from contributors)	8.7
Total Assets	$ 1,401.2
Unfunded actuarial liability	23.0
	$ 1,424.2

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* The value of the Account as at December 31, 1982, determined by discounting the notional investments at the assumed valuation interest rate of 6.5% was $1,909.0 million. The difference between this value and the par value shown in the balance sheet may be regarded as a provision for increases in actuarial liabilities relating to future general salary increases in excess of 5% and for part of the estimated unfunded actuarial liability related to indexing of superannuation benefits pursuant to the Supplementary Retirement Benefits Act (see Appendix 1). Deferred charges totalling $54.0 million which were in the process of amortization but are included in the balance of the Account, would normally be shown as part of any unfunded actuarial liability.

Liabilities

		(millions)
Actuarial present value of prospective benefits to and in respect of contributors who are members of the Force		$ 1,186.2
Actuarial present value of future benefits to persons entitled to an annuity or annual allowance		
Retired contributors	$ 230.6	
Spouses	7.0	
Children	0.4	238.0
Total Liabilities		$ 1,424.2

The foregoing balance sheet indicates an unfunded actuarial liability of $23* million, as at December 31, 1982. This represents an increase of $9 million over the value shown in the preceding report. The major gains and losses which account for this increase are shown in the following table.

* Since the actuarial report on the valuation as at December 31, 1979 was not tabled in the House of Commons until October 22, 1985, any special credit in respect of the unfunded actuarial liability of $14 million reported as at December 31, 1979 would not normally be made until the end of the fiscal year 1985/86. In the present circumstances, this would be superseded by the unfunded actuarial liability of $23 million revealed in this report as at December 31, 1982. However, interest credits to the Account made subsequent to December 31, 1982, have been more than sufficient to offset both the unfunded liability as at that date and any subsequent contribution shortages, resulting in the assets exceeding the estimated actuarial liabilities as at December 31, 1985 by about $83 million.

Actuarial Gains and Losses
(in millions of dollars)

	Gain	Loss	Net Gain (Loss)
Normal experience gains and losses			
- Interest on 1979 unfunded liability		2.9	
- Interest credits in excess of assumed rate	49.0		
- Terminations with return of contributions		0.3	
- Disablements and other retirements	2.5		
- Promotional salary increases	8.8		
- Pensioner salary base		4.8	
- Data correction	29.0		
- Miscellaneous gains (net)	10.4		
	99.7	8.0	91.7
Changes in actuarial assumptions and methods			
- Promotional salary scales		16.9	
- Rates of retirement	22.0		
- Pensioner mortality		31.6	
- Termination with return of contributions	21.3		
- Other assumptions and methods (net)	8.6		
	51.9	48.5	3.4
Extraordinary actuarial gains and losses			
- Special credits related to salary increases*		104.1	
		104.1	(104.1)
Total net loss			(9.0)

* This item has two components:

(a) A special credit of $81.0 million should have been made as at March 31, 1981, but was omitted; this became $90.4 when accumulated with interest at the assumed rate of 6.5%.

(b) The report on the actuarial valuation as at December 31, 1979 not having been tabled until October 22, 1985, special credits were not based on general annual salary increases in excess of 5%, as assumed in that valuation. Instead, special credits were related to general salary increases in excess of 5.5%, as assumed in the valuation as at December 31, 1974. This resulted in a shortfall of $13.7 million as at December 31, 1982.

VII. Conclusion and Actuarial Opinion

In conclusion, we wish to acknowledge the participation of the Departmental Services Office of the Royal Canadian Mounted Police which provided the valuation data for members and former members of the Force and their survivors as at the valuation date.

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

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

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

(c) the methods that have been employed are consistent with sound actuarial principles, and

This report has been prepared and this opinion has been given in accordance with generally accepted actuarial principles and the Recommendations of the Canadian Institute of Actuaries, but for an actuarial assessment of the complete pension plan for members of the Royal Canadian Mounted Police, including provisions of the Supplementary Retirement Benefits Act, reference must be made to Appendix 1 of this report.

Respectfully submitted,

Walt Riese

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March 4, 1986

APPENDIX 1

Taking Account of Supplementary Retirement Benefits

In 1970, the Supplementary Retirement Benefits Act (SRBA) was passed to provide supplementary benefits, related to increases in the Consumer Price Index, for persons in receipt of pensions payable out of the Consolidated Revenue Fund. This Act applies to former contributors to the Royal Canadian Mounted Police Superannuation Account and their surviving spouses and children who are entitled to annuities or annual allowances.

The supplementary benefit is calculated by multiplying the amount of the annuity or annual allowance to which the person is entitled from the Royal Canadian Mounted Police Superannuation Account by the ratio of the Benefit Index for the year of payment to the Benefit Index for the year in which the person to whom or in respect of whose service the pension is payable ceased to be a member of the forces, and subtracting the amount of the annuity or annual allowance. The Benefit Index for the years prior to 1971 is shown in a Schedule in the Act. The Benefit Index for any year after 1970 is equal to the Benefit Index for the preceding year multiplied by the average of the Consumer Price Index for Canada for the twelve-month period ending on September 30 of that preceding year and divided by the corresponding average for a period one year earlier. Prior to 1973, the increase in the Benefit Index was limited to a maximum of 2% in any year. An amendment to the Supplementary Retirement Benefits Act in 1973 removed that limit and provided that the increase payable in January 1974 would take into account increases in the Consumer Price Index above the 2% ceiling since 1970. In January 1983, an amendment made as part of a general economic restraints program limited the increase for 1983 and 1984 to 6.5% and 5.5% respectively.

Under the terms of the original Act of 1970, the supplementary benefits were payable to all former contributors in receipt of annuities or annual allowances who had attained the age of 60, or, if less than that age, were unfit to perform duties as a member of the regular force by reason of any mental or physical disability, and to all spouses and children in receipt of annual allowances. The amendments effective January 1, 1973 provided for the payment of benefits to former contributors aged 55 to 59 and in receipt of annuities or annual allowances in cases where the total of service and age equals or exceeds 85.

The Royal Canadian Mounted Police Superannuation Act was amended in 1970, by the addition of Part III, to require that contributors pay 0.5% of their pay to the Supplementary Retirement Benefits Account in addition to their contributions to the Superannuation Account. A further amendment in 1973 increased this contribution rate from 0.5% to 1.0%, commencing January 1, 1977. Such contributions are payable until the member retires. The Government makes credits to the Account equal to the contributions of the members.

Interest is also credited to the Supplementary Retirement Benefits Account at the end of each quarter. The amount of the interest is calculated monthly on the minimum balance at a rate of interest representative of the yield on outstanding Government of Canada bonds having a term to maturity of five years, less 1/8 of 1%.

Prior to January 1, 1974, the Supplementary Retirement Benefits Act provided that all supplementary benefits would be charged to the Account. Since that date, benefits paid in respect of a former contributor are charged to the Account only until their accumulated total equals the aggregate of all amounts credited to that Account in respect of that person, including interest. Supplementary benefits paid in excess of that aggregate are then charged to the Consolidated Revenue Fund. The Act also provides for a return of contributions paid by a member to the Supplementary Retirement Benefits Account, to the extent that such contributions exceed any benefit that has been or may be paid to him or in respect of him.

The Supplementary Retirement Benefits Act applies to active members and former members of the Royal Canadian Mounted Police who are entitled to benefits under the Royal Canadian Mounted Police Pension Continuation Act as well as to those entitled to benefits under the Royal Canadian Mounted Police Superannuation Act. Contributions paid by both groups of members and other credits to the Account, and supplementary benefits paid to former members and their surviving spouses and children receiving basic benefits under either Act, and other charges to the Account during the fiscal years 1982-83 and 1983-84 are shown below.

Royal Canadian Mounted Police Supplementary Retirement Benefits
(in thousands of dollars)

Credits to Account	1982-83 $	1983-84 $
Contributions from members	5,584	6,043
Government credits	5,580	6,040
Interest	7,014	9,352
Transfers in	19	13
	18,197	21,448
Charges to Account		
Supplementary Benefits	302	302
Refunds on withdrawal	226	229
Transfers out	16	17
	544	548
Account Balance (Year end)	80,073	100,973
Benefits charged to Consolidated Revenue Fund	4,232	4,724

Under the partially funded system of financing supplementary retirement benefits as it existed on December 31, 1982, a substantial balance will be accumulated in the Supplementary Retirement Benefits Account. However, on the basis of the assumptions used for purposes of Section V of this report on the Royal Canadian Mounted Police Superannuation Account and, for consistency with other assumptions, an assumed rate of increase in the Consumer Price Index of 3.5% per annum, it has been estimated that some of the supplementary benefits - even in respect of current service - will likely remain a direct charge on the Consolidated Revenue Fund in the long run, unless the total of contributions and credits to the Supplementary Retirement Benefits Account were increased from 2.0% to about 7.2% of pay.

In any event, cost estimates relating only to Supplementary Retirement Benefits (or only to the RCMPSA) are extremely sensitive to economic assumptions. If principles of actuarial funding were to be applied to the Supplementary Retirement Benefits, it would be desirable to finance all pension benefits in respect of Superannuation Account contributors through one account; this could be expected to result in greater stability and avoid the situation where one account would have a surplus while the other had a deficit.

In the remaining part of this Appendix the effects of fully funding the existing level of supplementary retirement benefits are presented.

(A) Normal Actuarial Cost, if benefits pursuant to the Supplementary Retirement Benefits Act as it existed in 1982* were considered superannuation benefits

Using the assumptions and actuarial cost method described in Sections III and IV of this report and an annual Consumer Price Index increase of 3.5%, the normal actuarial cost (i.e., the total required from the contributors and the Government combined to fund superannuation benefits in respect of current service, increasing in accordance with the Benefit Index) was calculated to be 24.523% of payroll. After making allowance for coordination with contributions payable to the Canada Pension Plan,** contributions from members, including 1% contributions to the Supplementary Retirement Benefits Account, are calculated to be equivalent to 6.383% of pay. It follows that credits on behalf of the Government in respect of the combined Benefits would have to be equivalent to about 18.140% of pay, or 2.84 times the contributions received from members of the forces.

In addition, a procedure analogous to the existing procedure could be adopted under which special credits would be made in respect of liabilities arising out of (i) general pay increases in excess of the assumed 5.0% per annum, and (ii) increases to annuities and allowances to former contributors and their surviving spouses and children in excess of the assumed 3.5%, either or both of which could be offset by interest earnings on the Account in excess of the assumed 6.5%. With such a procedure, the only gains and losses attributable to variation of experience from the basic economic assumptions that would emerge at periodic actuarial examinations are (i) gains from general pay increases and increases to annuities and allowances below the assumed rates, and (ii) losses and unused gains from interest earnings below and above the assumed rate, respectively. Alternatively, the more common practice of letting all actuarial gains and losses accumulate until the following actuarial examination could be adopted.

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* The pro-rating of the increase in the Benefit Index applicable to the first year following the year of retirement became effective January 1, 1983, but was assumed to be in force for purposes of this calculation.

** At the rate of 1.8% of Canada Pension Plan contributory earnings

(B) Valuation Balance Sheet combining Royal Canadian Mounted Police Superannuation and Supplementary Benefits including future adjustments to pensions in payment in accordance with assumed rate of inflation

This balance sheet is based on the same assumptions as were used for purposes of calculating the required contributions and credits in (A) above. It differs from the balance sheet in Section VI of this report to the extent that (i) the assets include a share of the Supplementary Retirement Benefits Account and the present value of future Government credits related to instalment payments based on a factor of 2.84 times the amount from contributors, (ii) the value of prospective benefits to and in respect of active contributors includes provision for increases to annuities and allowances in payment at the rate of 3.5% per annum*, and (iii) the value of prospective benefits to and in respect of former contributors includes the value of all supplementary benefits based on the Benefit Index for January 1983 and makes provision for continued increases at the rate of 3.5% per annum*.

Assets

	(millions)
Balance of Royal Canadian Mounted Police Superannuation Account and share of RCMPSA contributors in Supplementary Retirement Benefits Account	$ 1,415.2
Credits from Government outstanding at December 31, 1982, and made in 1983	52.5
Actuarial present value of future contributions from members and former members of the Force plus future credits from Government (assumed equal to 2.84 times the amount from contributors) for prior service	11.8
Total assets	$ 1,479.5
Unfunded actuarial liability	$ 704.2
	$ 2,183.7

Liabilities

Actuarial present value of prospective benefits to and in respect of contributors who are members of the Force	$ 1,694.2
Present value of future benefits to persons entitled to an annuity or annual allowance	489.5
Total Liabilities	$ 2,183.7

* Subject to deferment, as may be provided by the SRBA.

The foregoing balance sheet indicates an unfunded actuarial liability of about $704 million as at December 31, 1982. The annual payment required to amortize that amount over twenty-five years beginning in 1983 would have been $56 million.

It will be noted that, as in the balance sheet in Section VI of this report, the value of the notional investment was taken at par. Discounted at the assumed interest rate, the value would have been higher by about $569 million. In this connection, it is interesting to note that the actuarial present value (on December 31, 1982) of liabilities attributable to "excess salary increases" and "excess indexing" for the three full years following the valuation date was of the order of $63 million.

(C) Valuation Balance Sheet combining Royal Canadian Mounted Police Superannuation and Supplementary Retirement Benefits including future adjustments to pensions in payment in accordance with assumed rates of inflation, using streamed economic assumptions

This balance sheet is constructed using the assumptions and methods employed for purposes of (B) above, except that streamed economic assumptions were used. The purpose of these assumptions is to recognize specifically that existing notional investments will produce higher earnings than the level long term interest assumption used for purposes of this report and in parts (A) and (B) of this Appendix. The streamed assumptions also take account of the actual experience with regard to general salary increases and inflation (i.e., indexing) to the beginning of 1986 after which the rates are graded into the level long term assumptions. There is a danger in this approach, under the present economic circumstances, in that it may eliminate any expected actuarial gain from investment earnings that could cushion the effect of future actuarial losses from salary increases and indexing in excess of the assumed rates. Accordingly, an explicit margin was introduced into the assumed rates of interest.

Streamed Economic Assumptions

Year	Rates of Interest: New Money %	Rates of Interest: Projected Fund Yield %	Rates of Interest: Assumed Fund Yield %	Assumed Increases in CPI %	General Salary Increases %	Rate of Indexing %
1983*	diverse	10.6	10.6	5.8	6.0	6.5
4*	"	10.8	10.8	4.4	5.0	5.5
1985*	"	11.2	10.7	4.0	3.0	4.6
6	10.5	11.3	10.3	3.5	4.0	3.9
7	9.5	11.2	10.2		4.5	3.5
8	8.5	11.0	10.0		5.0	3.5
9	7.5	10.7	9.7		5.0	3.5
1990	6.5	10.3	9.3			
1		9.9	8.9			
2		9.6	8.6			
3		9.3	8.3			
4		9.0	8.0			
1995		8.7	7.7			
6		8.5	7.5			
7		8.3	7.3			
8		8.1	7.1			
9		7.9	6.9			
2000		7.7	6.7			
1		7.3	6.3			
2		7.1	6.1			
3		7.0	6.0			
4		6.9	6.0			
2005		6.7	6.0			
6		6.6	6.0			
7		6.6	6.0			
8		6.5	6.0			
9		6.5	6.0			

* Factors for 1983, 1984 and 1985 and the rate of indexing for 1986 are based on actual experience. The interest rate on new money varied between 10.9% and 12.1% in 1983, between 12.0% and 14.1% for 1984 and between 10.8% and 12.57% for 1985. The projected fund yield is based on an open group with a constant active force, using the distribution of new entrants for 1982.

Balance Sheet based on Streamed Economic Assumptions

Assets

	(millions)
Balance of Royal Canadian Mounted Police Superannuation Account and share of RCMPSA contributors in Supplementary Retirement Benefits Account	$ 1,415.2
Credits from Government outstanding at December 31, 1982, and made in 1983	52.5
Actuarial present value of future contributions from members and former members of the Force plus future credits from Government (assumed equal to 2.84 times the amount from contributors) for prior service	9.7
Total Assets	$ 1,477.4
Unfunded actuarial liability	$ 105.1
	$ 1,582.5

Liabilities

Actuarial present value of prospective benefits to and in respect of contributors who are members of the Force	$ 1,200.0
Actuarial present value of future benefits to persons entitled to an annuity or annual allowance	382.5
Total Liabilities	$ 1,582.5

It should be noted that, as in the case of the balance sheet in the report and the others in this Appendix, the unfunded actuarial liability does not include the unamortized portion of past deferred charges amounting to $54 million as at December 31, 1982. This is particularly significant in the case of the foregoing balance sheet, since there would not be much by way of interest credits in excess of the assumed rate available for purposes of amortizing these outstanding deferred charges.

The balance sheet suggests that through the use of streamed assumptions, the total actuarial liabilities and, therefore, the notional unfunded actuarial liability as at December 31, 1982 might be reduced by about $600 million. The annual payment required to amortize the unfunded liability over 25 years beginning in 1983 on the basis of the projected yield of the Account would have been $11 million.

APPENDIX 2

Summary of the Royal Canadian Mounted Police Superannuation Act - Part I (Basic Pensions)

(The explanatory notes referred to in this Appendix are given in Section D.)

A. Coverage

Persons covered by this plan comprise

(a) all members of the Royal Canadian Mounted Police, referred to in this report as the "Force", except a small number who have been members of the Force since March 1, 1949 but did not elect to become contributors under this Act,

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

(c) surviving spouses and children of deceased contributors who are entitled to annual allowances payable out of the Royal Canadian Mounted Police Superannuation Account.

B. Contributions and Credits to the Account

By Contributor

The rate of contribution for members of the Force covered by Part I of the RCMPSA is 6.5%* of pay reduced by the amount that the contributor is required to contribute under the Canada Pension Plan in respect of pay received as a member of the Force. (For example, in 1983 the reduction was 1.8% of pay between $1,800 and $18,500 per annum.) Contributions for current service cease when a contributor has credit for 35 years of pensionable service.

A contributor may elect to contribute in respect of any period of prior pensionable service as described in Note 1 on page 34.

Subject to a few minor exceptions, if the election to contribute for a period of prior pensionable service is made within one year of the member becoming a contributor, the amount that the member is required to contribute is equal to the total contributions that he would have had to make during that period of prior pensionable service if the contributions had been computed for any period of service described in Note 1, according to the rate of pay applicable to the contributor on the most recent occasion on which he became a contributor under the Act and at the rates of contribution applicable to the period adjusted for integration with the Canada Pension Plan. All contributions are increased by simple interest at the rate of 4% per annum from the middle of each fiscal year of prior service to the date of election.

If a contributor fails to make an election in respect of a period of prior pensionable service within the prescribed time, he may make an election at any later time while he is still a member of the Force provided that he is in good health at date of election. However, the rate of pay used in determining the contributions for such prior service will be the rate of pay authorized to be paid to the contributor at the time he makes his election.

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* The rate was 6% for males before April 1, 1969 and 5% for females before February 1, 1976.

Contributions in respect of prior service may be paid in a lump sum, or by monthly instalments, payable for life, or for a period ceasing upon death or completion of a fixed number of years whichever is earlier. Monthly instalments are computed on the basis of the Canadian Life Table No. 2 (1941) Males or Females, as the case may be, and interest at 4% per annum.

By Government

The Government makes credits to the Account as follows:

(a) in each quarter such multiple of the total amount paid into the said Account during the preceding quarter by way of contributions in respect of current services and past services rendered by contributors as is specified by the Minister of Finance; (During the period under review a multiple of 2.0 was in effect, based on the 1974 actuarial report.)

(b) in each fiscal year, an amount representing interest on the balance in the Account from time to time calculated at the interest rate assumed in the preceding actuarial valuation and at such "supplementary" rate as might be provided by regulations; (See Section IIIB of this report for further details.)

(c) following authorization of any pay increase applicable to at least one per cent of the members of the Force, an amount representing, in the opinion of the Minister of Finance, the increase in the net liability for benefits resulting from that pay increase; (The amount so credited is charged to the Consolidated Revenue Fund in five equal annual instalments commencing in the fiscal year in which the pay increase was authorized. During the period under review, on the basis of the report on the 1974 actuarial valuation, the amount credited was 1.6 times the amount of increase in the total annual payroll in excess of 5.5%.)

(d) following the laying before Parliament of any actuarial report an amount, as in the opinion of the Minister of Finance is required, in addition to the amount then to the credit of the said Account, to meet the cost of the benefits payable from the Account. (The amount so credited is charged to the Consolidated Revenue Fund in five equal annual instalments commencing in the fiscal year in which the report is laid before Parliament.)

The Minister of Finance may apply the supplementary interest described in (b) above to reduce the instalments described in (c) and (d) above.

C. Summary of Benefits

1. Contributors who hold a rank in the Force

Type of Termination	Benefit depending on service (Note 1): Under 10 years of service in the Force*	10 or more years of service in the Force*
Retirement because of age (Note 2)	Return of contributions (Note 3), or cash termination allowance (Note 4), whichever is the greater	Immediate annuity (Note 5)
Compulsory retirement to promote economy or efficiency in the Force	Return of contributions	1) With 10 to 20 years, at option of contributor: return of contributions, deferred annuity (Note 6), or reduced annuity (Note 7) 2) With 20 or more years: immediate annuity
Compulsory retirement because of misconduct	Return of contributions, or in the discretion of the Treasury Board (Note 8) cash termination allowance if the contributor has reached retirement age	Return of contributions, or in the discretion of Treasury Board (Note 8) (i) if the contributor has reached retirement age: immediate annuity (ii) if the contributor has not reached retirement age: deferred annuity, reduced annuity (immediate), or immediate annuity

* A contributor must have 10 or more years of pensionable service to qualify for a benefit other than a return of contributions.

Type of Termination	Under 10 years of service in the Force*	10 or more years of service in the Force*
Voluntary retirement - contributors other than officers	Return of contributions	1) With 10 to 20 years, at option of contributor: return of contributions, or deferred annuity 2) With 20 to 25 years: annual allowance (Note 9) 3) With 25 or more years: immediate annuity
Voluntary retirement - officer contributors	Return of contributions	1) With 10 to 20 years: return of contributions 2) With 20 to 35 years, unless qualified in (3) below, at option of contributor: return of contributions, deferred annuity or annual allowance (Note 10) 3) With 30 or more years of pensionable service at age 55 or older: immediate annuity 4) With 35 or more years: immediate annuity

	Under 10 years of pensionable service	10 or more years of pensionable service
Compulsory retirement because of disability	Return of contributions, or cash termination allowance, whichever is greater	Immediate annuity

2. Contributors who do not hold a rank in the Force

Type of Termination	Under 5 years of pensionable service	5 or more years of pensionable service (Note 1)
Retirement because of age (Note 2)	Return of contributions	Immediate annuity
Compulsory retirement because of disability	Return of contributions or cash termination allowance, whichever is greater	Immediate annuity
Compulsory retirement because of misconduct	Return of contributions	Return of contributions or in the discretion of the Treasury Board (Note 8) (i) if the contributor has reached retirement age: immediate annuity (ii) if the contributor has not reached retirement age: deferred annuity, annual allowance (Note 10) or immediate annuity

Type of Termination	Under 5 years of pensionable service	5 or more years of pensionable service
Retirement for any other reason	Return of contributions	(a) with 35 or more years service in the Force: immediate annuity (b) with 30 or more years of pensionable service at age 55 or older: immediate annuity (c) in all other cases, at the option of the contributor, return of contributions, deferred annuity or one of the following benefits: (i) with 25 or more years of pensionable service at age 50 or older: immediate annual allowance (ii) if compulsorily retired at age 55 or older with 10 or more years of service in the Force: immediate annual allowance (iii) in all other cases if age 50 or over: immediate annual allowance if under age 50: deferred annual allowance

3. All Active Contributors

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

4. Former contributors entitled to immediate annuities, annual allowances or deferred annuities

Type of termination	Benefit
Death leaving no spouse or eligible children under age 25	Residual benefit (Note 13)
Death leaving spouse and/or eligible children under age 25	Annual allowance to surviving spouse and/or children

D. Explanatory Notes to Summary of Benefits in Section 3 of this Appendix

Note 1: Service

1. Service in the Force

For purposes of the plan, "service in the Force" includes any period of service as a special constable of the Force before the date on which the Act came into force and any period of service as a member of a provincial or municipal police force that has been taken over by the Force.

2. Pensionable Service

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

(a) a period of service

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

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

(iii) in the regular forces,

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

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

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

Note 2: Retirement because of Age

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

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

Note 3: Return of Contributions

"Return of Contributions" means payment of an amount equal to the total current and prior service contributions paid by a contributor plus interest at the rate of 4% per annum to December 31st of the year immediately preceding the year the contributor ceased to be a member of the Force. Interest is credited each December 31st (beginning in 1974) on the accumulated contributions with interest as at the preceding December 31st.

Note 4: Cash Termination Allowance

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

Note 5: Immediate Annuity

"Immediate annuity" means an annuity that becomes payable immediately upon retirement. The annual amount of the annuity is equal to 2% of the contributor's average annual pay in respect of any selected six-year period of pensionable service multiplied by his number of years of pensionable service not exceeding 35. If a contributor has reached age 65 and ceased to be a member of the Force, or if he is entitled to a disability pension under the Canada Pension Plan, the amount of the annuity to which he is entitled under the Act is reduced by 0.7% of his average annual pay used in determining the amount of the annuity, not exceeding the "Average Maximum Pensionable Earnings" multiplied by the number of years of pensionable service after 1965 or after he attained age 18, whichever is later, but not exceeding 35 years. "Average Maximum Pensionable Earnings" is the average of the Year's Maximum Pensionable Earnings, as defined in the Canada Pension Plan, during the contributor's last 3 years of service.

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

Note 6: Deferred Annuity

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

If a former contributor under the age of 60 eligible for a deferred annuity under the Act becomes disabled, his annuity is converted to an immediate annuity. If he later ceases to be entitled to a disability pension and has not reached age 60, his immediate annuity reverts to a deferred annuity.

Note 7: Reduced Immediate Annuity

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

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

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

(b) at the discretion of the Treasury Board, if he is compulsorily retired to promote economy or efficiency (Note 8).

Note 8: Retirement because of Misconduct

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

Note 9: Annual Allowance (other than officers or civilian members)

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

Note 10: Annual Allowance (officers or civilian members)

"Annual allowance" in the case of an officer or a civilian member (i.e., a contributor who does not hold a rank), means an optional annuity payable immediately or when the contributor attains age 50, if later. The amount of the allowance is equal to the amount of the deferred annuity to which he is entitled reduced by 5% of such annuity multiplied by (a) the greater of 55 minus his age and 30 minus the number of years of pensionable service, if the contributor had more than 25 years of pensionable service (and in the case of a civilian, attained age 50), (b), 30 minus the number of years of pensionable service, in the case of a civilian contributor compulsorily retired for any reason at age 55 or older with 10 years of service in the Force, or (c) 60 minus the age when the allowance becomes payable, in every other case. However, the reduction in (b) may be waived by the Treasury Board. Age and service are expressed in the nearest one-tenth of a year.

This type of annual allowance may be chosen by

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

(b) a civilian member who retires for any reason other than disability or misconduct with 5 years of service in the Force and 5 years of pensionable service and is not entitled to a full immediate annuity.

If a former contributor entitled to an annual allowance commencing at age 50 becomes disabled before reaching age 50, his entitlement changes from an annual allowance deferred to age 50 to an immediate annuity.

Note 11: Eligible Children

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

Note 12: Annual Allowances (surviving spouse and children)*

Annual allowances to the surviving spouse and children of a contributor or former contributor are annuities that become payable immediately upon the death of the contributor. The amount of the allowances are determined with references to a basic allowance and are ordinarily payable in equal monthly instalments.

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

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

(a) If the age of the contributor exceeded that of his surviving spouse by 20 or more years the allowance is reduced as prescribed by regulation.

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

(c) If a surviving spouse remarries, the payment of any allowance is suspended but is resumed in the event of dissolution or annulment of that marriage or death of his or her spouse by that marriage. In lieu of any further claim to the payment of the allowance, an amount equal to the return of contributions less the total amount of benefit payments made to the contributor and to his surviving spouse and children may be paid to the surviving spouse at any time before the dissolution or annulment of that marriage or the death of her spouse by that marriage, if there is no child of the contributor entitled to an allowance.

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

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* In this Note, as in this whole report, to ensure equality of status of male and female contributors, terms importing a male person may be read to import a female person and vice-versa.

The annual allowance for an eligible child is equal to 20% of the basic allowance or, if the contributor died leaving no spouse or the spouse is dead to 40% of the basic allowance, provided that the total amount of allowances to children shall not exceed 80% of the basic allowance, or if the contributor died without leaving a spouse or the spouse is dead, 160% of the basic allowance. Allowances are not payable to children of a spouse who is not entitled to an allowance as the result of death of a contributor within one year of marriage under circumstances stated in paragraph (b) of this Note. Except as provided by regulation, allowances are not payable to a child who was born, adopted or became a stepchild of a member of the Force when he was over 60 years of age unless he became or continued to be a contributor after he was 60 years of age.

Note 13: Residual Benefit

If upon the death of a contributor there is no person to whom an allowance povided under the terms of the Act may be paid, or if the persons to whom such allowances may be paid die or cease to be entitled thereto and no other amount may be paid to them a residual benefit may be payable.

If the contributor was not a member of the Force upon or after December 20, 1975, any amount by which the amount of return of contributions exceeds the aggregate of all amounts paid to those persons and to the contributor is payable to the estate.

If the contributor was a member of the Force upon or after December 20, 1975, any amount by which the greater of the amount of the return of contributions and an amount equal to five times the immediate annuity to which the contributor was or would have been entitled at the time of his death exceeds the aggregate of all amounts paid to those persons and to the contributor is payable to the beneficiary, if one has been nominated by the contributor or otherwise to the estate.

APPENDIX 3

Promotional Salary Scale

Rate of Annual Increment in Pay

Attained Age	Rate	Attained Age	Rate	Attained Age	Rate
19	0.05527	33	0.01562	47	0.01491
20	0.05161	34	0.01568	48	0.01517
21	0.04759	35	0.01590	49	0.01559
22	0.04333	36	0.01617	50	0.01611
23	0.03899	37	0.01641	51	0.01667
24	0.03473	38	0.01655	52	0.01716
25	0.03069	39	0.01657	53	0.01747
26	0.02701	40	0.01644	54	0.01749
27	0.02378	41	0.01619	55	0.01711
28	0.02110	42	0.01586	56	0.01624
29	0.01898	43	0.01550	57	0.01480
30	0.01742	44	0.01517	58	0.01277
31	0.01639	45	0.01493	59	0.01014
32	0.01582	46	0.01484		

Equivalent Level Annual Rate of Increment in Pay

	Duration of Service							
Entry Age	5	10	15	20	25	30	35	40
20	0.043	0.034	0.028	0.025	0.023	0.022	0.021	0.020
25	0.024	0.020	0.019	0.018	0.018	0.017	0.017	
30	0.016	0.016	0.016	0.016	0.016	0.016		
35	0.016	0.016	0.016	0.016	0.016			
40	0.016	0.015	0.016	0.016				
45	0.015	0.016	0.015					
50	0.017	0.016						
55	0.014							

APPENDIX 4

Rates of Decrement for Active Contributors

Age	Return of Contributions	Disability	Retirement	Mortality
19	0.04160	0.00511		0.00036
20	0.04160	0.00411		0.00037
21	0.04130	0.00310		0.00039
22	0.04070	0.00200		0.00040
23	0.03976	0.00150		0.00042
24	0.03864	0.00100		0.00044
25	0.03712	0.00050		0.00046
26	0.03528	0.00030		0.00048
27	0.03320	0.00020		0.00051
28	0.03096	0.00020		0.00053
29	0.02865	0.00020		0.00055
30	0.02635	0.00030		0.00058
31	0.02409	0.00030		0.00061
32	0.02192	0.00040		0.00064
33	0.01984	0.00040		0.00068
34	0.01784	0.00050		0.00072
35	0.01591	0.00051		0.00079
36	0.01406	0.00062		0.00082
37	0.01228	0.00072		0.00087
38	0.01060	0.00082		0.00092
39	0.00906	0.00092	0.01640	0.00098
40	0.00772	0.00112	0.03257	0.00105
41	0.00664	0.00132	0.04817	0.00114
42	0.00587	0.00163	0.06162	0.00125
43	0.00545	0.00183	0.07157	0.00141
44	0.00540	0.00203	0.07754	0.00160
45	0.00570	0.00232	0.07990	0.00181
46	0.00631	0.00252	0.07940	0.00206
47	0.00715	0.00272	0.07672	0.00234
48	0.00812	0.00293	0.07273	0.00263
49	0.00913	0.00323	0.06900	0.00294
50	0.01007	0.00362	0.06819	0.00328
51	0.01087	0.00422	0.07347	0.00362
52	0.01147	0.00483	0.08729	0.00399
53	0.01187	0.00570	0.10994	0.00438
54	0.01207	0.00682	0.13904	0.00479
55	0.01214	0.00822	0.17033	0.00522
56	0.01214	0.01030	0.19951	0.00566
57	0.01214	0.01324	0.22406	0.00614
58	0.01214	0.01670	0.24392	0.00664
59	0.01214	0.02120	0.26088	0.00721

APPENDIX 5

Rates of mortality assumed for former contributors and surviving spouses entitled to annuities or annual allowances

Age	Males	Females	Age	Males	Females
30	.000665	.000317	70	.030508	.011436
31	.000707	.000337	71	.034010	.013267
32	.000753	.000360	72	.037481	.015393
33	.000804	.000384	73	.040859	.017749
34	.000860	.000411	74	.044336	.020422
35	.000923	.000440	75	.048150	.023310
36	.000990	.000471	76	.052625	.026446
37	.001065	.000506	77	.058104	.029884
38	.001149	.000545	78	.064370	.020422
39	.001241	.000587	79	.071090	.037897
40	.001343	.000633	80	.078465	.042584
41	.001471	.000684	81	.086175	.047446
42	.001645	.000739	82	.094185	.052747
43	.001858	.000801	83	.102623	.058430
44	.002113	.000868	84	.111345	.065222
45	.002403	.000943	85	.120327	.072671
46	.002728	.001026	86	.129626	.080878
47	.003087	.001117	87	.139206	.089947
48	.003477	.001217	88	.149248	.099999
49	.003898	.001328	89	.159833	.111169
50	.004346	.001453	90	.171035	.123620
51	.004824	.001569	91	.182649	.137331
52	.005329	.001702	92	.194545	.152675
53	.005861	.001849	93	.206688	.169885
54	.006419	.002014	94	.221161	.189226
55	.007005	.002199	95	.236861	.211002
56	.007616	.002414	96	.253147	.235552
57	.008255	.002666	97	.270850	.258059
58	.008954	.002963	98	.290163	.280237
59	.009805	.003310	99	.309125	.304679
60	.010788	.003707	100	.329825	.331630
61	.011874	.004157	101	.352455	.361361
62	.013044	.004658	102	.377220	.394167
63	.014319	.005208	103	.406205	.430366
64	.015824	.005831	104	.441497	.471522
65	.017588	.006498	105	.485182	.519196
66	.019619	.007200	106	.539343	.574950
67	.021903	.007944	107	.606069	.640345
68	.024367	.008829	108	.687444	.716944
69	.027241	.009976	109	1.000000	1.000000

APPENDIX 6

Assumed Rates of Remarriage for Surviving Spouses

Widows

Age at becoming widow	Select Rates Year of Widowhood 1st yr.	3rd yr.	5th yr.
25	.050	.148	.132
30	.029	.086	.076
35	.018	.048	.042
40	.011	.027	.023
45	.006	.015	.012
50	.004	.008	.006
55	.002	.004	.003

Age	Ultimate Rates*
30	.061
35	.040
40	.025
45	.014
50	.008
55	.004
60	.002

Widowers

Age at becoming widower	Select Rates Year of being a widower 1st yr.	3rd yr.	5th yr.
25	.071	.258	.258
30	.065	.215	.198
35	.047	.130	.116
40	.031	.078	.069
45	.019	.048	.040
50	.013	.028	.022
55	.008	.014	.011

Age	Ultimate Rates*
30	.198
35	.139
40	.094
45	.059
50	.027
55	.014
60	.009

Proportions of Students Entitled to Allowances Remaining Eligible for Allowances at the end of the year of age

Age	Proportion
18	0.50
19	0.65
20	0.80
21	0.60
22	0.50
23	0.50
24	0.30

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* Rates are duration-specific (select) for 14 years for widows, 5 years for widowers.

APPENDIX 7

Proportions of Deceased Contributors Leaving Eligible Spouses and Average Age of Spouse Corresponding to Age of Contributor at Death

Age at Death	Proportions Leaving Eligible Spouses	Average Age of Spouse	
		Female	Male
20	0.175	20	22
25	0.550	24	27
30	0.839	29	32
35	0.896	34	37
40	0.919	38	42
45	0.957	43	47
50	0.963	47	52
55	0.965	52	57
60	0.964	56	62
65	0.792	61	67
70	0.729	65	72
75	0.635	69	77
80	0.513	73	82
85	0.378	76	87
90	0.251	78	92
95	0.129	79	97
100	0.012	80	102

APPENDIX 8A

Male Contributors as at December 31, 1982

Number of Contributors
and
Average Current Pay

Age/Serv	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	0-39
15-19	2 20394								2 20394
20-24	1380 26379	5 30701							1385 26395
25-29	1519 27664	1768 30591	30 31272						3317 29257
30-34	366 27022	1477 30541	2103 32239	40 33767					3986 31146
35-39	114 26960	421 30169	842 32849	1760 34894	23 38055				3160 33457
40-44	74 26034	134 29307	95 32441	465 35657	1113 38507	64 40694			1945 36493
45-49	61 25447	95 27955	35 34517	43 33000	239 38687	532 41891	27 44712		1032 38347
50-54	21 25241	87 28131	52 30818	17 31329	52 33907	132 42038	246 46184	5 51230	612 39285
55-59	5 25399	30 27578	33 28551	4 31968	14 29805	6 37202	29 43718	- -	121 32502
60-70	- -	2 20064	12 29456	1 33804	1 25560	2 27048	- -	- -	18 28170
15-70	3542 26980	4019 30343	3202 32350	2330 34961	1442 38270	736 41735	302 45816	5 51230	15578 32260

Average Age: 34.3

Average Service: 11.6

APPENDIX 8B

Female Contributors as at December 31, 1982

Number of Contributors
and
Average Current Pay

Age/Serv	0-4	5-9	10-14	15-19	20-24	25-29	30-34	0-34
20-24	306 24292	1 30684						307 24313
25-29	327 24535	165 28289	- -					492 25794
30-34	101 23777	142 27754	25 27742	- -				268 26254
35-39	31 22144	48 26679	30 28443	7 29256	- -			116 26079
40-44	28 22161	25 25456	11 26894	2 25542	2 25848	- -		68 24346
45-49	21 22356	23 24727	15 28634	6 28710	6 32298	- -	- -	71 25828
50-54	10 22679	12 23408	10 24936	6 29644	5 29954	- -	1 27780	44 25283
55-59	2 23214	3 22824	12 25529	8 27492	5 28171	1 25944	- -	31 26064
60-70	2 22416	1 36888	7 28653	3 22384	- -	- -	- -	13 26880
15-70	828 24097	420 27408	110 27531	32 27909	18 29784	1 25944	1 27780	1410 25514

Average Age: 31.2

Average Service: 5.1

APPENDIX 9A

Retired Contributors as at December 31, 1982

	Other than Disability Pension					Disability Pension				
	Number			Annual Pension*		Number			Annual Pension*	
Age	M	F	Total	RCMPSA ($)	SRBA ($)	M	F	Total	RCMPSA ($)	SRBA ($)
32-34	2	-	2	8,916	1,730	1	-	1	2,976	1,267
35-37	5	-	5	18,984	8,554	1	1	2	7,668	1,482
38-40	15	-	15	74,423	24,988	6	-	6	25,788	9,114
41-43	138	-	138	1,105,963	236,051	6	-	-	25,452	13,501
44-46	287	1	288	2,749,340	734,834	11	-	11	84,852	29,529
47-49	356	-	356	3,281,719	1,450,013	10	-	10	76,872	33,547
50-52	467	-	467	4,033,903	2,461,296	18	-	18	126,720	64,021
53-55	247	-	247	2,063,704	1,405,161	17	2	19	105,696	78,847
56-58	118	3	121	1,225,912	643,580	4	2	6	30,132	16,195
59-61	113	13	126	1,114,487	732,480	9	1	10	34,464	41,130
62-64	100	6	106	833,349	707,223	5	2	7	25,764	33,714
65-67	66	8	74	423,663	481,875	9	-	9	32,340	49,746
68-70	77	6	83	400,396	582,966	-	-	-	-	-
71-73	47	4	51	202,134	340,924	3	-	3	6,156	10,241
74-76	30	1	31	96,946	183,561	1	-	1	1,812	4,374
77-79	20	1	21	71,969	141,269	-	-	-	-	-
80-82	8	-	8	27,636	58,527	-	-	-	-	-
83-85	-	-	-	-	-	-	-	-	-	-
86-88	4	-	4	5,532	13,983	-	-	-	-	-
Total	2100	43	2143	17,738,974	10,209,014	101	8	109	586,692	386,708

* RCMPSA benefits deferred to age 60 as well as SRBA benefits deferred to the earlier of age 60 and the age when age plus service equal 85 are included in these amounts. Benefit amounts also reflect accrued indexation to January 1, 1983, and CPP offsets for ages greater than 64 or for disability pensions where applicable.

APPENDIX 9B

Surviving Spouses as at December 31, 1982

Age	Number	Annual Allowance RCMPSA ($)	Annual Allowance SRBA ($)
26-28	2	1,812	782
29-31	8	10,224	3,591
32-34	3	5,436	1,222
35-37	11	23,964	8,714
38-40	7	13,116	11,511
41-43	9	20,604	12,471
44-46	29	89,388	52,943
47-49	24	83,316	57,737
50-52	18	61,608	47,367
53-55	11	36,300	25,504
56-58	9	15,132	19,783
59-61	16	44,256	48,220
62-64	18	38,844	58,629
65-67	20	34,440	62,138
68-70	21	35,112	67,805
71-73	22	37,632	73,937
74-76	19	26,856	54,386
77-79	8	11,544	23,678
80-82	4	4,020	9,629
83-85	2	1,848	4,823
86-88	1	1,368	3,054
89-91	1	1,476	3,291
Total	263	598,296	651,215