



Department of Insurance
Canada

Département des assurances
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CANADIAN FORCES SUPERANNUATION ACCOUNT

ACTUARIAL REPORT

AS AT DECEMBER 31, 1980

Canada

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CANADIAN FORCES SUPERANNUATION ACT - PART I

Report on the Actuarial Examination of the
Canadian Forces Superannuation Account
in the Consolidated Revenue Fund as at December 31, 1980

I. Introduction and Summary

Pursuant to Section 27 of the Canadian Forces Superannuation Act, we have made an actuarial examination of the Account as at December 31, 1980 and have the honour to report thereon.

The last examination of this Account was made as of December 31, 1975 and included the amendments to the Canadian Forces Superannuation Act in 1975. No significant 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 17.237% of pay. Allowing for coordination with the Canada Pension Plan, the effective rate of contribution to the Account from contributors is equivalent to 5.297% of pay. As a result, it is estimated that Government credits are required at a rate equal to 2.25 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 26(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 3.39 times the increase in the effective annual payroll in excess of 5.0% per annum for officers, and 2.53 times such amount for other ranks. 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 26(4) of the Act.

The estimated excess of assets over liabilities in the Account as at December 31, 1980 was \$1,957.7 million.

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 Canadian Forces Superannuation Act, are provided under the Supplementary Retirement Benefits Act and, pursuant to Part III of the Canadian Forces 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 Canadian Forces 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 Canadian Forces Superannuation Account. This is done in Appendix 1.

II. Data and Membership Statistics

The data for this valuation were obtained from data tapes supplied by the Department of National Defence. The following tables derived from those tapes show pertinent statistics concerning contributors to the Account (members and former members of the Canadian Forces) and survivors eligible for allowance during the intervaluation period from December 31, 1975 to December 31, 1980.

Although considerable difficulty was experienced in eliminating apparent errors, we consider that the data in the form they entered into our calculations were reasonably satisfactory for the purpose. Nevertheless, it is hoped that a greater degree of accuracy in record maintenance will be achieved in the future.

A. Members of the Forces

Class of Contributors	*Contributors on Jan.1/76	New contributors 1976-1980	<u>Terminations during the 1976-80 period</u>				Contributors on Dec.31/80	
			Type of Benefit	Type of Termination				
				Death	Disabled	Other**	Total	
<u>Males</u>								
Officers			Annuity	94	55	2,083	2,232	
			Lump Sum	23	58	3,148	3,229	
	14,855	4,940		<u>117</u>	<u>113</u>	<u>5,231</u>	<u>5,461</u>	14,334
Other Ranks			Annuity	275	1,130	11,663	13,068	
			Lump Sum	189	740	20,083	21,012	
	61,147	32,837		<u>464</u>	<u>1,870</u>	<u>31,746</u>	<u>34,080</u>	59,904
Total			Annuity	369	1,185	13,746	15,300	
			Lump Sum	212	798	23,231	24,241	
	76,002	37,777		<u>581</u>	<u>1,983</u>	<u>36,977</u>	<u>39,541</u>	74,238
<u>Females</u>								
Officers			Annuity	-	5	56	61	
			Lump Sum	3	13	370	386	
	696	575		<u>3</u>	<u>18</u>	<u>426</u>	<u>447</u>	824
Other Ranks			Annuity	1	5	50	56	
			Lump Sum	9	58	2,387	2,454	
	2,760	4,977		<u>10</u>	<u>63</u>	<u>2,437</u>	<u>2,510</u>	5,227
Total			Annuity	1	10	106	117	
			Lump Sum	12	71	2,757	2,840	
	3,456	5,552		<u>13</u>	<u>81</u>	<u>2,863</u>	<u>2,957</u>	6,051
<u>Grand Total</u>	79,458	43,329		594	2,064	39,840	42,498	80,289

* In this column, contributors who had other rank status on January 1, 1976 and who attained officer status at some time during the 1976-80 period are shown as officers rather than other ranks.

** 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 <u>Jan.1/76</u>	New Entitlements <u>1976 to 1980</u>	Terminations 1976 to 1980		Entitled on <u>Dec. 31/80</u>
			<u>Deaths</u>	<u>Other*</u>	
<u>Males:</u>					
Retirement for reasons other than disability	38,019	13,746	2,124	125	49,516
Retirement because of disability	<u>5,955</u>	<u>1,185</u>	<u>483</u>	<u>14</u>	<u>6,643</u>
Total	43,974	14,931	2,607	139	56,159
<u>Females:</u>					
Retirement for reasons other than disability	207	106	6	-	307
Retirement because of disability	<u>18</u>	<u>10</u>	<u>1</u>	<u>-</u>	<u>27</u>
Total	225	116	7	-	334
<u>Grand total</u>	44,199	15,047	2,614	139	56,493

Surviving Spouses

Entitled on <u>Jan.1/76</u>	New Entitlements <u>1976 to 1980</u>	Terminations 1976 to 1980		Entitled on <u>Dec. 31/80</u>
		<u>Deaths</u>	<u>Remarriages</u>	
4,162	2,690	172	127	6,553

Children and Students

	<u>Entitled on Jan.1/76</u>	<u>Entitled on Dec.31/80</u>
Children under 18	2,785	2,055
Students (18 to 25)	488	632

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

III. Valuation Assumptions

A. General Comments

Valuation data were provided for four groups of contributors, namely, male officers, male other ranks, female officers and female other ranks. In this report, the term "classes of contributors" refers to these four groups.

As for earlier examinations of the Account, the data exhibited significant differences in experience for the four classes of contributors. While it was considered desirable to continue to treat each class separately for valuation purposes, in some cases, the assumptions varied only by sex or by rank, as described later.

Continuing the practice used in previous valuations, studies were made of the actual experience during the period 1976-80 compared with the expected experience for salaries and terminations, based on the assumptions used in the 1975 valuation. Although the personnel and staffing policies of the Forces continue to be subject to change, it was considered desirable for purposes of this valuation to use demographic assumptions representative of actual experience. These assumptions are 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 Canadian Forces 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 CFSA 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 1975.

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 R.C.M.P. Superannuation Acts had been invested on a basis similar to the one used for the Canada Pension Plan, i.e., in 20-year bonds having a yield equivalent to the average yield on Government of Canada bonds with 20 or more years to maturity outstanding at that time.

For the quarter ending December 31, 1980 the total rate of interest credit was 2.1033% which is equivalent to 8.68% per annum. Subsequently, the total annual rate of interest credit rose to above 10% 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 generally stayed well above 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%.*

* more precisely ($\frac{1.065}{1.035} - 1$) 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. Salary Increases

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 each of the four classes of contributors from December 31, 1975 to December 31, 1980 indicated a modification in the salary scales based on the experience prior to 1970 which had been used for the last two valuations. Except for relatively young female officers and relatively older other female ranks, the experience generally pointed to somewhat lower increases. New salary scales giving fifty percent weight to the recent experience were developed. Moreover, it appeared appropriate to use the scale applicable to male contributors also for female contributors.

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.

Appendix 3 shows promotional salary scales and salary scales incorporating both promotional and general increases.

* more precisely $\frac{(1.050 - 1)}{1.035}$ or 1.449

D. Rates of Retirement with return of contributions

The experience with regard to male contributors during the period 1976-80 indicated somewhat higher rates for male officers and at very young ages for other contributors and otherwise somewhat lower rates than assumed for the 1975 valuation.

The rates used for this valuation which reflect recent experience (partially in the case of male officers) are shown in Appendix 4.

E. Rates of Retirement with entitlement to an annuity or a cash termination allowance for reasons other than disability

A retirement age of 55 has been prescribed by regulations made under the National Defence Act for all members serving under the career programs adopted in 1975.

For those members enrolled prior to the introduction of the new programs who are not subject to their provisions, the previous retirement ages varying by rank as prescribed by the regulations continue to apply. These latter retirement ages, effective February 1, 1968, for contributors who enrolled on or after that date, or those serving on that date who elected to have such ages apply to them are shown below.

For those contributors serving on February 1, 1968, who did not elect to have these ages apply to them, the retirement ages are similar to those below but vary slightly by rank and by branch of the forces.

Officers

	<u>General Service</u>	<u>Specialist Service</u>	<u>Commissioned from Ranks</u>
Brigadier-General and above	55	60	55
Colonel	55	58	55
Lieutenant-Colonel	51	55	50
Major	47	55	50
Captain and Lieutenant	45	50	50

Other Ranks

Sergeant and above	50
Corporal and below	44

Notwithstanding the above prescribed ages for retirement, for purposes of compulsory retirement under certain conditions or voluntary retirement the regulations prescribe for those contributors that retirement age will be deemed to have been reached upon completion of the following periods of full-time paid service in any of Her Majesty's Forces, if the resulting date of retirement is earlier.

Years of Service

Officers

Colonel and above	30
Lieutenant-Colonel and below	28

Other Ranks

Sergeant and above	30
Corporal and below	25

As a result of the introduction of the new career programs with emphasis on retirement at either the completion of an intermediate engagement (20 years service or age 40, if later) or at age 55 after serving an indefinite period of service, changes in the pattern of retirements may be expected. The data on the contributors retiring for reasons other than disability with entitlement to a cash termination allowance or an annuity during the 1976-80 period do in fact indicate that, compared to the rates used in the 1975 valuation, rates of retirement for these reasons for male officers had been somewhat higher around age 40 and otherwise lower, while for male other ranks the rates were generally higher except below age 37.

Since the ultimate pattern of retirements is difficult to predict and will not emerge until those members to whom the old regulations on retirement ages apply have retired, it seemed appropriate to use rates based on the most recent experience. The 1976-80 experience indicated that the rates developed for male contributors would be appropriate for female contributors as well, except for female officers at age 50 for whom the rate used for the 1975 valuation was retained. The rates are shown in Appendix 5.

F. Rates of Retirement with entitlement to an annuity or a cash termination allowance because of disability

During the 1976-80 period the number of members retiring because of disability and with entitlement to an annuity or a cash termination allowance was lower than that expected on the basis of the rates used in the 1975 valuation for male officers and female other ranks and higher than that expected for the male other ranks and female officers.

The rates of retirement because of disability for male members were adjusted to reflect the recent experience (partially in the case of officers). However, the rates used in the 1975 valuation for female other ranks were considered to remain appropriate and they also appeared satisfactory for female officers. The rates used are shown in Appendix 6.

G. Mortality of active contributors

Using the data for active contributors who died during the 1976-80 period, new mortality rates were developed for active male contributors, officers and other ranks, separately. The resulting rates reflect lower total mortality but the changes vary with age, some rates being higher and some lower than those used in the 1975 valuation. These rates reflect the actual mortality experience of members of the forces and therefore vary somewhat from normal patterns. Although the data on female contributors are scanty, it appeared appropriate to replace the rates used in the 1975 valuation by those of the Life Tables for Canada, 1980-1982, as published by Statistics Canada. All rates are shown in Appendix 7.

H. Mortality of contributors entitled to annuities who were retired for reasons other than disability

The experience of the 1976-80 period indicated that for male contributors the mortality rates used in the three preceding valuations were no longer appropriate. The rates adopted for this valuation, for both males and females, are those of the 1971 GAM Tables Projected 30 years according to Scale D.

The mortality rates from this table are shown in Appendix 8.

I. Mortality of contributors entitled to annuities who were retired because of disability

For male contributors, actual numbers of deaths were considerably higher than expected in accordance with the assumptions used in the four preceding valuations. The rates adopted for this valuation were the following multiples of the Life Tables for Canada, 1980-1982: 300% in the first year of disability, 200% in the second year of disability, and 150% thereafter. Corresponding assumptions were adopted for female contributors.

The mortality rates used in the valuation are shown in Appendix 9.

J. Mortality and Remarriage of Widows

Experience during the 1976-80 period indicated that the mortality rates used for the valuation of widows' allowances in the three preceding valuations were no longer appropriate. The mortality rates used for this valuation were the same as those described above for female contributors entitled to annuities who were retired for reasons other than disability.

The remarriage rates used again were the select and ultimate remarriage rates derived from the 1940-57 experience of widows granted pensions under the Pension Act and previous government administrative orders from August 4, 1914 to December 31, 1957. Recent experience has indicated that the select rates of the table at early durations are somewhat lower than corresponding actual rates for widows entitled to allowances under the Canadian Forces Superannuation Act.

Sample mortality and remarriage rates are shown in Appendix 10.

K. Mortality and Remarriage of Widowers

The remarriage rates assumed for this valuation were the same as those used for purposes of the Canada Pension Plan. The mortality rates are the same as those described above for male contributors entitled to annuities who were retired for reasons other than disability.

Sample mortality and remarriage rates are shown in Appendix 10.

L. Children

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 the mortality rates for children are quite low, it was considered suitable to ignore mortality amongst these annuitants.

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 11.

M. Proportions of contributors and annuitants married at death and average ages of spouses corresponding to ages of contributors and annuitants at death

The proportions married at death and the average ages of spouses used for males in the four preceding valuations were no longer appropriate. For the current valuation new series of factors based on the 1976-80 experience were developed.

In view of the lack of data on the proportions of female contributors and annuitants married at death and the average ages of widowers corresponding to ages of female contributors and annuitants at death, the proportions married used for the preceding valuation were retained, and the average ages of widowers were arbitrarily assumed to be two years older than their contributing spouses.

The proportions and average ages used in the valuation are shown in Appendix 11.

IV. Actuarial Cost Method

For consistency of treatment with that of the Public Service and RCMP Superannuation Accounts, the method known as the Unit Credit or Accrued Benefit Actuarial Cost Method was adopted for this valuation. This method 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 rate of 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. Rates of Contribution 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, 1980 summarized in Appendix 12, 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 17.237% 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 5.297% of pay, leaving a required Government credit of 11.940% of pay or an amount equal to 2.25 times the contributions from contributors.

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 Canadian Forces 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 3.39 times the amount of increase in the effective annual payroll in excess of 5.0% per annum for officers, and 2.53 times such amount for other ranks. 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 17.237% of pay indicated above is higher than the corresponding figure in the preceding report by about 0.9% of pay. This is mainly accounted for by the following changes

	<u>Increase(Decrease)</u>
Age and service distribution of contributors	(0.9)
Actuarial cost method	0.7
Economic assumptions	(0.6)
Promotional salary scales	(0.4)
Retirement with return of contributions	1.9
Pensioner mortality	<u>0.2</u>
	0.9

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, 1980, is shown in the following balance sheet.

<u>Assets</u>		(millions)
Balance on Account (Par Value)*		\$ 9,184.5
Credits from Government outstanding at December 31, 1980 and made in 1981		
1) Contributions	\$ 41.3	
2) Interest	146.0	187.3
Outstanding contributions from contributors		7.6
Present value of future contributions from members and former members of the forces for prior service plus future credits from Government (assumed equal to 1.8 times the amount from contributors)		<u>24.7</u>
Total Assets		\$ 9,404.1

* The value of the Account as at December 31, 1980, determined by discounting the notional investments at the assumed valuation interest rate of 6.5% was \$11,130.9 million. The difference between this value and the par value shown in the balance sheet as well as the contingency reserve 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).

Liabilities

		(millions)
Present value of prospective benefits to and in respect of contributors who are members of the forces		\$3,982.9
Present value of future benefits to persons entitled to an annuity or annual allowance		
Retired contributors	\$3,308.0	
Widows	147.7	
Children	4.8	3,460.5
Amounts due to former contributors or to the beneficiaries or estates of contributors		<u>3.0</u>
Total Liabilities		\$7,446.4
Contingency Reserve*		<u>1,957.7</u>
		\$9,404.1

The foregoing balance sheet indicates an excess of assets over liabilities of about \$1,958 million, as at December 31, 1980. This represents an increase of \$826 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.

* Deferred charges totalling \$381.3 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 or would reduce any contingency reserve or surplus.

Actuarial Gains and Losses
(in millions of dollars)

	<u>Gain</u>	<u>Loss</u>	<u>Net Gain (Loss)</u>
Normal actuarial gains and losses			
- Interest on contingency reserve	419		
- General salary increases		212	
- Retirement with return of contributions		275	
- Other terminations		40	
- Promotional salary increases	46		
- Pensioner mortality	38		
- Pensioner salary base	206		
- Data correction	18		
- Miscellaneous (net)	99		
	826	527	299
Changes in actuarial assumptions and methods			
- Actuarial cost method	231		
- Economic assumptions	89		
- Promotional salary scales	39		
- Retirement with return of contributions		273	
- Pensioner mortality		118	
- Other assumptions and methods (net)		50	
	359	441	(82)
Extraordinary actuarial gains and losses			
- Special credits related to salary increases	1555*		
- Interest credits		946*	
	1555	946	609
Total net gain			826

* These items are attributable in large part to the time lapse between the effective date of the preceding valuation and the date when the 1975 valuation assumptions were reflected in the accounting procedures. An accumulated loss of \$946 million is attributable to interest credits between December 31, 1975 and October 1, 1980, at the old rate of 4% p.a. instead of 6.5% p.a. as assumed in the 1975 valuation. Similarly, an accumulated gain of \$1,555 million is attributable to credits in respect of salary increases between December 31, 1975 and October 1, 1980, being based on total general salary increases instead of the excess over 5.5% per annum expected in accordance with the 1975 assumptions.

VII. Conclusion

In conclusion, we wish to acknowledge the co-operation of the various sections of the Department of National Defence which supplied us with the data on contributors and annuitants.

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 regular force of the Canadian Forces, including provisions of the Supplementary Retirement Benefits Act, reference must be made to Appendix 1 of this report.

Respectfully submitted,



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December 20, 1985

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 Canadian Forces 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 Canadian Forces 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 Canadian Forces 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 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, 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 Canadian Forces who are entitled to benefits under the Defence Services Pension Continuation Act as well as to those entitled to benefits under the Canadian Forces 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 1980-81, 1981-82 and 1982-83 are shown on page 22.

Canadian Forces Supplementary Retirement Benefits

<u>Credits to Account</u>	<u>1980-81</u> \$	<u>1981-82</u> \$	<u>1982-83</u> \$
Contributions from members	14,737,979	16,972,634	19,540,469
Government credits	14,726,895	16,964,819	19,519,406
Interest	20,253,535	32,817,883	37,915,639
Transfers in	4,419	9,793	6,962
<u>Charges to Account</u>			
Supplementary Benefits	2,139,324	2,199,399	2,938,438
Refunds on withdrawal	2,082,774	2,357,369	1,743,670
Transfers out	34,094	46,816	102,745
<u>Account Balance (Year end)</u>	189,675,330	251,836,878	324,034,502
<u>Benefits charged to Consolidated Revenue Fund</u>	99,551,100	131,100,000	164,352,000

Under the partially funded system of financing supplementary retirement benefits as it existed on December 31, 1980, 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 Canadian Forces 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 7.8% of pay.

In any event, cost estimates relating only to Supplementary Retirement Benefits (or only to the Canadian Forces Superannuation Act) 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 1980* 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 25.083% of payroll. After making allowance for coordination with contributions payable to the Canada Pension Plan, contributions from members of the forces, including 1% contributions to the Supplementary Retirement Benefits Account, are calculated to be equivalent to 6.297% of pay. It follows that credits on behalf of the Government in respect of the combined Benefits would have to be equivalent to about 18.786% of pay, or 2.98 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.

* 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.

(B) Valuation Balance Sheet combining Canadian Forces Superannuation and Supplementary Retirement 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 2.98 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 1981 and makes provision for continued increases at the rate of 3.5% per annum*.

<u>Assets</u>	(millions)
Balance of Canadian Forces Superannuation Account and share of CFSA contributors in Supplementary Retirement Benefits Account	\$ 9,393.9
Credits from Government outstanding at December 31, 1980, and made in 1981	187.3
Outstanding contributions from contributors	7.6
Present value of future contributions from members and former members of the forces for prior service plus future credits from Government (assumed equal to 2.98 times the amount from contributors)	<u>41.7</u>
Total assets	\$ 9,630.5
Unfunded actuarial liability	\$ 4,517.7
<u>Liabilities</u>	
Present value of prospective benefits to and in respect of contributors who are members of the forces	\$ 5,868.9
Present value of future benefits to persons entitled to an annuity or annual allowance	8,251.1
Amounts due to former contributors or to the beneficiaries or estates of contributors	<u>28.2</u>
Total Liabilities	\$14,148.2

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

The foregoing balance sheet indicates an unfunded actuarial liability of about \$4,518 million as at December 31, 1980. The annual payment required to amortize that amount over twenty-five years beginning in 1981 would have been \$359 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 \$1,946 million. To put this actuarial present value into perspective, it is interesting to note that the actuarial present value (on December 31, 1980) of liabilities attributable to "excess salary increases" and "excess indexing" during the four years following the valuation date was of the order of \$2,025 million.

- (C) Valuation Balance Sheet combining Canadian Forces 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 above. The streamed assumptions also make provision in the early years for general salary increases and inflation (i.e., indexing) at rates somewhat higher than the level long term assumptions. There is a danger in this approach 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			Assumed Increases in CPI %	General Salary Increases %		Rate of Indexing %
	Money %	Projected Fund Yield %	Assumed Fund Yield %		Officers	Other Ranks	
1981*	diverse	9.1	9.1	12.5	14.1	15.6	9.7
2*	"	10.1	10.1	10.8	9.3	11.5	12.2
3*	"	10.6	10.6	5.8	5.6	5.9	6.5
4*	"	10.8	10.8	4.4	4.3	4.7	5.5
1985*	"	11.2	10.7	4.0		3.6	4.6
6	10.5	11.3	10.3	3.5		4.0	4.0
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 1981, 1982, 1983 and 1984 and the rate of indexing for 1985 are based on actual experience. The interest rate on new money varied between 12.7% and 17.5% in 1981, between 12.0% and 16.5% in 1982, between 10.9% and 12.1% in 1983 and between 12.0% and 14.1% for 1984. The projected fund yield is based on an open group assuming a constant active force.

Balance Sheet based on Streamed Economic Assumptions

<u>Assets</u>	(millions)
Balance of Canadian Forces Superannuation Account and share of CFSA contributors in Supplementary Retirement Benefits Account	\$ 9,393.9
Credits from Government outstanding at December 31, 1980, and made in 1981	187.3
Outstanding contributions from contributors	7.6
Present value of future contributions from members and former members of the forces for prior service plus future credits from Government (assumed equal to 2.98 times the amount from contributors)	<u>34.6</u>
Total Assets	\$ 9,623.4
Unfunded actuarial liability	\$ 1,874.3
<u>Liabilities</u>	
Present value of prospective benefits to and in respect of contributors who are members of the forces	\$ 4,540.8
Present value of future benefits to persons entitled to an annuity or annual allowance	6,928.7
Amounts due to former contributors or to the beneficiaries or estates of contributors	<u>28.2</u>
Total Liabilities	\$11,497.7

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 \$699.3 million as at December 31, 1980. 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, 1980 might be reduced by about \$2.6 billion. The annual payment required to amortize the unfunded liability over 25 years beginning in 1981 on the basis of the projected yield of the Account would have been \$198 million.

APPENDIX 2

Summary of the Canadian Forces 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

- (1) every member of the regular force (or its predecessors) of the Canadian Forces, referred to in this report as the "forces", who
 - (a) was a contributor under Part V of the former Act immediately before March 1, 1960, the date on which the Act came into force,
 - (b) not having been a member of the forces immediately before March 1, 1960, became a member of the forces on or subsequent to that date,
 - (c) having been a member of the forces on March 1, 1960 thereafter ceased to be a member and subsequently was re-enrolled in the forces,
 - (d) having been a member of the forces but not a contributor under Part V of the former Act on March 1, 1960, elected to become a contributor under the Act within one year from that date or
 - (e) having been entitled to a pension under any of Part I to III of the former Act on March 1, 1960 elected to become a contributor under the Act within one year from that date;
- (2) former members of the forces who are entitled to annuities payable out of the Account; and
- (3) spouses and children of deceased contributors who are entitled to annual allowances payable out of the Account.

B. Contributions and Credits to the Account

By Contributor

The rate of contribution for members of the forces covered by the Act is 6.5% of pay (Note 1) reduced by the amount that the contributor is required to contribute under the Canada Pension Plan in respect of pay received by him as a member of the forces. (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 to his credit 35 years of pensionable service.

A contributor may elect to contribute in respect of any period of prior pensionable service as described in Note 2 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

- 1) for any period of service described in (a) and (b) of Note 2, 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
- 2) for other service, according to the rate of pay authorized to be paid to him during that period,

and at the rates of contribution applicable to the period. The rates which apply are for male members, 6.0% for service on or before March 31, 1969 and 6.5% for service after that date, and for female members 6.0% for service on or before March 31, 1969, 5% for service from that date to January 31, 1976, and 6.5% for service since that date. Contributions for any period of prior pensionable service after December 31, 1965 are subject to adjustment 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 forces 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.

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; (As of April 1, 1969, the amount was increased from $1 \frac{2}{3}$ to 1.8 times the amount of contributions by contributors.)
- (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 for further details.)
- (c) following authorization of any pay increase applicable to at least one per cent of the members of the forces, 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. In accordance with the recommendation in the report on the 1975 actuarial valuation, the amount credited, as a multiple of the amount of increase in the total annual payroll in excess of 5.5%, was 3.8 for officers and 3.0 for other ranks.)
- (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 are members of the forces

<u>Type of Termination</u>	<u>Service in the Forces (Note 3)</u>	<u>Benefit</u>
Retirement because of age (Note 6)	3 years or less	Return of contributions (Note 7)
	More than 3 but less than 10 years	Return of contributions or cash termination allowance (Note 8), whichever is the greater
	10 years or more	Immediate annuity (Note 9)
Retirement on completion of short engagement (an officer contributor other than a subordinate officer who has not reached retirement age, and is not serving on an intermediate engagement or for an indefinite period of service): see Notes 4 and 5	Less than 10 years	Return of contributions
	At least 10 but less than 20 years	At the option of the contributor (1) return of contributions or (2) deferred annuity (Note 11)
	20 years or more	See retirement for other reasons
Retirement on completion of intermediate engagement (a contributor who has not reached retirement age and is not serving for an indefinite period of service)	20 years or more (by definition in CFS Regulations)	Immediate annuity

<u>Type of Termination</u>	<u>Service in the Forces</u>	<u>Benefit</u>
Retirement during an indefinite period of service after having completed an intermediate engagement and prior to reaching retirement age, for reasons other than disability, economy or efficiency, or misconduct	Any length	Immediate annuity to which contributor was entitled upon completion of intermediate engagement increased to such extent as prescribed by regulation*
Compulsory retirement because of disability	Less than 10 years	Return of contributions or cash termination allowance, whichever is greater
	10 years or more	Immediate annuity
Compulsory retirement to promote economy or efficiency	3 years or less	Return of contributions
	More than 3 but less than 10 years	Return of contributions or cash termination allowance, whichever is greater
	At least 10 but less than 20 years	At the option of the contributor (1) return of contributions (2) deferred annuity, or (3) with consent of the Minister of National Defence an immediate reduced annuity (Note 12)
	20 years or more	Immediate annuity
Compulsory retirement because of misconduct, as defined in the Act	Less than 10 years	Return of contributions
	10 years or more	Return of contributions or with the consent of Treasury Board, the whole or any part specified by Treasury Board of the annuity to which the contributor would have been entitled at the time of his retirement if he had been "retired for other reasons" (Note 13)

* The Act limits the annuity to the immediate annuity to which the contributor would be entitled if retiring because of age or disability, and the formula in the Regulations (Note 10) always produces less than this maximum.

<u>Type of Termination</u>	<u>Service in the Forces</u>	<u>Benefit</u>
Retirement for other reasons	Less than 10 years	Return of contributions
	At least 10 but less than 20 years	At option of contributor (1) return of contributions or (2) deferred annuity
	At least 20 but less than 25 years	Immediate reduced annuity
	25 years or more	Officer contributor - immediate reduced annuity Other than Officer contributor - immediate annuity
Death leaving no spouse or eligible children under 25 (Note 14)	Less than 10 years	Return of contributions or cash terminations allowance, whichever is greater
	10 years or more	Five times the annuity to which the contributor would have been entitled at the time of his death
Death leaving spouse and/or eligible children under age 25	Less than 5 years	Return of contributions or an amount equal to one month's pay of the deceased contributor for each year of pensionable service to his credit, whichever is the greater
	5 years or more	Annual allowances (Notes 14, 15 & 16)

2. Former Contributors who are receiving annuities or are entitled to deferred annuities (Note 11)

<u>Type of Termination</u>	<u>Benefit</u>
Death leaving no spouse or eligible children under age 25	Minimum benefit (Note 16)
Death leaving spouse and/or eligible children under age 25	Annual allowance

D. Explanatory Notes

Note 1: Pay

The term "pay", as it applies to a contributor under this plan and as it is used throughout this report, means pay at the rates prescribed by the regulations made pursuant to the National Defence Act together with the "allowances" representing medical-dental care costs prescribed by the Canadian Forces Superannuation Regulations.

Note 2: Pensionable Service

The amount of any annuity, cash termination allowance or annual allowance to which a contributor or his spouse or children may become entitled under the Act depends upon the number of years of "pensionable service" to the credit of the contributor at the date he ceases to be a member of the forces.

"Pensionable service" is described in detail in the Act. In general, the pensionable service of a contributor includes any period of service in the forces for which he has contributed or has elected to contribute. It may also include, if the contributor elects to contribute therefor, any period of prior service, such as

- (a) as a full-time, paid employee in the Public Service,
- (b) as a member of the Royal Canadian Mounted Police,
- (c) as a member
 - (i) on active service during time of war of the naval, army or air forces of Her Majesty raised by Canada,
 - (ii) of the Canadian Army Special Force established in 1950,

- (iii) for three months or more of the Canadian Forces or of the naval, army or air forces of Her Majesty raised by Canada, other than the regular force, provided that such service was full-time and continuous,
- (iv) of the naval, army or air forces of Her Majesty other than those raised by Canada, provided that such service was full-time service during time of war or otherwise in the permanent forces, and

one-fourth of any period of prior service in the Canadian Forces or in the naval, army or air forces of Her Majesty raised by Canada, other than the regular force, during which the contributor was liable to be called out for periodic training or duty otherwise than during an emergency.

Note 3: Service in the Forces

The length of a contributor's "service in the forces" together with circumstances of his termination of service govern the type of benefit payable to him or to his spouse or children.

For most purposes, "service in the forces" means service in the regular force of the Canadian Forces or its predecessors excluding any service for which a contributor was paid a return of contributions or lump sum payment under this Act and for which he did not on subsequent enrolment elect to pay. However, for the purpose of computing the length of service in the forces of a contributor who dies leaving dependants entitled to benefit or who is compulsorily retired either because of disability or, in some circumstances, to promote economy or efficiency, certain types of elective service are prescribed by the Act as "service in the forces" in addition to service in the regular force. Such "service in the forces" consists of any periods of elective pensionable service described in items (a), (b) and (c)(i), (ii) and (iii) of Note 2 with the provision that the service described in item (c)(iii) must have been in a theatre of active operations.

When calculating the length of service for purposes of determining the benefits payable upon voluntary retirement of a contributor with 10 or more years service in the regular force, any period of active service during time of war in the naval, army or air forces of Her Majesty raised by Canada is included.

Note 4: Short Engagement

As defined in the Act, short engagement means a fixed period of service of a member of the regular force as an officer, other than as a subordinate officer, of such duration shorter than an intermediate engagement as is prescribed by regulation. A period of 9 years has been prescribed by regulation for a short engagement for commissioned officers.

Note 5: Intermediate Engagement

As defined in the Act, intermediate engagement means a fixed period of service of a member of the regular force of such duration as is prescribed by regulation. A period of service to complete 20 years of total continuous service plus any additional time necessary to reach age 40 has been prescribed as an intermediate engagement for all members.

Note 6: Retirement because of Age

Retirement because of age in this report means ceasing to be a member of the forces at or after the prescribed retirement age for any reason other than disability, misconduct, or death. The prescribed retirement ages are described in section III(E) of this report.

Note 7: Return of Contributions

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

Note 8: 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 basic contributions as a result of integration of the Plan with the Canada Pension Plan.

Note 9: 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 forces, 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 10: Annuity Payable upon Retirement during
an Indefinite Period of Service

The amount of annuity prescribed by regulation to which a contributor who, not having reached retirement age, ceases to be a member of the regular force while on an indefinite period of service after completing an intermediate engagement for any reason other than disability, to promote economy or efficiency, or misconduct is entitled, is equal to the greater of an immediate annuity based upon his pensionable service to date of completion of his intermediate engagement only and his six year average annual pay at date of retirement, and the immediate annuity based upon his total pensionable service to date of retirement and his six year average annual pay at that date reduced by 5% of such amount of annuity for each full year by which

(A) in the case of a contributor who is an officer, his age at the date of retirement is less than the retirement age applicable to his rank, or

(B) in the case of a contributor other than an officer, his age at the date of retirement is less than the retirement age applicable to his rank or his period of service in the forces is less than 25 years,

whichever is the lesser.

Note 11: 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 and receives a pension under the terms of the Canada Pension Plan, 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 12: Immediate Reduced Annuity

Immediate reduced annuity means an immediate annuity where the annual amount of the annuity as determined in Note 9 is reduced as stated below.

If a contributor is compulsorily retired to promote economy or efficiency, and has ten or more years but less than twenty years of service, he may choose with the consent of the Minister of National Defence an immediate annuity reduced, until such time as he reaches age 65 but not thereafter, by 5% for each full year not exceeding six by which

- (A) the period of his service in the forces is less than 20 years, or
 - (B) his age at the time of his retirement is less than the retirement age applicable to his rank,
- whichever is the lesser.

A contributor who, not having reached retirement age, ceases to be a member of the forces for any reason other than disability, to promote economy or efficiency, misconduct, or while on an indefinite period of service is entitled

- 1) if he is an officer and has served in the forces for 20 years or more, to an immediate annuity reduced by 5% for each full year by which his age at the time of his retirement is less than the retirement age applicable to his rank, or
 - 2) if he is other than an officer and has served in the forces for 20 years or more but less than 25 years, to an immediate annuity reduced by 5% for each full year by which
 - (A) the period of his service in the forces is less than 25 years, or
 - (B) his age at the time of his retirement is less than the retirement age applicable to his rank
- whichever is the lesser.

Note 13: Retirement because of Misconduct

In the case of compulsory retirement because of misconduct, the contributor is entitled to a return of contributions, or if he has served in the forces for 10 or more years, with the consent of the Treasury Board, the whole or any part specified by the Treasury Board of any annuity to which he would have been entitled had he, at the time of his retirement, been retired "retired for other reasons" (i.e. excluding disability, economy and efficiency, completion of short or intermediate engagement and misconduct), except that in no case 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 14: Eligible Children

Eligible children under 25 includes 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 15: Annual Allowances*

Annual allowances to the surviving spouse and children of a contributor means 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 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 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 Minister of National Defence is not satisfied that the contributor was at the time of his marriage in such a condition of health as to justify him 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 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 forces marries after age 60, his surviving spouse is not entitled to any annual allowance, unless after marriage the member became or continued to be a contributor.

* 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 forces 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 16: Minimum Benefit

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, there is paid to the estate of the contributor

- (1) if the contributor was not a member of the regular 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,
- (2) if the contributor was a member of the regular 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, or
- (3) if the contributor was retired and entitled to an immediate annuity from which a deduction had been made as a result of integration with the Canada Pension Plan, any amount by which the cash termination allowance exceeds the aggregate of all amounts paid to those persons and to the contributor.

A P P E N D I X 3

<u>Age</u>	<u>Promotional salary scales</u>		<u>Salary scales incorporating both promotional and general increases</u>	
	<u>Officers</u>	<u>Other Ranks</u>	<u>Officers</u>	<u>Other Ranks</u>
20	.200	.392	.028	.056
21	.230	.435	.034	.065
22	.286	.482	.045	.075
23	.380	.527	.062	.087
24	.476	.566	.082	.098
25	.534	.594	.097	.108
26	.572	.614	.109	.117
27	.605	.630	.121	.126
28	.631	.645	.132	.135
29	.654	.657	.144	.145
30	.674	.668	.156	.155
31	.692	.677	.168	.164
32	.709	.687	.181	.175
33	.722	.696	.193	.186
34	.734	.705	.206	.198
35	.745	.714	.220	.211
36	.754	.722	.234	.224
37	.763	.731	.248	.238
38	.771	.740	.264	.253
39	.780	.749	.280	.269
40	.788	.758	.297	.286
41	.797	.768	.315	.304
42	.805	.779	.334	.324
43	.814	.792	.355	.346
44	.823	.804	.377	.368
45	.831	.817	.400	.393
46	.841	.831	.425	.420
47	.853	.846	.452	.449
48	.868	.862	.483	.480
49	.886	.877	.518	.513
50	.905	.891	.556	.547
51	.922	.905	.594	.583
52	.940	.920	.636	.623
53	.955	.936	.679	.665
54	.968	.953	.722	.711
55	.978	.967	.766	.758
56	.984	.977	.810	.804
57	.990	.985	.855	.851
58	.993	.994	.901	.902
59	.997	.997	.950	.950
60	1.000	1.000	1.000	1.000

A P P E N D I X 4

Rates of retirement assumed for contributors
with entitlement to a return of contributions

<u>Age at Retirement</u>	<u>Males</u>		<u>Females</u>	
	<u>Officers</u>	<u>Other Ranks</u>	<u>Officers</u>	<u>Other Ranks</u>
17	.26892	.24270	.26600	.21267
18	.23907	.22884	.27200	.19827
19	.19030	.21009	.23500	.18056
20	.14201	.18686	.15400	.16213
21	.10724	.16147	.08200	.14594
22	.08510	.13699	.06300	.13393
23	.07144	.11554	.08800	.12635
24	.06489	.09747	.11100	.12201
25	.06297	.08197	.11700	.11889
26	.06158	.06834	.12400	.11501
27	.05863	.05660	.12900	.10909
28	.05361	.04713	.13100	.10071
29	.04569	.03989	.13200	.08986
30	.03570	.03424	.13000	.07663
31	.02673	.02934	.12600	.06162
32	.02036	.02462	.12000	.04655
33	.01548	.01995	.10900	.03382
34	.01161	.01540	.09000	.02501
35	.00939	.01114	.06500	.01968
36	.00811	.00747	.05000	.01585
37	.00658	.00472	.05000	.01171
38	.00530	.00298	.03300	.00672
39	.00430	.00198	.02800	.00092
40	.00350	.00128	.02400	.00000
41	.00290	.00073	.02100	.00000
42	.00240	.00050	.01800	.00000
43	.00190	.00030	.01600	.00000
44	.00150	.00010	.01300	.00000
45	.00110	.00000	.01000	.00000
46	.00070	.00000	.00800	.00000
47	.00040	.00000	.00600	.00000
48	.00020	.00000	.00400	.00000
49	.00010	.00000	.00200	.00000
50	.00000	.00000	.00000	.00000

A P P E N D I X 5

Rates of retirement assumed for contributors with entitlement to an annuity or cash termination allowance for reasons other than disability

<u>Age at Retirement</u>	<u>Officers</u>	<u>Other Ranks</u>
28	.00010	.00000
29	.00020	.00010
30	.00030	.00010
31	.00050	.00020
32	.00060	.00040
33	.00070	.00080
34	.00080	.00150
35	.00100	.00251
36	.00172	.00846
37	.00315	.02827
38	.00815	.04458
39	.01665	.05887
40	.02062	.06659
41	.01816	.08487
42	.01932	.11003
43	.03556	.13945
44	.06271	.14092
45	.09202	.12902
46	.11834	.12278
47	.12767	.12746
48	.12615	.14534
49	.14444	.29928
50	.17291*	.46768
51	.15878	.46342
52	.13256	.41848
53	.25140	.36315
54	.50560	.51585
55	.64341	.80330
56	.42500	.90000
57	.27778	.91000
58	.50000	.93000
59	.72727	.96000
60	1.00000	1.00000

* for female officers a rate of retirement of .40000 was assumed at age 50

A P P E N D I X 6

Rates of retirement assumed for contributors with entitlement to
an annuity or cash termination allowance because of disability

<u>Age at retirement</u>	<u>Males</u>		<u>Females</u>
	<u>Officers</u>	<u>Other Ranks</u>	<u>(Officers and Other Ranks)</u>
17	.00227	.00679	.00050
18	.00244	.00690	.00220
19	.00260	.00681	.00390
20	.00273	.00658	.00480
21	.00278	.00627	.00540
22	.00275	.00593	.00570
23	.00264	.00561	.00580
24	.00246	.00532	.00560
25	.00224	.00508	.00530
26	.00201	.00489	.00490
27	.00179	.00475	.00410
28	.00159	.00464	.00350
29	.00142	.00456	.00320
30	.00127	.00450	.00310
31	.00115	.00447	.00300
32	.00105	.00449	.00310
33	.00098	.00458	.00310
34	.00094	.00476	.00320
35	.00093	.00505	.00340
36	.00097	.00547	.00350
37	.00104	.00600	.00370
38	.00113	.00662	.00390
39	.00123	.00731	.00410
40	.00131	.00800	.00440
41	.00138	.00865	.00470
42	.00142	.00921	.00500
43	.00145	.00965	.00540
44	.00150	.00994	.00580
45	.00161	.01010	.00620
46	.00182	.01016	.00670
47	.00216	.01015	.00730
48	.00262	.01016	.00790
49	.00320	.01025	.00850
50	.00384	.01049	.00920
51	.00449	.01093	.01000
52	.00508	.01160	.01080
53	.00555	.01250	.01170
54	.00587	.01361	.01260
55	.00610	.01487	.01360
56	.00620	.01621	.01470
57	.00630	.01753	.01590
58	.00640	.01877	.01730
59	.00650	.01984	.01900

A P P E N D I X 7

Rates of mortality assumed for active contributors

<u>Age</u>	<u>Males</u>		<u>Females</u>
	<u>Officers</u>	<u>Other Ranks</u>	<u>(Officers and Other Ranks)</u>
17	.00070	.00136	.00045
18	.00070	.00156	.00046
19	.00070	.00164	.00047
20	.00080	.00164	.00047
21	.00080	.00158	.00047
22	.00080	.00150	.00047
23	.00090	.00143	.00048
24	.00090	.00136	.00049
25	.00100	.00131	.00050
26	.00100	.00126	.00052
27	.00100	.00122	.00053
28	.00110	.00118	.00055
29	.00110	.00113	.00056
30	.00120	.00107	.00057
31	.00120	.00101	.00060
32	.00130	.00097	.00063
33	.00140	.00094	.00069
34	.00150	.00095	.00075
35	.00160	.00100	.00082
36	.00170	.00109	.00090
37	.00180	.00122	.00099
38	.00190	.00137	.00109
39	.00200	.00153	.00120
40	.00210	.00170	.00132
41	.00220	.00185	.00145
42	.00230	.00201	.00160
43	.00240	.00216	.00176
44	.00250	.00234	.00192
45	.00263	.00258	.00210
46	.00270	.00290	.00231
47	.00281	.00334	.00254
48	.00301	.00392	.00280
49	.00337	.00467	.00308
50	.00395	.00540	.00338
51	.00477	.00600	.00371
52	.00584	.00660	.00407
53	.00708	.00710	.00445
54	.00840	.00760	.00485
55	.00967	.00820	.00528
56	.01078	.00890	.00575
57	.01163	.00970	.00627
58	.01221	.01060	.00682
59	.01221	.01160	.00740

A P P E N D I X 8

Rates of mortality assumed for contributors retired for
reasons other than disability

<u>Age</u>	<u>Males</u>	<u>Females</u>	<u>Age</u>	<u>Males</u>	<u>Females</u>
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

A P P E N D I X 9

Ultimate rates of mortality assumed for contributors retired because
of disability (applicable after at least two years
have elapsed from date of retirement)

<u>Age</u>	<u>Males</u>	<u>Females</u>	<u>Age</u>	<u>Males</u>	<u>Females</u>
25	.00222	.00075	65	.03834	.01884
26	.00214	.00078	66	.04185	.02064
27	.00208	.00079	67	.04569	.02268
28	.00204	.00082	68	.04975	.02487
29	.00201	.00084	69	.05402	.02720
30	.00198	.00085	70	.05860	.02975
31	.00198	.00090	71	.06364	.03265
32	.00201	.00095	72	.06925	.03603
33	.00208	.00104	73	.07536	.03973
34	.00218	.00113	74	.08190	.04369
35	.00230	.00123	75	.08895	.04812
36	.00244	.00135	76	.09663	.05317
37	.00262	.00148	77	.10503	.05908
38	.00284	.00163	78	.11410	.06573
39	.00307	.00180	79	.12377	.07300
40	.00334	.00198	80	.13411	.08101
41	.00367	.00218	81	.14524	.08992
42	.00406	.00240	82	.15725	.09984
43	.00451	.00264	83	.17007	.11067
44	.00501	.00288	84	.18364	.12234
45	.00558	.00315	85	.19804	.13498
46	.00621	.00346	86	.21340	.14871
47	.00692	.00381	87	.22979	.16368
48	.00768	.00420	88	.24712	.17977
49	.00850	.00462	89	.26538	.19693
50	.00942	.00507	90	.28463	.21526
51	.01041	.00556	91	.30498	.23491
52	.01152	.00610	92	.32651	.25600
53	.01272	.00667	93	.33488	.26320
54	.01399	.00728	94	.33005	.25644
55	.01539	.00792	95	.33351	.25869
56	.01690	.00862	96	.36675	.29295
57	.01858	.00941	97	.45129	.38220
58	.02040	.01023	98	.61867	.56018
59	.02232	.01110	99	.85459	.81158
60	.02442	.01206	100	1.00000	1.00000
61	.02672	.01312			
62	.02927	.01436			
63	.03207	.01573			
64	.03508	.01720			

A P P E N D I X 10

Rates of remarriage and mortality assumed for widows

Age at Becoming Widow	<u>Remarriage Rates</u>				Ultimate (at age Attained)	<u>Age Attained</u>	<u>Mortality Rates</u>	<u>Age Attained</u>	<u>Mortality Rates</u>
	<u>Year of Widowhood</u>								
	<u>1</u>	<u>3</u>	<u>5</u>	<u>10</u>					
25	.050	.148	.132	.060	.028	39	.000587	74	.020422
30	.029	.086	.076	.035	.016	44	.000868	79	.037897
35	.018	.048	.042	.019	.009	49	.001328	84	.065222
40	.011	.027	.023	.010	.004	54	.002014	89	.111169
45	.006	.015	.012	.005	.002	59	.003310	94	.189226
50	.004	.008	.006	.002	.001	64	.005831	99	.304679
55	.002	.004	.003	.001	0	69	.009976	104	.471522

Rates of remarriage and mortality assumed for widowers

Age at Becoming Widower	<u>Remarriage Rates</u>				Ultimate (at age) Attained	<u>Age Attained</u>	<u>Mortality Rates</u>	<u>Age Attained</u>	<u>Mortality Rates</u>
	<u>Year of Widowerhood</u>								
	<u>1</u>	<u>3</u>	<u>5</u>						
25	.071	.258	.258	.198	.198	30	.000809	65	.021260
30	.065	.215	.198	.139	.139	35	.001122	70	.036106
35	.047	.130	.116	.094	.094	40	.001633	75	.055293
40	.031	.078	.069	.059	.059	45	.002922	80	.087431
45	.019	.048	.040	.027	.027	50	.005285	85	.130102
50	.013	.028	.022	.014	.014	55	.008519	90	.179452
55	.008	.014	.011	.009	.009	60	.013119	95	.241164

A P P E N D I X 11

Proportions of Contributors Married at Death and
Average Ages of Spouses Corresponding to Ages
of Contributors at Death

Age of Contributor at Death (last birthday)	Males		Females	
	<u>Proportions Married</u>	<u>Average Age of Widower</u>	<u>Proportions Married</u>	<u>Average Age of Widower</u>
25	.392	24	.430	27
30	.760	29	.600	32
35	.904	33	.630	37
40	.937	38	.630	42
45	.958	43	.620	47
50	.944	48	.570	52
55	.932	53	.470	57
60	.912	57	.360	62
65	.889	62	.310	67
70	.871	66	.260	72
75	.878	70	.210	77
80	.757	74	.160	82
85	.454	78	.010	87
90	.242	82	-	-
95	.129	86	-	-
100	.037	89	-	-

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

<u>Age</u>	<u>Proportion</u>
18	0.50
19	0.65
20	0.80
21	0.60
22	0.50
23	0.50
24	0.30

APPENDIX 12A

Male Officers as at December 31, 1980

Number of Contributors
and
Average Current Pay and Allowances

Age/Serv.	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	0-39
15-19	700 7050								700 7050
20-24	1806 10236	399 17467							2205 11544
25-29	634 16835	1499 22698	294 25373						2427 21491
30-34	99 23651	496 26746	1188 28619	423 29751					2206 28192
35-39	39 29934	61 29211	406 32639	1444 31496	509 31959				2459 31699
40-44	13 27773	14 30425	59 32569	302 33582	1002 32345	553 33613			1943 32860
45-49	20 29481	11 33190	55 32583	71 34714	213 34883	828 34174	365 35409		1563 34461
50-54	28 32030	3 37168	27 32226	29 34209	58 34886	226 36729	347 36102	67 38235	785 36030
55-59	1 30108	1 30108	0 0	5 30012	4 30693	11 38585	16 44836	7 35779	45 38340
60	0 <u>0</u>	0 <u>0</u>	0 <u>0</u>	0 <u>0</u>	0 <u>0</u>	1 <u>46308</u>	0 <u>0</u>	0 <u>0</u>	1 <u>46308</u>
15-60	3340 11821	2484 22937	2029 29223	2274 31580	1786 32617	1619 34376	728 35947	74 38002	14334 25844

Average Age: 34.0

Average Service: 14.0

APPENDIX 12B

Male Other Ranks as at December 31, 1980

Number of Contributors
and
Average Current Pay and Allowances

Age/Serv.	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	0-39
15-19	5039 8365								5039 8365
20-24	13921 11587	2082 17073							16003 12301
25-29	2585 13844	6094 17751	1078 18614						9757 16811
30-34	122 16983	830 18113	5922 18909	1828 19495					8702 18929
35-39	20 18464	27 18726	769 19127	5804 19801	1400 20547				8020 19860
40-44	30 19088	5 20150	74 20053	1002 19807	4802 20817	1076 21674			6989 20788
45-49	45 19119	3 20812	13 19857	61 20290	945 20822	3046 21858	215 23464		4328 21654
50-54	44 19825	0 0	5 21967	6 21926	131 20334	501 22076	344 24956	17 27025	1048 22788
55-59	4 <u>20178</u>	0 <u>0</u>	0 <u>0</u>	0 <u>0</u>	0 <u>0</u>	4 <u>25263</u>	5 <u>27552</u>	5 <u>26854</u>	18 <u>25211</u>
15-59	21810 11191	9041 17633	7861 18904	8701 19742	7278 20757	4627 21842	564 24411	22 26986	59904 16533

Average Age: 30.6

Average Service: 11.2

APPENDIX 12C

Female Officers as at December 31, 1980

Number of Contributors
and
Average Current Pay and Allowances

Age/Serv.	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	0-39
15-19	67 6568								67 6568
20-24	161 10880	24 17548							185 11745
25-29	120 17959	98 24090	1 24528						219 20733
30-34	56 18034	99 26007	33 27707	0 0					188 23931
35-39	14 22145	23 25877	27 30826	8 31698	2 29718				74 27710
40-44	0 0	4 26853	8 29238	13 31183	8 29666	5 32256			38 30140
45-49	0 0	0 0	5 29916	8 30363	5 31464	6 32218	5 33792		29 31451
50-54	1 20808	0 0	2 30108	3 30108	2 32358	11 32459	2 30108	0 0	21 31111
55-59	1 <u>30108</u>	0 <u>0</u>	0 <u>0</u>	0 <u>0</u>	0 <u>0</u>	2 <u>38778</u>	0 <u>0</u>	0 <u>0</u>	3 <u>35888</u>
15-59	420 13614	248 24433	76 29143	32 31006	17 30517	24 32883	7 32739	0 0	824 20050

Average Age: 29.3

Average Service: 6.4

APPENDIX 12D

Female Other Ranks as at December 31, 1980

Number of Contributors
and
Average Current Pay and Allowances

Age/Serv.	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	0-39
15-19	729 8041								729 8041
20-24	2458 11051	266 16880							2724 11620
25-29	482 13712	702 17373	12 18437						1196 15908
30-34	25 16141	143 17756	228 18530	3 21096					399 18122
35-39	2 17202	7 18269	33 18724	42 19403	5 20246				89 19154
40-44	0 0	2 18474	6 18948	17 19423	36 19632	1 19368			62 19467
45-49	0 0	0 0	0 0	1 22140	11 19240	13 19799	0 0		25 19647
50-54	0 0	0 0	0 0	0 0	2 22284	0 0	1 19908	0 0	3 21492
55-59	0 <u>0</u>	0 <u>0</u>	0 <u>0</u>	0 <u>0</u>	0 <u>0</u>	0 <u>0</u>	0 <u>0</u>	0 <u>0</u>	0 <u>0</u>
15-59	3696 10842	1120 17312	279 18558	63 19666	54 19708	14 19768	1 19908	0 0	5227 12864

Average Age: 23.9

Average Service: 4.1

APPENDIX 13A

Retired Contributors as at December 31, 1980

Age	<u>Other than Disability Pension</u>			<u>Annual Pension**</u>		<u>Disability Pension</u>			<u>Annual Pension**</u>	
	<u>Number*</u>			<u>CFSA</u>	<u>SRBA</u>	<u>Number*</u>			<u>CFSA</u>	<u>SRBA</u>
	<u>Male</u>	<u>Fem</u>	<u>Total</u>	<u>(\$)</u>	<u>(\$)</u>	<u>Male</u>	<u>Fem</u>	<u>Total</u>	<u>(\$)</u>	<u>(\$)</u>
26-28	1	0	1	2,904	282	1	0	1	2,052	1,068
29-31	27	0	27	80,652	12,008	5	0	5	9,624	2,539
32-34	51	5	56	211,941	40,515	56	2	58	106,776	40,698
35-37	86	2	88	370,788	76,795	123	0	123	252,984	127,950
38-40	628	8	636	3,079,219	550,191	235	0	235	508,128	319,362
41-43	2,064	11	2,075	11,158,387	2,693,945	371	1	372	929,556	632,672
44-46	4,074	17	4,091	22,178,571	7,546,490	554	2	556	1,464,264	1,101,652
47-49	5,517	23	5,540	31,196,117	13,658,709	860	1	861	2,236,320	1,913,676
50-52	6,236	30	6,266	37,676,915	18,687,847	967	5	972	2,491,236	2,355,587
53-55	6,399	37	6,436	35,980,736	23,380,138	853	2	855	2,219,040	2,383,976
56-58	7,011	28	7,039	37,537,613	33,620,968	830	3	833	2,074,308	2,610,560
59-61	6,871	35	6,906	32,034,019	35,497,053	751	3	754	1,917,132	2,555,062
62-64	4,639	45	4,684	18,879,818	24,237,126	403	0	403	985,176	1,413,928
65-67	3,251	41	3,292	11,450,407	16,004,993	162	3	165	415,596	620,949
68-70	1,661	19	1,680	5,111,415	7,762,937	60	1	61	123,048	204,863
71-73	804	7	811	2,131,852	3,494,128	14	0	14	20,916	39,611
74-76	347	3	350	747,492	1,310,709	4	0	4	5,208	10,220
77-79	169	0	169	303,101	541,098	6	0	6	10,416	19,282
80-82	43	0	43	93,281	169,897	1	0	1	1,104	2,371
83-85	19	0	19	33,636	62,157	0	0	0	0	0
86-88	4	0	4	11,508	22,389	0	0	0	0	0
89-91	0	0	0	0	0	1	0	1	1,080	2,329
<hr/>										
49,902	311	50,213	250,270,374	189,370,373	6,257	23	6,280	15,773,964	16,358,356	

* 386 males and 4 females who were medically discharged under Q.R. & O. 15.01 article 3(b), which are cases medically unfit to perform their duties and not employable in the Forces, were included among "other than disability".

** CFSA 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, 1981, and CPP offsets for ages greater than 64 or for disability pensions where applicable.

APPENDIX 13B

Surviving Spouses* as at December 31, 1980

<u>Age</u>	<u>Number</u>	<u>Annual Allowance</u>	
		<u>CFSA</u> (<u>\$</u>)	<u>SRBA</u> (<u>\$</u>)
20-22	1	600	58
23-25	6	6,840	663
26-28	14	53,400	8,746
29-31	34	57,792	11,094
32-34	54	186,048	32,274
35-37	61	97,956	49,571
38-40	140	333,300	168,136
41-43	181	356,280	193,888
44-46	300	576,180	461,997
47-49	419	814,752	731,469
50-52	526	1,074,336	1,097,535
53-55	658	1,371,900	1,484,147
56-58	873	1,675,296	2,040,663
59-61	993	1,912,212	2,379,993
62-64	696	1,366,188	1,833,394
65-67	600	1,050,864	1,567,233
68-70	464	732,048	1,303,274
71-73	257	414,612	777,331
74-76	154	198,312	402,326
77-79	67	88,680	191,077
80-82	35	58,764	134,626
83-85	12	9,156	20,291
86-88	7	5,784	13,251
89-91	0	0	0
92-94	1	420	962
	<hr/>	<hr/>	<hr/>
	6,553	12,441,720	14,904,002

* Eight of the surviving spouses are widowers.