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REPORT ON THE ACTUARIAL EXAMINATION

OF THE

ROYAL CANADIAN MOUNTED POLICE SUPERANNUATION ACCOUNT

IN THE

CONSOLIDATED REVENUE FUND

AS AT

DECEMBER 31, 1979

Ce rapport est également
disponible en français

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, 1979

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, 1979 and have the honour to report thereon.

The last examination of this Account was made as of December 31, 1974 and included the amendments to the Royal Canadian Mounted Police Superannuation Act in 1975. No additional amendments 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 17.39% of pay. Allowing for coordination with the Canada Pension Plan, the effective rate of contribution to the Account from contributors is equivalent to 5.54% of pay. As a result, it is estimated that Government credits are required at a rate equal to 2.14 times the contributions from contributors.

The above 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 1.7 times the increase in the effective annual payroll in excess of 5.0%. 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, 1979 was $14.01 million. This is about 1.6% of total actuarial liabilities or equivalent to 4.0% of the effective annual payroll at the date of valuation.

This report and the above figures make no provision for benefits and increases in benefits related to increases in the cost of living. 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, are provided under the Supplementary Retirement Benefits Act and, pursuant to Part III of the R.C.M.P. Superannuation Act, contributors are required to pay special contributions to the Supplementary Retirement Benefits Account. Although these provisions do not affect the operation of the R.C.M.P. 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 total employer-sponsored pension provisions for contributors to the R.C.M.P. Superannuation Account. This is done in Appendix 1.

II. Membership Statistics

In the following tables are shown pertinent statistics concerning contributors to the Account (members and former members of the Force and survivors eligible for allowances) during the five-year period from the date of the last valuation December 31, 1974, to the date of the current valuation December 31, 1979. These figures were obtained from data tapes supplied by the R.C.M.P. Although considerable difficulty was experienced in eliminating errors, we consider that the data in the form they entered into our calculations was reasonably satifactory for the purpose. Neverthless, it is hoped that a greater degree of accuracy in record maintenance will be achieved in the future.

A. Active Contributors***

Class of Contributor	Contributors on Jan. 1/75	New Entrants Jan. 1/75-Dec. 31/79	Type of Benefit	Terminations during period Jan. 1/75-Dec. 31/79: Death	Disability	Other**	Total	Contributors on Dec. 31/79
Officer			Annuity	2	2	20	24	
			Lump Sum	-	-	3	3	
	520*	1		2	2	23	27	494
Other Ranks			Annuity	15	26	846	887	
			Lump Sum	23	9	1569	1601	
	11879	4213		38	35	2415	2488	13604
Civilians			Annuity	21	9	66	96	
			Lump Sum	6	-	371	377	
	1127	890		27	9	437	473	1544
Total			Annuity	38	37	932	1007	
			Lump Sum	29	9	1943	1981	
	13526*	5104		67	46	2875	2988	15642

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*The total number of persons listed as being contributors at Dec. 31, 1974 in the data supplied for the previous valuation was 14,153. The number of officers shown on Jan. 1, 1975, includes other ranks as at Dec. 31, 1974 who were promoted to officer status before Jan. 1, 1980.

**Compulsory retirement because of age, promotion of economy or efficiency, or misconduct, together with all terminations from other causes.

***Tables showing numbers and average salary for quinary age-service groups of contributors on Dec. 31, 1979, are given in Appendix 8A and 8B.

B. Persons Entitled to Annuities or Annual Allowances (1)

Retired Contributors (2)

	Entitlements on Jan. 1/75	New Entitlements Jan. 1/75 to Dec. 31/79	Terminations Jan. 1/75 to Dec. 31/79		Entitlements on Dec. 31/79
			Death	Other(3)	
Other than Disability					
Male	701	909	68	3	1,539
Female	7	23	-	-	30
Sub-Total	708	932	68	3	1,569
Disability					
Male	59	30	10		79
Female	1	7	-	-	8
Sub-Total	60	37	10	-	87
Grand Total	768	969	78	3	1,656

Surviving Spouses (4)

Entitlements on Jan. 1/75	New Entitlements Jan. 1/75 to Dec. 31/79	Terminations Jan. 1/75 to Dec. 31/79		Entitlements on Dec. 31/79
		Death	Remarriage	
127	106	5	5	223

Children (5)

Entitlements on Jan. 1/75	Entitlements on Dec. 31/79
120	185

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(1) A table showing numbers and amounts of pension in age groups for persons entitled to benefits on Dec. 31, 1979 is given in Appendix 9A and 9B

(2) Includes former contributors entitled to deferred annuities (15 as at Dec. 31, 1979)

(3) Re-enrolments in the Force and transfers to other superannuation plans

(4) All females except for one new widower who remains entitled at December 31, 1979

(5) Includes 10 students aged 18 to 25 on Jan. 1, 1975 and 33 on Dec. 31, 1979

III. Valuation Assumptions

A. General Comments

For this valuation we continued the approach adopted for the preceding valuation of selecting assumptions that might be regarded as appropriate and reasonably "realistic", each on its own merits as well as when considered together in the long term. In comparison with the preceding valuation, slight changes were made in some of the explicit and implicit economic assumptions. The changes were discussed with and supported by officers in the Department of Finance and Treasury Board. Supportive advice was also obtained from the Economic Council of Canada.

We have maintained our objective of treating this plan in a manner consistent with the practice for industrial pension plans, 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 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 R.C.M.P. Superannuation Act, where the effect of a relatively higher assumed rate of interest tends to be partly offset by the effect of an accompanying relatively higher level of assumed salary increases, the effect is considerably smaller. Finally, for a fully indexed final-average salary plan, such as the R.C.M.P. Superannuation Act if it were combined with the Supplementary Retirement Benefits Act, the level of assumed inflation tends to have a relatively slight effect on costs, if its relationship to assumed interest rates and increases in salaries remains approximately the same. Clearly, the level of economic assumptions and the differentials between them are critical 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 reducing the 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 there is strong moral commitment 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 such 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 (current service contributions) to the pension fund for purposes of assessing the total normal actuarial cost. Such practice might make for more valid comparison of the value of expected pensions under different plans. However, setting up a contingent liability in the employer's balance sheet might well be interpreted as converting a moral commitment into a promise and that the additional benefits should, for practical purposes, 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 commitment regarding future adjustments.

B. Rate of Interest

Until the quarter ending June 30, 1969, the Act provided for interest to be credited to the Superannuation Account on the last day of each quarter in the fiscal year at the rate of 1% of the balance to the credit of the Account on the last day of the preceding quarter, i.e. approximately 4% per annum.

The 1969 amendments to the Act provided 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 amortization charges. The total rate at which interest is 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 that applied under the Canada Pension Plan, i.e., in 20-year bonds having a yield equivalent to the average yield on Government of Canada bonds with 20 or more years to maturity outstanding at that time.

For the quarter ending December 31, 1979, the total rate of interest credit was 1.9786%, which is equivalent to 8.15% per annum. The total annual rate of interest credit has remained above 6.5% after June 1974 and seems likely to continue above that level for some considerable period of time, given that rates of return on new noticnal investments have averaged about 15% during 1981 and 1982, even if allowance is made for a drop in anticipated inflation and interest rates to substantially lower levels.

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 3.0%.

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 typical real rate explicitly or implicitly assumed in 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. Salary 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. Such a scale is needed for valuation purposes, because benefits that become payable in the future depend on the rates of pay that will be received in the future.

There are twc main forces that tend to generate increases in rates of pay: First, a promotional force resulting from experience and training; second, an economic force related, directly or indirectly, to such factors as inflaticn, general increases in productivity, collective bargaining and labour market conditions. Increases in pay resulting from this second force are herein referred to as "general" increases.

The pattern of average promotional increases in pay is fairly predictable on the basis of past experience. However, a study of the rates of pay for members of the Force from December 31, 1974 to December 31, 1979 indicated a modification in the salary scale based on the experience prior to 1965 which had been used for the three last valuations. 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 forces 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 5.0%. In the long term, this rate is assumed to be composed of a 3.5% inflation factor and a 1.5% factor for real general increases related to productivity or labour market conditions.

The reduction in the assumption for real general salary increases from 2.5% to 1.5%, coupled with the reduction in the assumed real rate of return from 3.5% to 3.0%, is thought to result in a better representation of expected long-term economic conditions. The relationship between the assumptions for interest and salary increases would meet the current requirements of the Department of National Revenue applicable to employer-sponsored pension plans.

D. Rates of Retirement or Termination (for reasons <u>other than death)</u>

As a result of the investigation into the 1975-1979 experience, some different bases and valuation techniques were used in the current examination.

1. <u>Rates of Termination with Return of Contributions</u>

   The rates used were developed from the 1975-79 experience and are shown in Appendix 4.

2. <u>Rates of Disability</u>
   The rates developed from the 1970-74 experience were retained and are shown in Appendix 4.

3. <u>Rates of Retirement</u>
   The rates used were developed from the 1975-79 experience and are shown in Appendix 4. While the probability of retiring with a deferred pension was ignored in this valuation, the implicit probability of retiring with an annual allowance or immediate annuity after 20 years of service is substantially higher than for the previous valuation. Retirement is assumed to take place at the latest on attainment of age sixty.

E. Rates of Mortality and Remarriage

1. Active Contributors

The small numbers of deaths and of members do not provide sufficient data to determine a mortality table based solely on this experience. The table adopted for this valuation is the 1971 GAM (Group Annuity Mortality) Table. The rates are shown in Appendix 5.

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 small both in number and as a percentage of the total, being 5.3% of the 1,656 entitled to pensions at December 31, 1979, we have continued to assume the same rates of mortality for both groups. The assumed rates are taken from the 1971 GAM Table. These rates, and annuity values based on them, are shown in Appendix 5.

3. Surviving Spouses

The mortality rates chosen for the valuation of both present and prospective spouses' allowances were taken from the 1971 GAM Table. Remarriage rates used were the same as used for the valuation of the Public Service Superannuation Account as at Dec. 31, 1977, namely,

(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 Dec. 31, 1977.

Samples of the above mortality and remarriage rates are shown in Appendix 5 and 6, respectively.

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

The proportions of deceased active contributors and retired contributors used in the preceding valuation were merged together. The average ages of their surviving spouses used in the preceding valuation were deemed to remain appropriate. Both these factors are shown for quinquennial ages in Appendix 7.

G. Integration with Canada Pension Plan

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 would increase from $13,100 in 1980 at the rate of 5.0% per annum, i.e., at the rate assumed for general pay increases. This results in some understatement of the value of benefit reductions attributable to integration which, however, is offset by an overstatement arising out of the methodology of comparing the average salary at each age to the YMPE. The methodology for computing the normal actuarial cost ignores a small gradual decrease in the effective rate of employee contributions and corresponding increase in the required government credits until the YMPE reaches the level of average industrial earnings, but this effect will be overshadowed when the Canada Pension Plan contribution rates are increased.

As the conditions to be satisfied for a person to be considered as disabled and entitled to a disability annuity are more stringent under the Canada Pension Plan than under the R.C.M.P. Superannuation Act, we have assumed for purposes of valuing the reduction in annuities as a result of integration with the Canada Pension Plan that all reductions are effective at age 65.

H. Male Civilian and Female Members

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 12% 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 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 "Accrued Benefit (formerly "Unit Credit") Actuarial Cost Method". It contemplates contributions in any year sufficient to fund all future benefits in respect of service during that year. The actuarial liability is the actuarial present value of projected benefits in respect of service to the effective date of the valuation.

V. Required Contributions and Credits to the Account

Using the assumptions and the actuarial cost method described in Sections III and IV, respectively, and the distribution of active contributors as at December 31, 1979, shown in Appendix 8, the total required from contributors and the Government combined to fund future benefits in respect of current service was calculated to be 17.39% of pay.

After making allowance for integration with contributions payable to the Canada Pension Plan, contributions from contributors to the R.C.M.P. Superannuation Account were calculated to be equivalent to 5.54% of pay.

It follows that credits to the Account on behalf of the Government should be equivalent to 11.85% of pay or approximately 2.14 times the contributions received from contributors.

The above multiple of 2.14 for Government credits is somewhat higher than the multiple of 2.0 which has been in effect, as recommended in the 1974 actuarial report. The total of 17.39% of pay indicated above as being required corresponds to a figure of 16.8% indicated in the preceding report. The difference of 0.59% of pay is the net result of a decrease of about 1.1% of pay due to the changes in economic assumptions, an increase of about 2.1% of pay due to changes in various other actuarial assumptions and a decrease of about 0.4% of pay due to apparent changes in the distribution of members by age, salary and service.

The new 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 actuarial losses after allowing for any gains, following receipt of periodic actuarial reports. The R.C.M.P. 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 1.7 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 instalments. These instalments, together with instalments in respect of any actuarial deficiency reported as a result of quinquennial actuarial examinations, may be offset by interest earnings in the excess of 6.5% per annum.

VI. Valuation Balance Sheet and Gain and Loss Analysis

Using the assumptions and the actuarial cost method described in Sections III and IV, respectively, the results of the valuation are summarized and the status of the Account is shown in the following balance sheet.

Valuation Balance Sheet as at December 31, 1979

Assets

Balance of Account (Par value)*		$ 833,034,591
Credits from Government outstanding at December 31, 1979 and made in 1980		25,550,978
Actuarial present value of future contributions from the Government of Newfoundland		10,223
Actuarial present value of future instalments from contributors in respect of prior service:		
Members of the Force	$1,075,082	
Retired Contributors	299,810	1,374,892
Actuarial present value of future credits from the Government in respect of prior service (assuming 2.14 times the amount from contributors)		2,942,269
Total Assets		$ 862,912,953
Unfunded actuarial liability		$ 14,009,414
		$ 876,922,367

* The value of the Account as at December 31, 1979, determined by discounting the notional investments at the assumed valuation interest rate of 6.5%, was $1,014,020,055. As in the preceding valuation, such a value was not used, so as not to capitalize interest earnings in excess of the assumed valuation rate without any compensating provision for salary increases in excess of the assumed rate. A deferred charge of $31,655,000 was in the process of liquidation and would be considered an unfunded actuarial liability, if it were not included in the balance of the Account.

Liabilities

Actuarial present value of prospective benefits to active contributors and their dependants		$ 738,799,842
Actuarial present value of benefits to former contributors and their dependants entitled to an annuity or annual allowance:		
Retired Contributors	$133,917,735	
Widows	3,663,495	
Children	390,540	137,971,770
Benefits to former contributors due in 1979 and paid in 1980		150,755
Total Liabilities		$ 876,922,367

The foregoing balance sheet indicates an estimated unfunded actuarial liability of $14.01 million or about 1.6% of total actuarial liabilities. The major factors having a bearing on the development of this unfunded liability are identified in the following table.

Actuarial Gains and Losses
(in millions of dollars)

	Gain	Loss
Normal actuarial gains and losses		
- Liability for pensions in payment		38.27
- Promotional salary increases		28.84
- Net actuarial gain from other sources	2.25	
Extraordinary actuarial gains and losses		
- Overstatement in 1974 actuarial liabilities due to apparent errors in data	67.13	
- Interest credits		60.73*
- Special credits re salary increases	48.28*	
- Normal actuarial cost	36.70	
- Credit related to 1974 unfunded liability		13.62*
	154.36	141.46
Changes in actuarial assumptions and methods		
- Economic assumptions	32.14	
- Promotional salary scale		8.43
- Pensioner mortality		8.11
- Other assumptions and methods		42.51
	32.14	59.05
Total	186.50	200.51

* largely attributable to time lapse between effective dates of last valuation and of accounting procedures reflecting new valuation assumptions

VII Conclusion

In conclusion, we wish to acknowledge the participation of the Departmental Services Office of the R.C.M.P. which provided the basic records, and the Telecommunications and EDP Directorate which provided the programming and data processing related to the preparation of valuation data for members and former members of the Force and their survivors on the valuation date.

In my opinion

(a) the data on which this report is based are sufficient for the purpose of the valuation,

(b) the assumptions used are adequate and appropriate for the purpose of the valuation,

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

(d) this report conforms with the recommendations adopted by the Canadian Institute of Actuaries for the valuation of pension plans, but for an actuarial assessment of the complete pension plan for the R.C.M.P., including provisions of the Supplementary Retirement Benefits Act, reference must be made to Appendix 1 of this report.

Respectfully submitted,

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June 8, 1983

APPENDIX 1

Supplementary Retirement Benefits

In 1970, the Supplementary Retirement Benefits Act was passed to provide supplementary benefits related to increases in the cost of living for persons in receipt of pensions payable out of the Consolidated Revenue Fund. This Act applies to former contributors to the R.C.M.P. Superannuation Account and their dependants 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 R.C.M.P. 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 hold office, and subtracting the amount of the annuity or annual allowance; in the first calculation made for any contributor, the ratio is pro-rated to restrict the pension adjustment to the part of the calendar year of termination after the date of termination of employment. The Benefit Index for the years prior to 1971 are 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 cost of living above the 2% ceiling since 1970. In January 1983, an amendment made as part of a general economic restraint 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 age 60 or, if less than that age, were disabled, and to all widows 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 R.C.M.P. Superannuation Act was amended in 1970, by the addition of Part III, to require that contributors pay 0.5% of their salaries to the Supplementary Retirement Benefits Account in addition to their contributions to the Superannuation Account. By a further amendment in 1973, provision was made for an increase in 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 5 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, those 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 directly 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 in respect of him.

The Supplementary Retirement Benefits Act applies to active members and former members of the Force who are entitled to benefits under the R.C.M.P. Pension Continuation Act as well as to those entitled to benefits under the R.C.M.P. Superannuation Act. Contributions paid by both groups of members and other credits to the Account, and supplementary benefits paid to former members and their widows and children receiving basic benefits under either Act, and other charges to the Account during the fiscal years 1979-80 and 1980-81 are shown below.

R.C.M.P. Supplementary Retirement Benefits
(in thousands of dollars)

	1979-80	1980-81
Credits to Account		
Contributions from members	$ 3,465	$ 4,012
Government credits	3,455	4,011
Interest	2,637	4,330
Transfers in	12	14
	$ 9,569	$ 12,367
Charges to Account		
Supplementary Benefits	$ 60	$ 110
Refunds on withdrawal	300	400
Transfers out	7	7
	$ 367	$ 517
Balance in Account (end of year)	$ 32,018	$ 43,868
Charges to Consolidated Revenue Fund		
Supplementary Benefits	$ 8,312	$ 10,002

Under the partially funded system of financing supplementary retirement benefits as it existed on December 31, 1979, 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 R.C.M.P. Superannuation Account and, for consistency with the inflation factor implicit in those assumptions (see Section III B and C), an assumed rate of increase in the Consumer Price Index of 3.5% per annum, it has been estimated that the supplementary benefits will likely always remain a direct charge on the Consolidated Revenue Fund, unless the total of contributions and credits to the Supplementary Retirement Benefits Account were increased from 2.0% to about 7.1% of payroll, and provision were made to handle deviations of actual from expected experience. Even if normal contributions and credits were raised to this level, a substantial unfunded actuarial liability would remain, suggesting that the Consolidated Revenue Fund would have to be charged for a long time to come either with amortization payments or with a substantial portion of the supplementary retirement benefits payable.

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

In the remaining part of this Appendix the effects of more conventional methods of financing the existing level of supplementary retirement benefits are presented.

(a) Required Contributions and Credits to the R.C.M.P. Superannuation Account if benefits pursuant to the Supplementary Retirement Benefits Act as it existed in 1979* were considered superannuation benefits.

Using the above-noted assumptions, and methods analogous to those used for purposes of Section V of this report, the total required from the contributors and the Government combined to fund future superannuation benefits, increasing in accordance with the Benefit Index, in respect of current service was calculated to be 24.48% of payroll. This is the normal actuarial cost for benefits under the two Acts combined.

After making allowance for coordination with contributions payable to the Canada Pension Plan, contributions from contributors, including 1% contributions to the Supplementary Retirement Benefits Account, are calculated to be equivalent to 6.54% of pay.

It follows that credits on behalf of the Government in respect of the combined benefits would have to be equivalent to about 17.94 of pay, or 2.74 times the contributions received from contributors.

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 dependants in excess of the assumed 3.5%, 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 from interest earnings below the assumed rate. 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 appliable to the first year following the year of retirement became effective January 1, 1982, but was assumed to be in force for purposes of this calculation.

(b) Valuation Balance Sheet combining R.C.M.P. Superannuation and Supplementary Retirement Benefits including future adjustments to pensions in payment in accordance with assumed rate of inflation

This balance sheet 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, (ii) the value of prospective benefits to former contributors and their dependants includes the value of supplementary benefits payable at the rate in effect on December 31, 1979, and makes provision for continued increases at the rate of 3.5% per annum, and (iii) the value of prospective benefits to active contributors and their dependants includes provision for increases to annuities and allowances in payment at the rate of 3.5% per annum. In other words, all the assumptions are consistent with those used for purposes of calculating the required contributions and credits in (a) above.

Assets

Balance of R.C.M.P. Superannuation Account and share of Superannuation contributors in Supplementary Retirement Benefits Account	$ 860,065,847
Credits from Government outstanding at December 31, 1979, and made in 1980	25,550,978
Actuarial present value of future contributions from the Government of Newfoundland	10,223
Actuarial present value of future instalments from contributors in respect of prior service	1,440,310
Actuarial present value of future credits from the Government in respect of prior service (assuming 2.74 times the amount from contributors)	3,946,449
Total Assets	$ 891,013,807
Unfunded actuarial liability	418,574,254
	$1,309,588,061

Liabilities

Actuarial present value of prospective benefits to active contributors and their dependants		$1,049,698,949
Actuarial present value of benefits to former contributors and their dependants entitled to an annuity or annual allowance:		
Retired Contributors	$247,706,723	
Widows	11,049,089	
Children	982,545	$ 259,738,357
Benefits to former contributors due in 1979 and paid in 1980		150,755
Total Liabilities		$1,309,588,061

The foregoing balance sheet indicates an unfunded actuarial liability of about $419 million as at December 31, 1979. If this amount were to be amortized, the following table gives an indication of the possible impact.

	Amortization Plan (beginning in year following valuation date)		Initial Payment*	Initial** % of pay
	Years	Payment	($millions)	(%)
(a)	25	level	33.3	9.4
(b)	60	level	27.0	7.6
(c)	25	constant % of pay	19.7	5.7

* For options (a) and (b) the payment is the same each year, while for option (c) the payment is assumed to increase by 5% (compounded) each year.

** For options (a) and (b) payments expressed as a percentage of pay are assumed to decrease by 5% (compounded) each year, while for option (c) the percentage stays constant.

It must be noted that for option (c) in the above table, the initial payment is lower than the interest assumed to be earned. As a result, the unfunded actuarial liability would be expected to increase in the first year by about 1.5% in absolute terms ($418.6 to $424.8 million) but would decrease by 4.0% in terms of payroll (from 1.206 to 1.166 times payroll).

It will also 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 $187 million. To put this actuarial present value of "excess interest" on existing notional investments into perspective, it is interesting to note that the actuarial present value (on December 31, 1979) of liabilities attributable to "excess salary increases" and "excess indexing" during the three years following the valuation date was of the order of $140 million.

(c) Valuation Balance Sheet combining R.C.M.P. Superannuation and Supplementary Retirement Benefits to the extent that the latter were payable as at December 31, 1979, i.e., if future increases were not guaranteed

This balance sheet presents the situation on a fully funded basis, if adjustments to pensions in payment were granted annually or, in other words, if future increases were not guaranteed. It differs from the balance sheet in Section VI only to the extent that the assets include a share of the Supplementary Retirement Benefits Account, and the liabilities in respect of former contributors and their dependants include the value of supplementary benefits at the rate payable or accrued on December 31, 1979.

With this method of funding, the additional liability incurred annually by an increase to pensions in payment at the implicitly assumed annual rate of increase in the Consumer Price Index of 3.5% would be equivalent, currently, to 1.8% of pay or slightly less than the 2% of pay being contributed to the Supplementary Retirement Benefits Account by contributors and the Government combined.

Assets

Balance of R.C.M.P. Superannuation Account and share of Superannuation contributors in Supplementary Retirement Benefits Account		$ 860,065,847
Credits from Government outstanding at December 31, 1979 and made in 1980		25,550,978
Actuarial present value of future contributions from the Government of Newfoundland		10,223
Actuarial present value of future instalments from contributors in respect of prior service		1,440,310
Actuarial present value of future credits from the Government in respect of prior service (assuming 2.14 times the amount from contributors)		3,082,263
Total Assets		$ 890,149,621
Unfunded actuarial liability		27,516,665
		$ 917,666,286

Liabilities

Actuarial present value of prospective benefits to active contributors and their dependants		$ 738,802,891
Actuarial present value of benefits to former contributors and their dependants entitled to an annuity or annual allowance:		
Retired Contributors	$169,704,845	
Widows	8,135,320	
Children	872,475	$ 178,712,640
Benefits for former contributors due in 1979 and paid in 1980		150,755
Total Liabilities		$ 917,666,286

APPENDIX 2

Summary of the R.C.M.P. Superannuation Plan

A. Coverage

Persons covered by this Plan include:

(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) widows and children who are entitled to annual allowances or other benefits payable out of the Account as dependants of contributors who died either in service or while entitled to an annuity or annual allowance.

B. Contributions and Credits to the Account

1. By Contributor

(a) Current Service
The rates of contribution for members of the Force covered by the Act are 6.5%* of pay reduced by the amount that the contributor would be required to contribute under the Canada Pension Plan in respect of pay received by him as a member of the Force. (For example, in 1980 the reduction was 1.8% of the pay between $1,300 and $13,100 per annum.) Contributions for current service cease when a contributor has to his credit 35 years of pensionable service.

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* The rates were 6% for males before April 1, 1969 and 5% for females before Feb. 1, 1976.

(b) Prior Service

A contributor may elect to contribute in respect of any period of prior pensionable service as described on page 38 of this report. Subject to some 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 according to the rate of pay applicable to the contributor on the most recent occasion of which he became a contributor under the Act and at rates of contributions in effect for the period of service elected to be paid for, adjusted for integration with the Canada Pension Plan for any prior pensionable service after 1965 included in the election. 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 do so at any later time while still a member of the Force provided that he is in good health at the 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.

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.

2. 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, as recommended in the report on the 1974 actuarial valuation was specified.

(b) Following authorization of any pay increase applicable to at least one per cent of the members of the Force, an amount representing the increase in the actuarial liability for benefits resulting from that pay increase. The amount so credited is charged to "unamortized portions of actuarial deficiencies" and is amortized to expenditure in five equal annual instalments commencing in the fiscal year in which the pay increase was authorized. In accordance with the recommendation in the report on the 1974 actuarial valuation, the amount credited after March 31, 1978 was 1.6 times the amount of increase in the effective annual payroll in excess of 5.5% p.a. at the date of increase; until that date the amount credited was based on the total increase.

(c) Following the laying before Parliament of any actuarial report, an amount which 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 treated in a fashion similar to the one described above for the special credits related to pay increases.

(d) In each fiscal year, in its role as custodian of the Account, an amount representing interest on the balance in the Account from time to timee, calculated at the interest rate assumed in the preceding actuarial valuation and at such "supplementary" rate as might be provided by regulations. The Minister may apply the "supplementary" interest to reduce the instalments described in (b) and (c) above. Further details are given in Section III B of this report.

C. Summary of Benefits

(The explanatory Notes referred to in the following summary are given in Section D of this Appendix.)

1. Contributors who hold a rank in the Force

Type of Termination	Period of 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. <u>Contributors who do not hold a rank in the Force</u>

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
Retirement for any other reason	Return of contributions	1) With less than 5 years of service in the Force: return of contributions

Type of Termination	Under 5 years of pensionable service	5 or more years of pensionable service (Note 1)
Retirement for any other reason	Return of contributions	2) With more than 5 years of service in the Force (a) with 35 years or more 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, a 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 service in the Force: immediate annual allowance. (iii) in all other cases if age 50 or over: immediate annual allowance, or 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 (Note 11)	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 (Note 11)	Residual benefit (Note 13)
Death leaving spouse and/or eligible children under age 25 (Note 11)	Annual allowance to surviving spouse and/or children (Notes 13 and 14)

D. Explanatory Notes to Summary of Benefits in Section C of this Appendix (above)

Note 1

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

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" 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" means an amount equal to one month's pay at the rate of pay 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 in all cases (except termination due to death) the total reduction in his contributions as a result of integration of the Plan with the Canada Pension Plan.

Note 5

"Immediate annuity" means an annuity that becomes payable immediately upon termination. 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, 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" 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 member entitled to a deferred annuity becomes disabled before his deferred annuity commences, his entitlement changes from a deferred annuity to an immediate annuity for the same amount.

Note 7

"Reduced immediate annuity" means an immediate annuity, determined as in Note 5, reduced during the period prior to age 65 but not thereafter by 5% for each full year not exceeding six by which the period of the member's 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

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 the benefits 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 Regulations 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" 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" in the case of an officer or a civilian member 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 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 his age, 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.

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.

This type of annuity 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.

Note 11

"Eligible children under age 25" includes all children of the contributor under age 18, and any child of the contributor over age 18 and under age 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" to surviving spouses and children are determined with reference to a basic allowance. 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 pensionable service multiplied by the number of years of pensionable service, not exceeding 35.

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

a) If the age of the contributor exceeded that of the 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 the surviving spouse if the Treasury Board is not satisfied that the contributor was at the time of marriage in such a condition of health as to justify his or her having an expectation of surviving for at least one year thereafter.

c) If a surviving spouse remarries, payment of the allowance is suspended but is resumed in the event of the dissolution or annulment of that marriage or the death of the new 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 the surviving spouse and children may be paid to the surviving spouse any time before the dissolution or annulment of that marriage or the death of his or her spouse by that marriage, if there is no child of the contributor entitled to an allowance.

The "annual allowance" to an eligible child is equal to 20% of the basic allowance or, if the contributor died leaving no spouse or the spouse is dead, 40% of the basic allowance, provided that the total amount of allowances to children shall not exceed four times the allowance to an eligible child as applicable in each case, and such maximum allowance is apportioned among the eligible children. Allowances are not payable to children of a surviving spouse who is not entitled to an allowance under the circumstances indicated in (b) above.

An allowance to the widower of a female contributor is payable only if the contributor was a member of the Force on or after December 20, 1975.

Note 13

If, upon the death of a contributor, there is no person to whom an allowance provided 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 death benefit may be payable. In the case of any contributor who was not a member of the Force on or after December 20, 1975, such benefit is payable to the estate and is equal to the excess, if any, of the "return of contributions" over the aggregate of all amounts paid to the contributor, the surviving spouse and eligible children. In the case of a contributor who was a member of the Force on or after that date, the benefit is payable to the beneficiary if one has been nominated by the contributor or otherwise to the estate and is equal to the greater of the benefit stated above and the amount obtained by substituting "five times the annuity to which the contributor was or would have been entitled at his death" for the "return of contributions". Under most circumstances, five times the annuity will exceed the "return of contributions".

Note 14

The annual allowances payable to a surviving spouse and/or children on the death of a former contributor who has become entitled to an immediate annuity, an annual allowance, or a deferred annuity, are determined in the same manner and are subject to the same conditions as described in Note 12.

However, the surviving spouse of a person who was over 60 years of age at the time of such person's marriage and, except as provided in the regulations, a child who was born to or adopted by a former contributor or who became a stepchild of such person at a time when that person was over 60 years of age, are not entitled to annual allowances unless that person was or became a contributor after that time.

APPENDIX 3

Promotional Salary Scale

Rate of Annual Increment in Pay

Attained Age	Rate	Attained Age	Rate	Attained Age	Rate
18	0.067	32	0.017	46	0.009
19	0.060	33	0.017	47	0.011
20	0.058	34	0.017	48	0.012
21	0.055	35	0.016	49	0.010
22	0.046	36	0.016	50	0.008
23	0.035	37	0.016	51	0.010
24	0.026	38	0.016	52	0.018
25	0.020	39	0.016	53	0.029
26	0.018	40	0.016	54	0.034
27	0.017	41	0.015	55	0.029
28	0.016	42	0.014	56	0.018
29	0.016	43	0.012	57	0.008
30	0.017	44	0.009	58	0.003
31	0.017	45	0.008	59	0.001

Equivalent Level Annual Rate of Increment in Pay

Duration of Service

Age	5	10	15	20	25	30	35	40
20	0.044	0.030	0.026	0.024	0.021	0.020	0.020	0.019
25	0.017	0.017	0.017	0.016	0.015	0.016	0.015	
30	0.017	0.017	0.016	0.014	0.015	0.015		
35	0.016	0.015	0.013	0.015	0.014			
40	0.013	0.012	0.014	0.014				
45	0.010	0.015	0.014					
50	0.020	0.016						
55	0.012							

APPENDIX 4

Rates of Decrement for Active Contributors

Age	Return of Contributions	Disability	Retirement	Mortality
18	.05025	.00613		.00047
19	.04402	.00511		.00049
20	.03917	.00411		.00050
21	.03587	.00310		.00052
22	.03371	.00200		.00054
23	.03219	.00150		.00057
24	.03094	.00100		.00059
25	.02975	.00050		.00062
26	.02853	.00030		.00065
27	.02727	.00020		.00068
28	.02595	.00020		.00072
29	.02452	.00020		.00076
30	.02291	.00030		.00081
31	.02108	.00030		.00086
32	.01909	.00040		.00092
33	.01704	.00040		.00098
34	.01502	.00050		.00105
35	.01309	.00051		.00112
36	.01123	.00062		.00120
37	.00936	.00072		.00130
38	.00758	.00082	.04313	.00140
39	.00600	.00092	.03493	.00151
40	.00477	.00112	.03210	.00163
41	.00397	.00132	.04419	.00179
42	.00353	.00163	.06300	.00200
43	.00337	.00183	.08321	.00226
44	.00353	.00203	.09787	.00257
45	.00414	.00232	.09773	.00292
46	.00533	.00252	.09240	.00332
47	.00694	.00272	.08900	.00375
48	.00867	.00293	.08739	.00423
49	.01026	.00323	.08800	.00474
50	.01142	.00362	.09067	.00529
51	.01195	.00422	.09684	.00587
52	.01203	.00483	.11042	.00648
53	.01185	.00570	.13962	.00713
54	.01142	.00682	.18127	.00781
55	.01066	.00822	.23807	.00852
56	.00935	.01030	.29530	.00926
57	.00750	.01324	.33830	.01004
58	.00539	.01670	.36935	.01089
59	.00332	.02120	.38480	.01192

APPENDIX 5

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

and

Annuity Values based on this Table with interest at 6.5% per annum

Age	Mortality Rates		Value of Annuity of $1.00 per annum		Value of Annuity of $1.00 in first year, increasing at the implicit rate of inflation (3.5%)*	
	Male	Female	Male	Female	Male	Female
30	.0008	.0004	15.078	15.510	24.881	26.570
35	.0011	.0007	14.671	15.233	23.456	25.361
40	.0016	.0009	14.143	14.870	21.851	23.992
45	.0029	.0014	13.471	14.400	20.068	22.448
50	.0053	.0021	12.669	13.798	18.163	20.721
55	.0085	.0032	11.737	13.032	16.171	18.802
60	.0131	.0055	10.650	12.072	14.085	16.697
65	.0213	.0096	9.419	10.922	11.960	14.459
70	.0361	.0165	8.129	9.571	9.925	12.126
75	.0553	.0324	6.889	8.127	8.106	9.868
80	.0874	.0561	5.678	6.748	6.464	7.877
85	.1301	.0892	4.678	4.975	5.177	6.163
90	.1795	.1386	3.859	4.307	4.170	4.692

* Used for calculations reported in Appendix 1

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.	Attained Age	Ultimate Rates*
25	.050	.148	.132	30	.061
30	.029	.086	.076	35	.040
35	.018	.048	.042	40	.025
40	.011	.027	.023	45	.014
45	.006	.015	.012	50	.008
50	.004	.008	.006	55	.004
55	.002	.004	.003	60	.002

Widowers

Age at becoming widower	Select Rates — Year of being a widower 1st yr.	3rd yr.	5th yr.	Attained Age	Ultimate Rates*
25	.071	.258	.258	30	.198
30	.065	.215	.198	35	.139
35	.047	.130	.116	40	.094
40	.031	.078	.069	45	.059
45	.019	.048	.040	50	.027
50	.013	.028	.022	55	.014
55	.008	.014	.011	60	.009

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

APPENDIX 7

Proportion of Deceased Contributors Leaving Eligible Spouses and Average Age of Spouse Corresponding to Age at Death of Contributor or Former Contributor

Age at Death	Proportion Leaving Eligible Spouses	Average Age of Spouse	
		Female	Male
20	0.175	20	20
25	0.550	24	26
30	0.839	29	31
35	0.896	34	37
40	0.919	38	42
45	0.957	43	48
50	0.963	47	53
55	0.965	52	59
60	0.964	56	64
65	0.792	61	70
70	0.729	65	76
75	0.635	69	83
80	0.513	73	91
85	0.378	76	96
90	0.251	78	101
95	0.129	79	106
100	0.012	80	111

APPENDIX 8A

Active Contributor Display (Males)

Number of Contributors

Average Salary on Dec 31, 1979

Attained Service

Attained Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	Total
15-19	2 15,042								2 15,042
20-24	1,348 17,921	66 21,255							1,414 18,076
25-29	1,329 18,812	2,527 21,603	33 21,573						3,934 20,660
30-34	390 19,503	1,346 21,760	2,278 23,023	29 22,704					4,043 22,261
35-39	97 19,649	189 20,920	597 23,542	1,325 24,966	74 25,916				2,282 24,063
40-44	81 18,412	71 21,363	47 23,673	339 25,310	1,037 27,129	50 26,952			1,625 25,953
45-49	58 17,905	89 20,631	26 23,029	34 23,864	215 27,057	485 29,353	26 30,385		933 26,933
50-54	30 19,000	71 20,303	17 21,221	15 21,624	31 23,829	138 28,449	50 30,729	7 32,767	359 25,424
55-59	6 18,420	30 20,206	8 23,532	10 19,706	6 20,666	11 22,104	11 27,824	3 22,784	85 21,689
60-64	1 17,532	3 22,276	1 21,552	5 23,095	2 21,090	1 15,576	0 0	0 0	13 21,473
TOTAL	3,342 18,530	4,437 21,563	3,007 23,111	1,757 24,910	1,365 26,940	685 28,859	87 30,259	10 29,772	14,690 22,487

Average Age: 33.2 years   Average Service: 11.0 years

APPENDIX 8B

Active Contributor Display (Females)

Number of Contributors

Average Salary on Dec 31, 1979

Attained Age	Attained Service: 0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	Total
15-19	2 16,596								2 16,596
20-24 25-29	225 16,807	5 16,080							230 16,791
25-29	260 17,858	90 18,963	2 20,586						352 18,156
30-34	75 17,546	35 19,531	30 19,603	1 20,112					141 18,495
35-39	25 17,166	14 18,023	6 21,624	3 17,776	0 0				48 18,012
40-44	16 16,090	21 18,771	8 17,817	5 18,763	10 20,896	1 17,028			61 18,262
45-49	21 15,642	11 19,829	9 19,269	5 19,934	5 21,118	2 19,086	1 20,760		54 18,226
50-54	4 16,050	6 16,970	5 20,273	5 17,297	8 19,562	1 22,164	0 0	0 0	29 18,363
55-59	1 14,256	5 17,885	11 18,847	3 18,160	4 19,236	3 16,280	1 20,760	1 20,760	29 18,372
60-64	1 16,608	2 19,896	2 25,830	0 0	1 15,420	0 0	0 0	0 0	6 20,580
TOTAL	630 17,276	189 18,869	73 19,662	22 18,541	28 20,121	7 18,029	2 20,760	1 20,760	952 17,905

Average Age: 31.0 years

Average Service: 5.3 years

APPENDIX 9A

Retired Contributors

Distribution by Age Showing Amount of Pension at Date of Valuation

	Other Than Disability Pensions					Disability Pensions				
	Number of Pensioners			Annual Pension		Number of Pensioners			Annual Pension	
	Male	Female	Total	RCMPSA	SRBA	Male	Female	Total	RCMPSA	SRBA
30-34	6	0	6	21,402	2,425	1	1	2	6,792	609
35-39	23	0	23	53,897	23,688	3	0	3	6,144	4,448
40-44	164	1	165	982,071	193,397	8	0	8	39,180	14,390
45-49	575	0	575	4,309,335	1,339,359	19	0	19	112,020	38,968
50-54	274	1	275	1,978,300	826,255	17	2	19	90,312	45,165
55-59	149	6	155	1,198,565	547,001	10	4	14	57,396	34,628
60-64	125	9	134	905,384	537,611	14	1	15	61,548	53,243
65-69	127	9	136	618,549	577,253	4	0	4	7,740	10,052
70-74	64	3	67	226,737	265,306	1	0	1	1,812	2,908
75-79	25	1	26	83,880	115,037	0	0	0	0	0
80-84	4	0	4	7,860	13,020	1	0	1	2,616	4,467
85-89	2	0	2	3,420	5,865	0	0	0	0	0
90-94	1	0	1	2,532	4,739	1	0	1	1,116	2,089
TOTAL	1,539	30	1,569	10,391,932	4,450,956	79	8	87	386,676	210,967

NOTE: RCMPSA benefits deferred to age 60 as well as SRBA benefits deferred to the earlier of 60 and 'Rule of 85' are included in the values. Benefit amounts reflect benefit adjustments as at December 31, 1979 based on the type of retirement code and CPP offsets for ages greater than 64.

APPENDIX 9B

Surviving Spouses Eligible for Allowances

Distribution by Age Showing Annual Allowances

Age	Number of Spouses	Annual Allowance RCMPSA	Annual Allowance SRBA
20-24	1	996	1,864
25-29	4	3,576	4,329
40-34	6	7,344	9,735
35-39	13	26,664	39,528
40-44	31	60,600	79,600
45-49	27	65,592	63,838
50-54	12	24,252	23,037
55-59	19	40,824	50,024
60-64	33	64,884	75,932
65-69	27	44,928	60,665
70-74	32	44,976	64,021
75-79	11	10,620	17,850
80-84	4	5,760	9,175
85-89	3	5,304	7,115
TOTAL	223	406,320	506,713