

Office of the Superintendent
of Financial Institutions

Bureau du surintendant
des institutions financières

Actuarial Report
as at 31 December 1993
on the
Pension Plan for the
CANADIAN FORCES

Canada

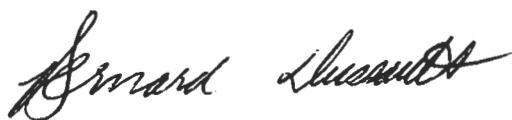
5 October 1995

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

Sir:

Pursuant to section 6 of the *Public Pensions Reporting Act*, I am pleased to submit my report on the actuarial review, as at 31 December 1993, of the pension plan established under the *Canadian Forces Superannuation Act*.

Yours sincerely,

A handwritten signature in cursive script, appearing to read "Bernard Dussault".

Bernard Dussault
Chief Actuary

TABLE OF CONTENTS

I-	Introduction	1
II-	Data	4
III-	Methods	6
IV-	Assumptions	8
V-	Valuation Results	18
	A- Balance Sheet	18
	B- Cost Certificate	19
	C- Sensitivity of Estimates to Variations in Economic Assumptions	20
	D- Reconciliation of Surplus(Deficit) and Normal Cost	21
VI-	Conclusions	24

APPENDICES

1.	Summary of Plan Provisions	25
2.	Sample Demographic Assumptions	37
3.	Summaries of Data	50

I- Introduction

Pursuant to the *Public Pensions Reporting Act* (PPRA), I have made an actuarial review as at 31 December 1993 of the pension plan established under the *Canadian Forces Superannuation Act* (CFSA). The previous review had been made as at 31 December 1990. The date of the next periodic review contemplated by the PPRA is 31 December 1996.

The provisions of the plan deemed to apply for purposes of this report are described in Appendix 1 and take into account the provisions that were effective as at the valuation date. Among the developments having taken place since the previous review, those materially affecting the plan valuation are described below.

- A- During the interim valuation period the Government has reduced the size of the regular force from about 87,000 to about 76,500 as of the date of this valuation. Over the following five years, the Government is planning an additional reduction that will bring the regular force size down to about 66,700 by 1 April 1998. The reduction is to be accomplished by attrition (retirements and voluntary releases) and the Force Reduction Program (FRP). The FRP is designed to produce selective attrition in certain occupational groups. Contrary to previous FRPs, this program is now applicable to both officers and other ranks. FRP superannuation benefits are being offered under the current CFSA benefits provisions entitled *Retirement to promote economy or efficiency*. Section IV, G, on page 13 of this report briefly describes the assumptions used to account for the FRP.
- B- The salary freeze applies over three years (1994 to 1996) in respect of economic increases and over two years in respect of seniority increases.
- C- Bill C-55, which received Royal Assent on 29 September 1992, amended certain Acts relating to pensions, including the CFSA, and also enacted the *Special Retirement Arrangements Act* (SRAA) and the *Pension Benefits Division Act* (PBDA).

1. *Special Retirement Arrangements Act (SRAA)*

The SRAA had not yet come into force by the valuation date. Its main purpose is to allow the Governor in Council to establish retirement compensation arrangements (RCAs) in order to provide for the normal accrual of pensions in respect of the portion of employment earnings that will be removed from the CFSA for compliance with the *Income Tax Act*. See also item 3 (d) on page 3, 21.

2. *Pension Benefits Division Act (PBDA)*

The PBDA had not yet come into force by the valuation date. The purpose of the PBDA is to provide, under certain plans including the CFSA, for a division, upon spousal (including common-law) union breakdown, of pension benefits accrued during spousal cohabitation. This provision is meant to be cost neutral.

3. *Amendments to the CFSA*

The main modifications to the CFSA as a result of Bill C-55 are described below, of which only those described in paragraph (a) below had come into force by the valuation date.

(a) *Financing of the Plan*

These financing provisions of the underlying legislation are deemed to have come into force on 1 April 1991. The financing amendments may be broken down as follows:

i) *Government contributions*

The amended legislation provides for the full funding of existing pension obligations and those to accrue in the future. If an actuarial unfunded liability results as at any valuation date in respect of all benefits then accrued, the Account must then be credited annually with such amounts that in the opinion of the President of the Treasury Board will, over a period not exceeding 15 years, fully amortize that unfunded liability. In respect of future pension benefits accruing during any given year following a valuation date, the government must credit such contributions during that year which, together with the yearly employees' contributions and subsequent investment earnings thereupon, are adequate in the opinion of the President of the Treasury Board to meet the full actuarial cost of the underlying pension obligations.

ii) Supplementary benefits

The CFSA-related portion of the Supplementary Retirement Benefits Account (for inflation adjustments) was combined with the CFS Account. All supplementary benefits (inflation adjustments) are now paid from the CFS Account.

iii) Interest

The amount of investment earnings credited to the CFS Account may not be less than the amount computed using the interest rate determined in accordance with the formula described in item B-2, page 27.

(b) Optional Survivor Benefit

The revised legislation allows plan members to provide survivor benefits in respect of spousal relationships established over age 60 while retired, at a cost to be actuarially determined. This provision is meant to be cost neutral, the full cost being borne by the pensioner electing the option through an adjustment being made to his/her own pension. The effective date of this piece of legislation is 24 March 1994.

(c) Leave Without Pay

Employees may now elect not to contribute in respect of leave without pay periods in excess of three months. They may also elect later on to contribute in respect of such periods. The effective date of this piece of legislation has not yet been determined.

(d) Compliance with the *Income Tax Act*

Under the amended legislation, the CFSA regulations will prescribe yearly the maximum salary rate above which the CFSA will not apply for purposes of current pensionable service. See also item 1 above. The effective date of this amendment is 1 May 1995. Other provisions of the CFSA may be amended by regulation for the purposes of conforming with any provision of Section 147.1 of the *Income Tax Act* and Part LXXXV of the Income Tax Regulations, as they read on 15 January 1992.

II- Data

A- Overview

1. Active Contributors

The main characteristics of the 76,521 active contributors as at the end of 1993 are summarized in the following table:

Contributor	Number	Average		
		Age*	Service	Salary
Male Officers	15,475	34.7	14.2	\$51,074
Male Other ranks	52,627	32.6	12.5	\$36,913
Female Officers	1,828	30.0	8.4	\$41,410
Female Other ranks	6,591	30.9	10.1	\$35,097
Grand Total	76,521	32.8	12.5	\$39,728

Tables 3D, 3E, 3F and 3G, pages 55 to 58, show detailed information for each group.

2. Pensioners and Survivors

As at 1 January 1994, the plan was paying benefits to pensioners and survivors at the following annual rates:

Type of beneficiary	Number	Age*	Males	Annual benefit (millions)
Retirement pensioners**	66,281	60.4	98.7%	\$1,242.0
Disability pensioners	4,640	62.9	99.3%	\$43.8
Surviving spouses	15,289	66.8	0.0%	\$114.8
Grand Total	86,210	61.7	81.2%	\$1,400.6

In addition there were 1,046 surviving children beneficiaries.

Tables 3H, 3I and 3J, pages 59 to 61, show detailed information on the benefits to pensioners and survivors. In determining the yearly amounts of pension shown in these tables, the 1 January 1994 inflation increase adjustment was taken into account. As well, the figures in these tables recognize the benefit reductions resulting from the Canada and the Québec Pension Plans (C/QPP) offsets applied to those over age 65 and those under age 65 in receipt of disability pensions.

B- Sources of Valuation Data

The Department of National Defence provided relevant valuation data on contributors, pensioners and survivors. In accordance with section 8 of the PPRA, the Comptroller General of Canada provided a certification of the assets of the plan.

* Average age last birthday.

** Includes 91 former contributors whose pension benefits are deferred to age 60.

C- Validation of Valuation Data

The main tests applied to the basic data can be separated into two categories: status tests and benefit tests.

1. Status Tests

The valuation data supplied by the Department of National Defence contains all the status information of a member during the intervaluation period of 1 January 1991 to 31 December 1993. The following status tests were made:

- (a) a reconciliation was made between the status of members as at 1 January 1991 as per the current valuation data and the status of members as at 31 December 1990 as per the previous valuation data; and
- (b) for all pensioners, a comparison of members valuation data as at 31 December 1993 with the membership shown in the Annual Report on the Canadian Forces Superannuation Act for the fiscal year ended 31 March 1994, taking into account status changes occurring in the three months following the valuation date.

2. Benefit Tests

Consistency tests were made to ensure that all proper information to value the members' status at 31 December 1993 was included:

(a) For Active Members

- i) verifying that the pensionable service of active contributors was reasonable in relation to the attained age and classified rank;
- ii) verifying that the salary of the member was reasonable with respect to classified rank.

(b) For Pensioners and Survivors in Receipt of an Annuity

verifying that the amount of the annuity, including indexation up to 1 January 1994, was included and reasonable.

(c) Outstanding Terminations

verifying that the lump sum payment was included.

Based on the omissions and discrepancies identified by these tests and several additional tests, appropriate adjustments were made to the basic data after consulting with the data providers.

D- Acknowledgements

The co-operation and able assistance received from various sections of the Department of National Defence and from the Comptroller General of Canada deserve to be acknowledged.

III- Methods

A- Assets

The CFS Account corresponds to the excess of past contributions to the plan over past benefit payments, all accumulated with interest. These assets are shown at their book value, as opposed to market value, because the balance in the CFS Account is exclusively constituted of notional government securities that are held until maturity.

B- Normal Costs

The projected accrued benefit or projected unit credit actuarial cost method was used to compute normal costs in respect of active contributors. Under this method, the normal cost computed in respect of a given year corresponds to the present value, made using the yields described in section D below, of all future benefits accrued in respect of that year's pensionable service. Consistent with this cost method, salaries are projected up to retirement using the assumed annual increases in average salaries (including general economic increases as well as those arising from seniority and promotion).

C- Liabilities

1. Active contributors

Consistent with the projected unit credit actuarial cost method employed to estimate normal costs, the plan's liabilities in respect of active contributors as at the valuation date correspond to the present value, made using the yields described in section D below, of all future benefits accrued as at that date in respect of all prior years' pensionable service.

2. Pensioners and survivors

Consistent with actuarial practice and standards, the plan's liabilities as at the valuation date in respect of pensioners and survivors correspond to the present value, made using the yields described in section D below, of all remaining future benefits.

D- Projected fund yields

The rates of interest used for computing the present value of benefits involved in the projection of the normal costs and liabilities mentioned in sections B and C above are the projected fund yields shown in the table on page 12. These yields were determined using the open-group approach, i.e., expected future contributions are taken into account in projecting the current annual yield on the Account.

The open-group approach was adopted in accordance with the plan provision, common to the three plans established under the CFSA, the PSSA and the RCMPSA, that stipulate that the average yield on the combined accounts of these three plans is to be used in allocating aggregate investment earnings to each of the three accounts.

The projected fund yields were determined explicitly using a trial and error process involving all investment components of the three accounts as at the valuation date, the assumed future new money interest rates (shown in the first column of the table on page 12), and all future contributions (including payments towards the amortization of any unfunded liabilities) as well as all future expected benefits payable in respect of pension entitlement accruing both before and after the valuation date.

In previous reports, the projected yields were determined on a closed-group basis. The effect of the new open-group approach is shown in Section V-D below (page 21) on the reconciliation of surplus(deficit) and normal cost.

IV- Assumptions

A- Basic Economic Assumptions

The following basic economic assumptions are required for valuation purposes in respect of each year following the valuation date:

- year's average new money interest rate applicable to 20-year government bonds purchased during the year;
- year's increase in the Consumer Price Index (CPI);
- year's increase in the Industrial Aggregate of average weekly earnings;
- year's increase in contributors' average annual salary (exclusive of seniority and promotional increases).

To determine these assumptions, analyses were made of short (10-year), medium (25-year) and long term (50-year) experience, of the current state and outlook of the economy, as well as of available economic forecasts like those included in the 1995 federal budget (short-term forecast) and those made by the Conference Board of Canada. Three main conclusions were reached as a result of these analyses:

1. High current real rates of return (i.e., the excess of new money interest rates over annual increases in the CPI) on 20-year government bonds are expected to return eventually to 3% per annum.
2. Low current annual increases in the CPI will rise gradually to reach eventually an ultimate level of 3%.
3. Low current real annual earnings increases (productivity gains, i.e., the difference between annual increases in salary rates and annual increases in the CPI), will rise gradually to reach eventually an ultimate level of 1%. The assumed annual increase in contributors' average annual salary would normally for any year be the same as the assumed increase in the Industrial Aggregate of average weekly earnings. However, it was adjusted in the short term to account for the remaining three years (1994 to 1996) of salary freeze imposed on government employees.

These conclusions are the same as those underlying the ultimate (i.e., after year 2000) values assumed for the previous valuation. The rationale is as follows:

- (a) The assumed ultimate real rate of return on 20-year government bonds at 3% per annum appears a reasonable floor level relative to the average experience of the last 25 years and the current outlook for the Canadian economy (e.g., globalization of markets and size of the public debt).
- (b) The assumed ultimate level of inflation at 3% per annum, with the prospects of stable moderate inflation from now on, appears appropriate. Inflation was fairly stable at levels of 4% to 5% in the 1983-1991 period, but dropped below 2% in the period 1992 to 1994. Considering the normal fluctuations in the financial and labour markets, it is not expected that inflation will remain at these relatively low levels forever. The CPI increased annually by 6.01% and 4.63% on average over the past 25 and 50 years, respectively.
- (c) The assumed ultimate productivity rate was kept at 1% per annum. It has been decided to retain this lower level which happens to correspond approximately to the average Canadian experience (0.86%) in the private sector over the last 25 years and as the salary increases in the public sector could not be expected to remain indefinitely lower than those in the private sector.

B- Derived Economic Assumptions

The following assumptions were derived from the basic economic assumptions:

1. Yearly fund yields

Such yields are required for the computation of present values of benefits involved in the determination of the plan's liabilities. The methodology used to determine the projected fund yields is described in Section III-D above (Methods, page 6).

2. Year's increase in the CPP Year's Maximum Pensionable Earnings (YMPE)

The YMPE is involved in the valuation process by virtue of the integration of the CFSA with the C/QPP. The assumed increase in the YMPE for a given year was derived, in accordance with the *Canada Pension Plan*, to correspond to the increase in the assumed Industrial Aggregate of average weekly earnings (section A above) over the two consecutive 12-month periods ending 30 June of the previous year.

3. Year's increase in the pension indexing factor

The year's pension indexing factor is involved in the valuation process by virtue of its role in the pension inflation adjustments. It was derived by applying the Benefit Index formula, described in Appendix 1, which relates to assumed CPI increases over successive 12-month periods ending 30 September.

C- Seniority and Promotional Salary Increases

Promotion means changing to a higher rank, and *seniority* means length of service within a rank level. In the previous valuation both these factors were grouped under *promotions*.

Pursuant to the federal budget of February 1994, seniority increases in respect of government employees are suspended for two years. Moreover, there will be no catch-up when the suspension is lifted. Because this is a short temporary suspension, i.e., seniority increases are expected to resume in two years, it is deemed that it will not materially affect the projected amount of retirement pensions, which depend on the highest consecutive six-year earnings average. It was accordingly ignored for valuation purposes.

Separate rates were used for officers and other ranks. The rates that were used in the previous valuation were retained for members with at least 7 years of service. These graduated rates were determined by imputing 50% credibility to the 1981-83 experience and 50% credibility to the 1984-87 experience. For members with less than 7 years of service, the 1991-1993 non-graduated experience, which reflected very closely the previous valuation increases, was considered appropriate (table 2A, page 38).

D- Margin Against Adverse Fluctuations

Actuarial valuations prepared for private employers' pension plans normally include safety margins. This is generally done mainly to ensure that in case of plan wind-up there would be at that time, taking into account possible future fluctuations in economic and demographic factors, sufficient funds for the payment of all future benefits accrued as at the wind-up date. Such rationale does not appear to apply for the CFSA because the plan sponsor is the Canadian government.

However, a secondary objective of a margin consists of ensuring as much as possible that any eventual difference between assets and liabilities will be positive rather than negative, and therefore that any required financing adjustments will be in respect of a surplus rather than a deficit. This objective is deemed to be met implicitly through the assumed ultimate real rate of return on investments which, at 3%, most likely errs on the safe side.

In previous reports, the explicit margin corresponded to a reduction of 1% in the yearly projected fund yield provided it would not fall below 6%. For this report, the explicit margin was removed.

As may be seen in section V-D on page 21 (Reconciliation of Surplus(Deficit) and Normal Cost), the removal of the margin entails, other things being equal, a material reduction in the liabilities and in the normal cost.

E- Administration Expenses

No provision was made regarding the expenses incurred for the administration of the plan in computing its liabilities and normal costs because the CFSA is administered by the government with no related charge being applied to the CFS Account.

F- Summary of Basic and Derived Economic Assumptions

Year	Interest		Inflation		Employment Earnings		
	New Money Interest (%)	Projected Fund Yield (%)	CPI Increase (%)	Pension Indexing (%)	Industrial Aggregate Increase (%)	YMPE Increase (%)	Average Salary Increase*
1994	8.3**	10.43**	0.2**	1.9**	1.8**	2.99**	0.0**
1995	9.0	10.3	1.8	0.6**	2.5	1.45**	0.0
1996	8.3	10.2	1.8	1.4	2.8	2.15	0.0
1997	7.1	10.0	2.0	1.8	3.0	2.65	1.5
1998	6.8	9.7	2.5	2.0	3.5	2.90	2.0
1999	6.5	9.5	3.0	2.4	4.0	3.25	3.0
2000	6.2	9.2	3.0	2.9	4.0	3.75	4.0
2001	6.0	8.8	3.0	3.0	4.0	4.00	4.0
2002	6.0	8.4	3.0	3.0	4.0	4.00	4.0
2003	6.0	8.2	3.0	3.0	4.0	4.00	4.0
2004	6.0	7.9	3.0	3.0	4.0	4.00	4.0
2005	6.0	7.7	3.0	3.0	4.0	4.00	4.0
2006	6.0	7.5	3.0	3.0	4.0	4.00	4.0
2007	6.0	7.3	3.0	3.0	4.0	4.00	4.0
2008	6.0	7.2	3.0	3.0	4.0	4.00	4.0
2009	6.0	7.0	3.0	3.0	4.0	4.00	4.0
2010	6.0	6.9	3.0	3.0	4.0	4.00	4.0
2011	6.0	6.7	3.0	3.0	4.0	4.00	4.0
2012	6.0	6.5	3.0	3.0	4.0	4.00	4.0
2013	6.0	6.4	3.0	3.0	4.0	4.00	4.0
2014	6.0	6.3	3.0	3.0	4.0	4.00	4.0
2015	6.0	6.2	3.0	3.0	4.0	4.00	4.0
2016	6.0	6.1	3.0	3.0	4.0	4.00	4.0
2017	6.0	6.1	3.0	3.0	4.0	4.00	4.0
2018+	6.0	6.0	3.0	3.0	4.0	4.00	4.0

* Exclusive of the seniority and promotional increases.

** These figures reflect actual experience.

G- Demographic Assumptions

For the previous valuation, the membership data and demographic assumptions were grouped by individual age *nearest* basis and years of service on a *last* basis. For this valuation, the *last* basis was used for both age and years of service, i.e., age and years of service were rounded to the next lower integer. The demographic assumptions were also derived on this basis.

As mentioned in the introduction, the Force Reduction Plan (FRP) is one of the methods that will be used to reduce the size of the regular force to 66,700 by 1 April 1998. The implementation of such plan is done at the beginning of each fiscal year when specific occupational groups are targeted for reduction. Following discussion with representatives of the Canadian Forces, the FRP is expected to be in effect during the next three years and thereafter normal attrition would be enough to produce the expected target. In light of this, the three-year select period, established in the preceding report, will be maintained for those assumptions dealing with the FRP.

1. Current Contributors

(a) New members

To estimate the normal costs shown in the cost certificate (section V), assumptions are required regarding the number, age, sex and initial salary rate of future new members for 1994, 1995 and 1996. For all members, the replacement rate of terminations was set for 1994 to 1997 at 46.1% so as to obtain a regular force reducing to approximately 66,700 at the end of the period (1 January 1998). After 1997, the replacement rate is assumed at 100%.

(b) Rates of retirement (less than 20 years of service, other than disability)

i) Rates of retirement

Separate rates were derived for four groups: male and female officers, male and female other ranks. A three-year period was used for other ranks to take account of the FRP. Because the effect of the FRP would be minimal for officers, a three-year period was not used. The same rate, though varying by age, was applied in each of the three years. For officers' ultimate and other ranks' select period, the rates were derived by giving 50% credibility to the previous valuation assumption and 50% credibility to the 1991-1993 experience. Other ranks' ultimate rates were not modified and are based on the 1984-90 experience (table 2B, page 39).

ii) Proportions electing an immediate reduced annuity

Contributors retiring with less than 10 years of service are assumed to receive either a return of contributions or a cash termination allowance. Contributors retiring with 10 or more years of service but less than 20 are assumed to receive either

- a return of contributions, or
- an immediate reduced annuity offered under *compulsory retirement to promote economy and efficiency* (Note 12, page 34).

Separate rates were derived for officers and other ranks. A three-year calendar select period was used for other ranks to take account of the FRP. The same rate, though varying by age, was applied in each of the three years. For officers and other ranks' ultimate assumptions, the previous rates were retained; they are based on the 1984-90 experience where all types of annuity election (e.g., deferred annuity and immediate reduced annuity) were grouped under the immediate reduced annuity option. The other ranks' select rates are based on the 1991-93 experience which fully reflects the effect of the FRP during its term (table 2C, page 40).

(c) Rates of retirement (with 20 or more years of service, other than disability)

i) Rates of retirement

Separate rates were derived for officers and other ranks. A three-year period was used for other ranks to take account of the FRP. The same rate, though varying by age, was applied for each of the three years. The ultimate rates for other ranks were retained from the previous valuation and are based on the graduated 1984-90 experience. The rates for officers and for other ranks' select period were derived by imputing 50% credibility to the previous assumptions and 50% to the 1991-93 experience (table 2D, page 41).

ii) Percentage reduction in immediate annuity

Contributors retiring with 20 or more years of service are assumed to receive either

- an immediate unreduced annuity, or
- an immediate reduced annuity offered under *retirement for reasons other than compulsory retirement to promote economy and efficiency* (Note 12, page 34).

Separate reduction rates were derived for officers and other ranks. A three-year select period was used for other ranks to take account of the FRP. The same rate, though varying by age, was applied for each of the three years. The rates were retained from the previous valuation and for both groups, ultimate rates were based on the 1984-90 experience (table 2E, page 42).

(d) Rates of retirement because of disability

Separate rates were derived for three groups: male officers and other ranks, and females. The assumptions used in the previous valuation report were retained even though the 1991-93 experience was approximately 50% higher than expected. This sudden increase is believed to be related to the effect of the downsizing of the Forces' membership. Rates in the previous valuation were based on the 1984-87 graduated experience but giving only 50% credibility to that experience in the case of male officers and all female contributors and 50% credibility to the rates used in the 31 December 1983 valuation report (table 2F, page 43).

(e) Mortality rates and longevity improvement factors

The mortality rates deemed to apply in 1994 were set equal to the 1991 base year mortality rates used in the previous valuation, reduced to take account of three years of improvement in longevity. Distinct rates apply for males and females (table 2G, page 43).

Mortality rates after 1994 were adjusted by assuming constant annual percentage decreases of such rates, varying by age. The longevity improvement factors were used in conjunction with the 1994 mortality rates for current contributors, former contributors and surviving spouses. The projection scale was derived by giving 50% credibility to a modified version of Projection Scale H, and 50% credibility to the Projection Scale AA, both scales as published by the Society of Actuaries. Sample longevity improvement factors are shown in table 2K, page 47.

(f) Assumptions in respect of married contributors

i) Proportions of current contributors married at death

Separate rates were assumed for males and females. For males, the rates were set equal to the graduated 1984-90 experience of current and former contributors. For females, the rates assumed are those of the valuation of the pension plan established under the *Royal Canadian Mounted Police Superannuation Act* as at 31 December 1992 (table 2L, page 48).

ii) Number of children at death of contributor

The corresponding assumptions are those of the valuation of the pension plan established under the *Public Service Superannuation Act* as at 31 December 1989. See table 2M, page 49, for sample assumptions of the number of children at death of the contributor.

iii) Average age of spouse at death of contributor

The average age is assumed to vary by sex. On the basis of experience studies, for both males and females, the rates used are those assumed for the valuation of the pension plan established under the *Royal Canadian Mounted Police Superannuation Act* as at 31 December 1992 (table 2L, page 48).

iv) Average age of children at death of contributor

The corresponding assumptions are those of the valuation of the pension plan established under the *Public Service Superannuation Act* as at 31 December 1989. See table 2M, page 49, for sample values of the assumed average age of children at death of the contributor.

2. Assumptions in Respect of Former Contributors**(a) Mortality rates**

In respect of former contributors (terminations for reasons other than disability), mortality rates were derived separately for three groups: male officers and other ranks, and females. On the basis of experience studies of male mortality, the rates assumed in the previous valuation were maintained but projected three years to take account of longevity improvements from 1991 to the base year 1994. The GAM 1994 table for female mortality was used for the 1994 base year. "Other than disability" includes individuals who are medically unfit to perform their duties and not otherwise advantageously employable in the Canadian Forces (table 2H, page 44).

In respect of former contributors (terminations by reason of disability), mortality rates were derived separately for four groups: male and female officers, male and female other ranks. The previous valuation assumptions were based on rated Canada Life Tables for 1985-87 projected five years for longevity improvement to the base year 1991. On the basis of experience studies, rates for male Officers and both female groups are the same as those used in the previous valuation, but projected three years for longevity improvement from 1991 to the base year 1994. Rates for male Other ranks were adjusted by giving 50% credibility the previous valuation assumption and 50% credibility to the 1991-93 experience (table 2I, page 45).

Mortality rates after 1994 were adjusted using the same projection factors as for current contributors.

(b) Other assumptions

i) Integration with the C/QPP

As described in Note 9, page 33, the basic annuity of a former contributor reaching age 65 or becoming entitled to a disability pension under the C/QPP is reduced by virtue of the prescribed integration of the Canadian Forces Superannuation Plan with the C/QPP.

To take account of the C/QPP offset, the projected six-year average salary for each age/service/sex/rank (officers or other ranks) cell was compared, and adjusted by age and sex in accordance with the projected three-year average CPP maximum pensionable earnings.

ii) Miscellaneous

In respect of former contributors, the following assumptions used for current contributors also apply:

- longevity improvement factors;
- proportions married at death;
- average age of spouse at death of contributor;
- number of children at death of contributor;
- average age of children at death of contributor.

3. Assumptions for Survivors

(a) Mortality rates

Distinct mortality rates were assumed for males and females. For males, the assumed rates are those of the Canada Life Tables for 1985-87, with a one-year age setback. For females, the rates used for the previous valuation were retained (they were based on the 1981-87 experience). The above male and female rates, which were then projected for longevity improvement to the base year 1991, were projected for an additional three years for longevity improvement to the base year 1994 (table 2J, page 46).

Mortality rates after 1994 were adjusted as described in paragraph 1(e) above for current contributors.

(b) Proportions of students still eligible for allowances

The proportions of the previous valuation were maintained. These were taken from the actuarial report as at 31 December 1989 on the pension plan established under the *Public Service Superannuation Act* (table 2N, page 49).

V- Valuation Results

A- Balance Sheet

The following balance sheet was prepared using the valuation methods described in section III, the assumptions described in section IV, and the experience data summarized in Section II.

Assets	(\$ millions)
Balance in CF Superannuation Account	31,412.4
Actuarial present value of future contributions and government credits* in respect of prior service	73.9
Total assets as at 31 December 1993	31,486.3
Liabilities	(\$ millions)
For benefits to and in respect of current contributors	8,068.0
For benefits to and in respect of former contributors	
• Retirement pensioners	13,586.0
• Disability pensioners	456.5
• Surviving spouses	1,199.1
• Surviving children	20.8
	15,262.4
Outstanding terminations	4.5
Total liabilities as at 31 December 1993	23,334.9
Surplus	(\$ millions)
as at 31 December 1993	8,151.4

* Government credits in each future year are assumed to be a multiple of future contributions by members, the multiple being assumed constant at its 1996 level, as shown in the cost certificate (section B thereafter).

B- Cost Certificate

The normal costs and the assets and liabilities of the plan were computed using the experience data summarized in section II, the valuation methods described in section III and the assumptions described in section IV. Emerging experience, differing from the corresponding assumptions, will result in gains or losses which will be revealed in future reports.

1. Normal Costs

Normal costs were computed on a basis net of the C/QPP offsets. The normal costs are expressed below as a percentage of the pensionable payroll which corresponds to the sum of all salaries paid during the year to current contributors with no more than 35 years of pensionable service.

Year	Normal Cost (%)	Employees' portion (%)	Government's portion (%)
1994	17.79	5.58	12.21
1995	19.06	5.51	13.55
1996	20.45	5.43	15.02

The above table shows increases for 1995 and 1996 in the aggregate projected normal cost as well as in the government's portion of that cost. This gradual increase in the normal cost mainly reflects a partial transition from the current to the ultimate economic assumptions. On the other hand, the employees' portion of the normal cost decreases for 1995 and 1996. This results from the integration of the CFSA contributions with the C/QPP (section B-1(a), page 26). The C/QPP employees' contributions offset corresponds to their actual amount of contributions to C/QPP. As the C/QPP contribution rate has started to increase in 1987 and is expected to continue to increase each year until about 2030, the employees' portion of the CFSA normal cost decreases yearly as the C/QPP offset increases.

2. Assets and Liabilities

The total liabilities for the plan are estimated at \$23.3 billion as at 31 December 1993. The assets of \$31.5 billion as at the same date therefore exceed the liabilities, corresponding to a surplus of \$8.2 billion.

C- Sensitivity of Estimates to Variations in Economic Assumptions

The supplementary results shown below have been prepared to provide an indication of the degree to which the results shown in the Cost Certificate depend on some of its basic assumptions. The differences between the results below and those shown in the Cost Certificate above can also serve as the basis for deriving a reasonable approximation of the projected effect of changes in the value specified by one or more of the key assumptions. However, one must bear in mind that any such calculation does not take into account either the extent to which the effect of changing a given assumption may not be strictly proportional, or the interaction effect that may come into play when more than one assumption is changed.

1. Constant, as opposed to streamed, economic assumptions

- The 1994 normal cost of 17.79% of pensionable payroll takes into account, among other things, the fact that the projected fund yields are temporarily higher after the valuation date than the ultimate level of 6% assumed for the rest (2018 and later years) of the projection period. If the projected fund yields and other economic factors were deemed constant at their otherwise assumed ultimate value (i.e., 6% for interest, 4% for annual increase in average salaries, and 3% for inflation) throughout the projection period, the resulting normal cost for 1994 would increase from 17.78% to 28.80% of pensionable payroll.
- On the other hand, an increase of one percentage point to 7% in the constant real rate of interest, as used for purposes of the above paragraph, would increase the 1994 normal cost from 17.79% to only 22.40% of pensionable payroll.

2. Productivity (real rate of increase in average salaries)

If the productivity gains assumed for 1994 were reduced from 1% to 0.5% from 2001 onward, then the 1994 normal cost would decrease by 0.39% of pensionable payroll from 17.79% to 17.40%.

3. Interest rate

The 1994 normal cost of 17.79% is based on a deemed investment policy of buying and holding 20-year government bonds. If the investment policy were changed in favor of a diversified portfolio including a significant equity component, it would then be appropriate to assume higher real rates of return. As a measure of sensitivity, an increment of one percentage point in each of the projected fund yields would decrease the 1994 normal cost by 3.69% of pensionable payroll from 17.79% to 14.10%.

D- Reconciliation of Surplus(Deficit) and Normal Cost

This section describes the various factors reconciling the overall change in the difference between assets and liabilities, and in the normal cost, between the last valuation date (31 December 1990) and this one (31 December 1993). Figures in brackets in the table below indicate negative amounts. Main items of this table are explained in the following pages.

	<u>Surplus/(Deficit)</u> <u>(\$ millions)</u>	<u>Normal Cost as a %</u> <u>of pensionable payroll</u>
At 31 December 1990	2,846.2	19.92
Asset corrections	(701.7)	-
Data corrections	(67.5)	(0.04)
Methodology refinement	17.9	(0.20)
Interest on revised starting surplus	683.3	-
Expected normal cost change from 1990 to 1993	-	2.83
Indexation payments charged to the CRF	125.2	-
Experience gains and losses		
Employee contribution differences	32.3	-
Employer cost/contribution differences	(66.4)	-
Interest gains	1,185.6	-
Annuity payments differences	(5.4)	-
Return of contributions differences	45.6	-
Transfer to the CFSA account	10.5	-
Economic salary/YMPE increases	250.9	-
Pension indexation	103.2	-
Demographic	(342.7)	-
Miscellaneous	86.9	-
Change to new population	-	(0.06)
Change from age nearest to age last basis	(3.1)	0.01
Removal of margin	2,747.7	(2.97)
Revision of valuation assumptions		
General salary increases	783.9	(1.76)
Pension indexation	481.0	(0.03)
Interest rates	319.0	(0.43)
Demographic	19.9	0.08
Revision of valuation methodology		
Change from closed-group to open-group approach	(400.9)	0.44
At 31 December 1993	8,151.4	17.79

Explanations of the above reconciliation**1. Asset Corrections**

The assets shown in the previous valuation erroneously included an accrued quarterly interest credit of \$614.5 million as well as a government's accrued quarterly cost of \$87.2 million.

2. Interest on the Revised Starting Surplus

The surplus was increased by \$683.3 million as a result of accrued interest payments on the initial surplus revised for the assets corrections, the data corrections and the refinement in the projection methodology. The amount of expected interest for the three years to 31 December 1993 was computed using the interest rate assumed for the 1990 valuation report.

3. Indexation Payments Charged to the Consolidated Revenue Fund

Supplementary retirement (indexation) benefits (SRB) payable in excess of accumulated contributions (including interest) by and in respect of members made to the SRB Account were charged directly to the Consolidated Revenue Fund until 31 March 1991. Because these benefits were not paid from the SRB Account, the pension plan gained \$125.2 million, and the surplus increased by the same amount.

4. Expected Normal Cost Change

The gradual increase in the normal cost from 1991 to 1994 as under the previous report mainly reflects a partial transition from the current to the ultimate economic assumptions and, to a minor degree, the expected changes in the demographic characteristics of the active contributors.

5. Employer cost/contributions differences

A decrease in the surplus of \$66.4 million resulted from the actual government contributions in the 1991-1993 period having been less than those corresponding to the government portion of the normal cost shown in the previous report cost certificate. The amount of \$66.4 million includes interest accumulation on that difference.

6. Salary and YMPE increases

An increase in surplus of \$250.9 million was mainly the result of the government's salary freeze for 1993 and partially of an increase in the 1992 YMPE greater than expected. This item does not encompass the seniority and promotional salary increases which are covered in the miscellaneous item.

7. Interest gains

During the intervaluation period, interest credited to the CFS Account was in excess of that projected in the previous report. This excess accounted for an increase in surplus of \$1,185.6 million and results mainly from the margin against adverse fluctuations used in the previous report.

8. Pension Indexation

The pension indexation was largely as expected except for the actual 1 January 1993 increase being only 2.1% instead of 2.8%. Consequently, the surplus has risen by \$103.2 million.

9. Removal of the margin for adverse fluctuations

The removal of the one percentage point margin from the relevant fund yield resulted in an increase in surplus of \$2,747.7 million and a reduction in the normal cost of 2.97% of pensionable payroll.

10. Demographic assumptions

A decrease in surplus of \$342.7 million resulted from the actual demographic experience being different from that assumed in the previous report. The number of members expected to terminate with a return of contributions was less than anticipated and by itself caused the surplus to decrease by \$200.7 million.

11. Revision of economic assumptions

The assumed salary increases for years after 1994 are now lower than in the previous valuation. No salary increases at all are assumed from 1994 to 1996 inclusive which caused the surplus to rise by \$783.9 million and the normal cost to fall by 1.76% of pensionable payroll.

The revised assumption for pension indexing is lower than the previous assumption for the first six years of the projection period and caused the surplus to increase by \$481.0 million and the normal cost to decrease by 0.03% of pensionable payroll.

The revised valuation interest assumption is, on average from 2000 to 2018, 0.2% per annum greater than the projected fund yields of the previous valuation. For years before 2000, the maximum and minimum differences from the previous valuation fund yield are respectively -0.2% and 0.1% per annum. The overall effect is an increase of \$319.0 million in surplus and a decrease in the normal cost of 0.43% of pensionable payroll.

12. Revision of valuation methodology

The change in methodology for the projection of average fund yields, from a closed-group to an open-group basis, produces higher liabilities and normal costs as it produces lower values for the interest rates involved in the calculation of the present values of benefits. This change thus increases the normal cost by 0.44% and the liabilities by \$400.9 million.

VI- Conclusions

A- Surplus

In comparison with the previous report, the financial results of this report rest, among other things, on the removal of the explicit margin against adverse fluctuations. This change entails a sizeable reduction in the total liabilities for the plan, which now finds itself as at 31 December 1993 with a large surplus. Considering the unusual increase in the surplus since the last valuation and my opinion that

- the liabilities computed in respect of all benefits accrued by 31 December 1993 include a reasonable implicit margin against adverse fluctuations through a safely assumed ultimate real rate of interest, and
- the normal costs computed for 1994, 1995 and 1996 make appropriate provision for the full funding of benefits projected to accrue during those years,

it would be appropriate to take measures now to amortize the CFSA surplus over time.

B- Actuarial Standards

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

- the valuation data on which it is based are sufficient and reliable;
- the assumptions that have been used are, in aggregate, appropriate;
- the methods employed are appropriate;
- the value of the plan assets would be greater than the liabilities if the plan were to be wound up at the valuation date;
- this report has been prepared, and my opinion given, in accordance with accepted actuarial practice, and particularly with the Canadian Institute of Actuaries standard of practice for valuation of pension plans.



Bernard Dussault, Bsc., F.S.A., F.C.I.A.
Chief Actuary

Ottawa, Canada
5 October 1995

APPENDIX 1

**Summary of Plan Provisions,
in force as at 31 December 1993, of the pension plan
established under the *Canadian Forces Superannuation Act***

In case of discrepancy between the provisions of the Act and this summary, the Act prevails. The explanatory notes referred to hereafter are given in paragraph D of this Appendix.

A- Membership

Membership in the plan is compulsory for all active members of the Canadian Forces.

B- Credits and Charges to the Canadian Forces Superannuation (CFS) Account

1. Contributions

All members' and government's contributions are credited to the CFS Account.

(a) Members

Until they complete 35 years of pensionable service (*Note 1*), active members make required contributions to the Account equal to 7.5% of pay (*Note 2*) minus their contributions to the C/QPP; thereafter, they contribute 1% of pay. Members may elect to contribute in respect of periods of prior service.

(b) Credits by Government

The government credits the Account with amounts in respect of current and prior pensionable service. In addition, it makes special credits as required.

i) Current Service

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

ii) Prior Service

The government credits to the Account in respect of elected prior service are analogous to those described in respect of current service.

iii) Special Credits

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

2. Investment earnings

(a) Applicable investment rate

The interest rate applying to net cash flows (contributions minus benefits, as well as bond maturities) to the CFS Account corresponds to the average rate on outstanding Government of Canada bonds with 20 or more years to maturity.

(b) Allocation of investment earnings

Investment earnings are allocated every three months to the CFS Account on the basis of the actual average yield, for the corresponding period, on the combined PSS, CFS and RCMP Accounts.

3. Payment of Benefits

All benefit payments pursuant to the plan are charged to the CFS Account.

C- Summary Description of Benefits

1. Regular Members* who are members of the regular force

Type of termination	Service in the regular force (Note 3)	Benefit
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) (Note 4)	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 (Note 11)
	20 years or more	See "Retirement for other reasons"
Retirement during an indefinite period of service after having completed an intermediate engagement and prior to reaching retirement age, for reasons other than disability or misconduct, or to promote economy or efficiency	Any length	Immediate annuity to which contributor was entitled upon completion of intermediate engagement increased to such extent as prescribed by regulation**

* Pursuant to the CFSA, regular members include persons no longer required to contribute to the CFS Account.

** The CFSA 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 CFS Regulations (Note 10) always produces less than the maximum.

Type of termination	Service in the regular force	Benefit
Retirement on completion of intermediate engagement (a contributor who has not reached retirement age and is not serving for an indefinite period of service) <i>(Note 5)</i>	20 years or more (by definition in CFS Regulations)	Immediate annuity
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 option of contributor (1) return of contributions; or (2) deferred annuity; or (3) with consent of the Minister of National Defence, an immediate reduced annuity <i>(Note 12)</i>
	20 years or more	Immediate annuity
Compulsory retirement because of misconduct, as defined in the CFSA	Less than 10 years	Return of contributions
	10 years or more	Return of contributions or, with 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 or her retirement if <i>retired for other reasons</i> <i>(Note 13)</i>

* Any condition rendering a member of the regular force mentally or physically unfit to perform his or her duties.

Type of termination	Service in the regular force	Benefit
Retirement for reasons other than those previously mentioned	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 annuity
	25 years or more	Officer contributor - immediate reduced annuity; Other than officer contributor - immediate annuity

2. Benefits in Case of Death of an Active Contributor

Status at death	Service in the regular force	Benefit
Leaving no spouse or eligible children under 25 (<i>Note 14</i>)	Less than 10 years	Return of contributions or cash termination allowance, whichever is greater
	10 years or more	Five times the annual amount of retirement pension to which the contributor would have been entitled at the date of death
Leaving spouse and/or eligible children under 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 credited pensionable service, whichever is the greater
	5 years or more	Annual allowances (<i>Notes 14, 15 and 16</i>)

3. Benefits in Case of Death of a Pensioner

Status at death	Benefit
Leaving no spouse or eligible children under 25	Minimum benefit (<i>Note 12</i>)
Leaving spouse and/or eligible children under 25	Annual allowances (<i>Note 13</i>)

4. Indexation

The plan provides annual benefit adjustments related to increases in the cost of living for pensioners and their surviving spouses and children satisfying at least one of the following criteria:

- retirement pensioner at least 60 years old;
- retirement pensioner at least 55 years old if the sum of years of pensionable service and age is at least 85 years;
- disability pensioner; or
- survivor.

The Benefit Index in respect of a calendar year is the Benefit Index for the preceding year multiplied by the ratio of the average of the Consumer Price Index for the twelve-month period ending on 30 September of the preceding year to the average for the corresponding period one year earlier.

The benefit adjustment is equal to the initial amount of the annuity or annual allowance to which the person is entitled multiplied by the excess, over one, of the ratio of the Benefit Index for the year of payment to the Benefit Index for the deemed date on which the person to whom or in respect of whose service the pension is payable ceased to be employed. If the actual date of cessation of employment is after 21 June 1982, then the deemed date is the first day of the next calendar month; otherwise, it is the first day of January immediately preceding the actual date of termination of employment.

D- Explanatory Notes

Note 1: Pensionable Service

The amount of any annuity, cash termination allowance or annual allowance to which a contributor or the spouse or children of a contributor may become entitled under the CFSA depends upon the number of years of credited *pensionable service* at the date the contributor ceases to be a member of the regular force.

In general, *pensionable service* includes any period of service in the regular force for which a contributor has contributed or elected to contribute, if eligible to do so, and such other types of service for which the contributor has elected to make the required special contributions to the CFS Account.

Note 2: Pay

Pay, as it applies to a contributor under this plan and as it is used throughout this report, means salary at the annual rate 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 3: Service in the regular force

For most purposes of the CFSA, *service in the regular force* 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 the CFSA which he or she did not elect to repay on subsequent enrolment.

Note 4: Short Engagement

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. The regulations prescribe a period of nine years for a short engagement in respect of commissioned officers.

Note 5: Intermediate Engagement

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 of 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 means ceasing to be a member of the regular force at or after the prescribed retirement age for any reason other than disability, misconduct or death.

A retirement age of 55 applies for all members serving under the career programs adopted in 1975.

For those members enrolled prior to the introduction of the 1975 programs and not subject to their provisions, the previous rules for retirement age continue to apply. These rules, effective 1 February 1968, applicable to contributors who enrolled on or after that date, or to those serving on that date who elected to be subject to such rules, are shown below.

Pre-1975 Retirement Age

	General Service	Specialist Service	Commissioned from Ranks
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
Others Ranks above Corporal	50		
Corporal and below	44		

For those contributors serving on 1 February 1968 who did not elect to have these rules apply to them, the retirement age is as in the table above but varies slightly by rank and by branch of the Forces.

For those contributors to whom the above rules would normally apply, the regulations also prescribe, for purposes of compulsory retirement under certain conditions or voluntary retirement, that the retirement age will be deemed to have been reached only 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
Colonel and above	30
Officers below Colonel	28
Other ranks above Corporal	30
Corporal and below	25

Note 7: Return of Contributions

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

Note 8: Cash Termination Allowance

Cash termination allowance means the payment of an amount equal to one month's pay at the rate authorized to be paid to the contributor at date of termination multiplied by the number of years of pensionable service to the credit of the contributor minus the total reduction in contributions to the CFS Account as a result of integration of the plan with the C/QPP.

Note 9: Immediate Annuity

Immediate annuity means an annuity that becomes payable immediately upon retirement. The annual amount of *basic annuity* is equal to 2% multiplied by the number of years of pensionable service up to a maximum of 35 and by the highest value resulting from averaging any series of six consecutive annual pensionable earnings. If the number of years of service is less than six, earnings are averaged over the total period of pensionable service. Any *basic* (before the indexation adjustments described previously in paragraph C4 on page 30) annuity or annual allowance is normally payable in equal monthly instalments at the end of each month until the month in which the survivor dies or ceases to be entitled thereto.

When a contributor entitled to an annuity or annual allowance reaches age 65 or has become entitled to a disability pension under the terms of the C/QPP, the annuity or annual allowance is reduced by an amount equal to 0.7% multiplied by the number of years of pensionable service after 1965 or after attaining age 18, whichever is later, that are counted in the calculation of the *basic annuity*, and by the six-year average salary as defined in the preceding paragraph but limited to the YMPE averaged over the three-year period ending with the year during which the annuity commences.

When a contributor entitled to an annuity or annual allowance becomes disabled before reaching age 60, the contributor ceases to be entitled to that deferred annuity or annual allowance and becomes entitled to an immediate annuity adjusted in accordance with regulations to take into account the amount of any annual allowance which the contributor may have received prior to becoming disabled.

When a contributor, being entitled while still under age 60 to an immediate annuity in respect of a disability, recovers from that disability, the disability annuity payments are terminated and the contributor becomes entitled to a deferred annuity.

Note 10: Deferred Annuity

Deferred annuity means an annuity that becomes payable upon attainment of age 60. The annual amount of the annuity is computed as described in Note 9.

Note 11: Annuity Payable upon Retirement During an Indefinite Period of Service

For a contributor who has not reached retirement age and 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, misconduct, or to promote economy or efficiency, CFS Regulations prescribe an annuity that is equal to the greater of first, an immediate annuity based on the pensionable service to the date of completion of the intermediate engagement only and the six-year average annual pay at date of retirement and second, an immediate annuity based upon the total pensionable service to the date of retirement and the highest consecutive 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 an officer, the age at the date of retirement is less than the retirement age applicable to the contributor's rank; or
- (b) in the case of a contributor other than an officer, the age at the date of retirement is less than the retirement age applicable to the contributor's rank or the period of service in the regular force is less than 25 years, whichever is the lesser.

Note 12: Immediate Reduced Annuity

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

With the consent of the Minister of National Defence, a contributor who is required to retire to promote economy or efficiency and has between 10 and 20 years of service in the regular force may choose an immediate annuity reduced, until attainment of age 65 but not thereafter, by 5% for each full year not exceeding six by which

- (a) the period of service in the regular force is less than 20 years; or
- (b) the age of the contributor at the time of retirement is less than the retirement age applicable to the contributor's rank,

whichever is the lesser.

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

- (a) as an officer having served in the regular force for 20 years or more, to an immediate annuity reduced by 5% for each full year by which his or her age at the time of retirement is less than the retirement age applicable to his or her rank, or
- (b) as other than an officer having served in the regular force for 20 years or more but less than 25 years, to an immediate annuity reduced by 5% for each full year by which
 - (i) the period of service in the regular force is less than 25 years, or
 - (ii) the age at the time of retirement is less than the retirement age applicable to the contributor's rank,
 whichever is the lesser.

Note 13: Compulsory Retirement Because of Misconduct

In the case of *compulsory retirement because of misconduct*, the contributor is entitled to

- (a) a return of contributions, or
- (b) having served in the regular force 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 the contributor would have been entitled if the contributor had *retired for other reasons* (excluding disability, completion of short or intermediate engagement, misconduct and to promote economy and efficiency) at the same date. However, in no case shall the actuarial present value of any reduced benefit (based by Regulation on the Canadian Life Table (1941) 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 aged 18 or over but under 25, in full-time attendance at a school or university, having been in such attendance substantially without interruption since he or she reached age 18 or the contributor died, whichever occurred later.

Note 15: Annual Allowance for Survivors

Annual allowance to the surviving spouse of an active or former contributor entitled to receive an annuity or annual allowance means one-half of the annual amount of *basic annuity* computed as described in Note 9. This is termed the *basic allowance*.

The surviving spouse of a contributor or pensioner is entitled to the *basic allowance* except if:

- (a) the contributor dies within one year of marriage unless the Minister of National Defence is satisfied that the contributor's health at the time of the marriage justified an expectation of surviving for at least one year; or
- (b) the pensioner marries after age 60, unless after marriage the pensioner becomes an active contributor again; or
- (c) the pensioner is female and retired before 20 December 1975.

Annual allowance to each eligible child of a deceased contributor or a deceased former contributor means one-fifth of the *basic allowance*, subject to a reduction if there are more than four eligible children in the same family. The annuity otherwise payable to an eligible child is doubled if the child is an orphan. Allowances are not payable to children of a spouse who is not entitled to an allowance in case of death of a contributor within one year of marriage under circumstances stated previously. 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 regular force when the member was over 60 years of age, unless he or she became or continued to be a current contributor after attaining 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 CFSA 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:

- (a) if the contributor was not a member of the regular force upon or after 20 December 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;
- (b) if the contributor was a member of the regular force upon or after 20 December 1975, an amount similar to the above except that the return of contributions is taken as at least equal to five times the immediate annuity to which the contributor was or would have been entitled at the time of his or her death;
- (c) 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 C/QPP, the amount payable in (a) or (b) above cannot be less than the amount by which the cash termination allowance (see Note 8 above) exceeds the aggregate of all amounts already paid to those persons and to the contributor.

APPENDIX 2

Sample Demographic Assumptions

Table 2A

Assumed Annual Seniority and Promotional Salary Increases

Pensionable Service*	Officers (%)	Other Ranks (%)	Pensionable Service*	Officers (%)	Other Ranks (%)
1	11.1	18.8	21	1.7	1.7
2	16.5	17.9	22	1.7	1.5
3	18.6	16.8	23	1.5	1.6
4	19.7	13.8	24	1.5	1.5
5	16.8	8.6	25	1.5	1.6
6	11.9	4.0	26	1.3	1.4
7	8.6	1.9	27	1.2	1.3
8	6.3	1.5	28	1.2	1.3
9	5.4	1.4	29	1.2	1.4
10	4.8	1.4	30	1.1	1.3
11	4.2	1.3	31	0.8	1.1
12	3.9	1.2	32	0.8	0.9
13	3.6	1.5	33	0.8	0.9
14	2.9	1.5	34	0.8	0.8
15	2.4	1.5	35	0.8	0.4
16	2.1	1.6	36	0.4	0.0
17	2.1	1.7	37	0.2	0.0
18	1.9	1.6	38	0.3	0.0
19	1.9	1.6	39	0.0	0.0
20	1.7	1.6	40 and over	0.0	0.0

* Expressed in completed years.

Table 2B

**Assumed Rates of Retirement/Withdrawal for Current Contributors
With Less Than 20 Years of Service**

Age Last Birthday	Other Ranks					
	Officers		Male		Female	
	Male	Female	Select*	Ultimate**	Select*	Ultimate**
15	0.250	0.257	0.152	0.088	0.162	0.115
20	0.062	0.079	0.075	0.086	0.091	0.093
25	0.051	0.062	0.051	0.059	0.068	0.072
30	0.040	0.083	0.033	0.030	0.051	0.054
35	0.017	0.047	0.028	0.012	0.038	0.029
40	0.012	0.023	0.023	0.005	0.026	0.014
45	0.029	0.030	0.020	0.020	0.031	0.050
50	0.090	0.090	0.032	0.020	0.050	0.050
55	0.250	0.250	0.083	0.250	0.250	0.250
59	0.250	0.250	0.083	0.250	0.250	0.250

* Applicable only from 1994 to 1996 inclusive.

** Applicable after 1996.

Table 2C

**Assumed Proportions of Retiring Contributors
(With 10 to 19 Years of Service)
Electing an Immediate Reduced Annuity**

Age Last Birthday	Officers	Other Ranks	
		Select*	Ultimate**
24 and under	0.000	0.000	0.000
25	0.000	0.070	0.000
26	0.003	0.140	0.008
27	0.008	0.160	0.015
28	0.010	0.187	0.016
29	0.013	0.219	0.016
30	0.016	0.258	0.017
31	0.019	0.305	0.018
32	0.022	0.363	0.021
33	0.025	0.428	0.025
34	0.029	0.495	0.035
35	0.033	0.559	0.052
36	0.048	0.617	0.079
37	0.085	0.668	0.121
38	0.143	0.715	0.181
39	0.209	0.758	0.264
40	0.269	0.799	0.374
41	0.321	0.838	0.518
42	0.363	0.875	0.696
43	0.400	0.910	0.896
44	0.438	1.000	1.000
45	0.488	1.000	1.000
46	0.559	1.000	1.000
47	0.657	1.000	1.000
48	0.783	1.000	1.000
49	0.926	1.000	1.000
50 to 59	1.000	1.000	1.000

* Applicable from 1994 to 1996 inclusive.

** Applicable after 1996.

Table 2D

**Assumed Rates of Retirement for Current Contributors
With 20 or More Years of Service**

Age Last Birthday	Officers	Other Ranks	
		Select*	Ultimate**
33 and under	N/A	N/A	N/A
34	0.108	0.120	0.075
35	0.078	0.120	0.075
36	0.059	0.117	0.075
37	0.054	0.111	0.075
38	0.058	0.098	0.075
39	0.067	0.094	0.075
40	0.064	0.094	0.075
41	0.050	0.102	0.083
42	0.045	0.114	0.103
43	0.047	0.133	0.115
44	0.056	0.122	0.108
45	0.074	0.116	0.100
46	0.086	0.126	0.105
47	0.092	0.140	0.121
48	0.097	0.167	0.158
49	0.105	0.225	0.238
50	0.112	0.235	0.250
51	0.119	0.223	0.210
52	0.149	0.227	0.210
53	0.260	0.325	0.287
54	0.450	0.574	0.607
55	0.622	0.826	0.875
56	0.700	0.937	0.900
57 to 59	0.700	0.950	0.900

* Applicable from 1994 to 1996 inclusive.

** Applicable after 1996.

Table 2E

**Assumed Reduction Factors Applying to
Immediate Annuities for Retiring Contributors
(With 20 or More Years of Service)**

Age Last Birthday	Officers	Other Ranks	
		Select*	Ultimate**
33 and under	N/A	N/A	N/A
34	0.90	0.84	0.75
35	0.90	0.84	0.75
36	0.91	0.87	0.78
37	0.93	0.90	0.83
38	0.93	0.92	0.88
39	0.93	0.94	0.92
40	0.93	0.96	0.94
41	0.93	0.98	0.96
42	0.93	1.00	0.98
43	0.94	1.00	0.99
44	0.96	1.00	1.00
45	0.98	1.00	1.00
46	0.99	1.00	1.00
47	0.99	1.00	1.00
48	1.00	1.00	1.00
49 to 59	1.00	1.00	1.00

* Applicable from 1994 to 1996 inclusive.

** Applicable after 1996.

Table 2F**Sample of Assumed Rates of Termination due to Disability***

Age Last Birthday	Male		Female
	Officers	Other Ranks	Officers / Other Ranks
20	0.0022	0.0068	0.0040
25	0.0017	0.0040	0.0040
30	0.0009	0.0022	0.0025
35	0.0007	0.0022	0.0027
40	0.0010	0.0041	0.0036
45	0.0012	0.0050	0.0051
50	0.0027	0.0087	0.0075
55	0.0042	0.0180	0.0108
59	0.0049	0.0223	0.0148

Table 2G**Sample of Assumed Mortality Rates Deemed Applicable in 1994
in Respect of Current Contributors**

Age Last Birthday	Males	Females
15	0.0006	0.0002
20	0.0007	0.0003
25	0.0008	0.0004
30	0.0007	0.0005
35	0.0008	0.0006
40	0.0011	0.0009
45	0.0018	0.0013
50	0.0028	0.0020
55	0.0059	0.0030
59	0.0070	0.0039

* Disability is assumed to be permanent with no recovery possible.

Table 2H

**Sample of Assumed Mortality Rates Deemed Applicable in 1994
in Respect of Retirement Pensioners**

Age Last Birthday	Male		Female
	Officers	Other Ranks	Officers / Other Ranks
20	0.0004	0.0004	0.0003
25	0.0004	0.0006	0.0003
30	0.0005	0.0009	0.0004
35	0.0007	0.0012	0.0005
40	0.0011	0.0021	0.0007
45	0.0018	0.0026	0.0010
50	0.0032	0.0045	0.0014
55	0.0052	0.0079	0.0023
60	0.0090	0.0127	0.0044
65	0.0150	0.0208	0.0086
70	0.0222	0.0344	0.0137
75	0.0400	0.0532	0.0227
80	0.0671	0.0770	0.0394
85	0.1050	0.1117	0.0677
90	0.1568	0.1650	0.1163
95	0.2293	0.2373	0.1862
100	0.3235	0.3301	0.2764
105	0.4957	0.4957	0.3836
109	1.0000	1.0000	1.0000

Table 2I

**Sample of Assumed Mortality Rates Deemed Applicable in 1994
in Respect of Disability Pensioners**

Age Last Birthday	Male		Female	
	Officers	Other Ranks	Officers	Other Ranks
15	0.0009	0.0020	0.0004	0.0005
20	0.0014	0.0020	0.0004	0.0005
25	0.0014	0.0020	0.0004	0.0006
30	0.0014	0.0029	0.0005	0.0007
35	0.0015	0.0048	0.0007	0.0009
40	0.0021	0.0063	0.0011	0.0014
45	0.0032	0.0077	0.0019	0.0024
50	0.0055	0.0103	0.0032	0.0041
55	0.0094	0.0146	0.0050	0.0064
60	0.0152	0.0220	0.0078	0.0099
65	0.0243	0.0331	0.0122	0.0155
70	0.0380	0.0476	0.0194	0.0247
75	0.0589	0.0653	0.0322	0.0409
80	0.0906	0.0903	0.0541	0.0688
85	0.1395	0.1353	0.0936	0.1192
90	0.2106	0.2173	0.1589	0.2022
95	0.3131	0.3606	0.2595	0.3303
100	0.4114	0.5999	0.3728	0.4745
105	0.9378	1.0000	0.9321	1.0000
109	1.0000	1.0000	1.0000	1.0000

Table 2J**Sample of Assumed Mortality Rates Deemed Applicable in 1994
in Respect of Survivors**

<u>Age Last Birthday</u>	<u>Males</u>	<u>Females</u>
15	0.0009	0.0003
20	0.0015	0.0005
25	0.0015	0.0005
30	0.0013	0.0006
35	0.0015	0.0008
40	0.0022	0.0013
45	0.0036	0.0020
50	0.0061	0.0033
55	0.0099	0.0052
60	0.0158	0.0079
65	0.0249	0.0123
70	0.0380	0.0194
75	0.0577	0.0314
80	0.0874	0.0529
85	0.1299	0.0885
90	0.1880	0.1421
95	0.2217	0.1717
100	0.7428	0.7240
105	1.0000	1.0000

Table 2K**Sample of Assumed Improvements in Longevity After 1994**

Age Last Birthday	Annual % Reduction in 1994 Assumed Mortality Rates	
	Males	Females
15	1.05	1.05
20	1.00	1.05
25	0.55	0.95
30	0.50	0.88
35	0.63	1.18
40	0.90	1.63
45	1.40	1.68
50	1.65	1.60
55	1.60	1.15
60	1.45	1.00
65	1.35	1.00
70	1.38	1.00
75	1.33	1.13
80	1.10	1.08
85	0.80	0.83
90	0.48	0.50
95	0.10	0.20
100	0.00	0.00
105	0.00	0.00
109	0.00	0.00

Table 2L

**Assumed Proportions of Current and Former Contributors Married at Death
and
Assumed Average Age Difference Between Spouses**

Age* of deceased Contributor	Sex of Deceased Contributor			
	Male		Female	
	Proportion Married at Death	Age Difference Between Spouses**	Proportion Married at Death	Age Difference Between Spouses**
20	0.31	0	0.14	1
25	0.61	0	0.35	1
30	0.79	(1)	0.48	2
35	0.89	(1)	0.52	2
40	0.92	(2)	0.52	2
45	0.89	(2)	0.52	2
50	0.87	(2)	0.51	3
55	0.85	(2)	0.50	3
60	0.84	(2)	0.47	3
65	0.82	(2)	0.42	3
70	0.78	(3)	0.35	3
75	0.72	(4)	0.28	2
80	0.61	(5)	0.20	2
85	0.41	(6)	0.12	2
90	0.33	(9)	0.05	1
95	0.19	(10)	0.02	(1)
100	0.07	(10)	0.00	-

* Expressed in completed years calculated at the beginning of the calendar year.

** Age of widow(er) less age of member, both at the beginning of the calendar year.

Table 2M**Sample of Assumed Average Number and Average Age of Children at Death of Contributor**

Age* of Deceased Contributor	Average Number of Children		Average Age* of Children	
	Male Contributors	Female Contributors	Male Contributors	Female Contributors
25	0.522	0.323	2	1
30	0.901	0.575	5	5
35	1.177	0.763	8	10
40	1.298	0.810	11	13
45	1.049	0.636	14	16
50	0.679	0.346	16	17
55	0.397	0.130	17	18
60	0.182	0.029	18	19
65	0.064	0.007	19	21
70	0.022	0.005	21	23
75	0.009	0.000	23	n/a
80	0.000	0.000	n/a	n/a

Table 2N**Assumed Proportions of Children Remaining Eligible (on Account of School Attendance) for Allowances Throughout the Following Year**

Age*	Proportion
18	0.68
19	0.78
20	0.80
21	0.76
22	0.71
23	0.68
24	0.58

* Expressed in completed years calculated at the beginning of the calendar year.

APPENDIX 3

Summaries of Data

Reconciliation of Membership

The data for this valuation were supplied by the Department of National Defence on computer magnetic tapes. The following tables derived from those tapes show pertinent statistics related to contributors to the Account (members and former members of the regular force*) and survivors eligible for allowances during the intervaluation period from 1 January 1991 to 31 December 1993.

-
- * Regular force means the regular force of the Canadian Forces and includes
- ▶ the forces known before 1 February 1968 as the Regular Forces of the Canadian Forces; and
 - ▶ the forces known before 1 February 1968 as the Royal Canadian Navy, the Canadian Army Active Force, the Permanent Active Militia, the Permanent Militia Corps, the permanent staff of the Militia, the Royal Canadian Air Force (Regular) and the permanent Active Air Force.

Table 3A

Reconciliation of Active Contributors

	Male			Female			Total
	Officers	Other Ranks	Total	Officers	Other Ranks	Total	
Contributors as at 31 December 1990	16,311	61,696	78,007	1,793	7,519	9,312	87,319
Data Corrections*	595	25	620	62	(7)	55	675
New entrants 1991 to 1993**	1,600	3,840	5,440	387	558	945	6,385
Terminations from 1991 to 1993							
Annuity benefits							
Death	(32)	(104)	(136)	0	(4)	(4)	(140)
Disabled	(40)	(697)	(737)	(4)	(60)	(64)	(801)
Other***	(1,540)	(5,649)	(7,189)	(61)	(207)	(268)	(7,457)
SubTotal	(1,612)	(6,450)	(8,062)	(65)	(271)	(336)	(8,398)
Lump sum benefit							
Death	(12)	(62)	(74)	(4)	(2)	(6)	(80)
Disabled	(45)	(330)	(375)	(19)	(62)	(81)	(456)
Other***	(1,362)	(6,092)	(7,454)	(326)	(1,144)	(1,470)	(8,924)
SubTotal	(1,419)	(6,484)	(7,903)	(349)	(1,208)	(1,557)	(9,460)
Contributors as at 31 December 1993	15,475	52,627	68,102	1,828	6,591	8,419	76,521

* On this line, contributors who had other rank status on 31 December 1990 and who attained officer status at some time during the 1991-93 period are shown as officers rather than other ranks.

** Excludes 996 contributors, entitled to a lump sum, who were released from the Forces during their year of entry.

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

Table 3B**Reconciliation of Pensioners**

	Male			Female			Total
	Officers	Other Ranks	Total	Officers	Other Ranks	Total	
Retirement Pensioners							
Entitled 31 December 1990	13,959	46,278	60,237	266	256	522	60,759
Data Corrections	(136)	(193)	(329)	(1)	(3)	(4)	(333)
New Entitlements 1991 to 1993	1,539	5,649	7,188	61	207	268	7,456
Terminations 1991 to 1993							
Deaths	(799)	(2,533)	(3,332)	(1)	(6)	(19)	(3,351)
Other*	(58)	(236)	(294)	0	(2)	(2)	(296)
Subtotal	(857)	(2,769)	(3,626)	(13)	(8)	(21)	(3,647)
Entitled 31 December 1993	14,505	48,965	63,470	313	452	765	64,235
Disability Pensioners							
Entitled 31 December 1990	398	5,925	6,323	21	59	80	6,403
Data Corrections	(1)	(5)	(6)	(1)	0	(1)	(7)
New Entitlements 1991 to 1993	40	697	737	4	60	64	801
Terminations 1991 to 1993							
Deaths	(33)	(464)	(497)	(1)	0	(1)	(498)
Other*	0	(13)	(13)	0	0	0	(13)
Subtotal	(33)	(477)	(510)	(1)	0	(1)	(511)
Entitled 31 December 1993	404	6,140	6,544	23	119	142	6,686

* Re-enrolments in the regular force and transfers to other superannuation plans excluding, however, 177 re-enrolments that were treated as being entitled to annuities because they were not included among the active records.

Table 3C**Reconciliation of Survivors**

	Widows	Widowers	Total	Children under 18	Students (18 to 24)	Total
Entitled 31 December 1990	13,298	13	13,311	709	404	1,113
Data Corrections	(186)	1	(185)	(4)	40	36
New Entitlements 1991 to	3,025	5	3,030	256	254	510
Reinstatements 1991 to 1993	19	0	19	-	-	0
Terminations 1991 to 1993	(884)	0	(884)	(359)	(254)	(613)
Entitled 31 December 1993	15,272	19	15,291	602	444	1,046

Table 3D

Male Officers as at 31 December 1993

**Number of Current Contributors
and
Average Current Pay**

Age Last Birthday	Completed Years of Pensionable Service								All Years of Service
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
15-19	503	-	-	-	-	-	-	-	503
	\$11,181	-	-	-	-	-	-	-	\$11,181
20-24	1,223	466	-	-	-	-	-	-	1,689
	\$18,835	\$32,459	-	-	-	-	-	-	\$22,594
25-29	647	1,652	544	-	-	-	-	-	2,843
	\$34,701	\$44,872	\$47,931	-	-	-	-	-	\$43,142
30-34	175	973	1,712	425	-	-	-	-	3,285
	\$38,766	\$50,165	\$53,016	\$55,866	-	-	-	-	\$51,781
35-39	44	170	526	1,324	377	-	-	-	2,441
	\$50,349	\$54,107	\$59,075	\$59,742	\$61,426	-	-	-	\$59,296
40-44	21	29	63	363	975	270	-	-	1,721
	\$51,645	\$57,665	\$59,771	\$63,391	\$62,832	\$65,759	-	-	\$63,073
45-49	16	17	26	85	222	1,016	348	-	1,730
	\$62,729	\$59,250	\$68,964	\$71,497	\$65,254	\$65,809	\$67,316	-	\$66,275
50-54	10	9	11	18	21	113	698	292	1,172
	\$59,142	\$68,237	\$63,117	\$68,971	\$72,513	\$68,413	\$67,932	\$66,740	\$67,662
55-59	4	1	0	2	6	3	22	52	90
	\$65,733	\$61,236	\$0	\$64,176	\$67,510	\$68,648	\$68,101	\$74,844	\$71,707
60-70	0	0	0	0	0	0	0	1	1
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$129,156	\$129,156
All Ages	2,643	3,317	2,882	2,217	1,601	1,402	1,068	345	15,475
	\$23,856	\$45,408	\$53,492	\$60,126	\$62,981	\$66,016	\$67,735	\$68,143	\$51,074

Average age last birthday: 34.7 years

Average completed years of pensionable service: 14.2 years

Table 3E

Male Other Ranks as at 31 December 1993

**Number of Current Contributors
and
Average Current Pay**

Age Last Birthday	Completed Years of Pensionable Service								All Years of Service
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
15-19	270	-	-	-	-	-	-	-	270
	\$17,458	-	-	-	-	-	-	-	\$17,458
20-24	5575	1266	-	-	-	-	-	-	6841
	\$26,974	\$34,366	-	-	-	-	-	-	\$28,342
25-29	2335	8502	1630	-	-	-	-	-	12467
	\$29,241	\$35,414	\$36,989	-	-	-	-	-	\$34,463
30-34	400	2792	9385	2226	-	-	-	-	14803
	\$29,844	\$35,930	\$37,556	\$39,113	-	-	-	-	\$37,275
35-39	46	134	1495	6226	1296	-	-	-	9197
	\$31,759	\$35,864	\$37,800	\$39,745	\$41,938	-	-	-	\$39,642
40-44	21	16	54	841	3034	796	-	-	4762
	\$31,129	\$35,944	\$37,814	\$39,472	\$42,782	\$44,742	-	-	\$42,394
45-49	13	4	10	22	297	2209	502	-	3057
	\$40,990	\$44,166	\$36,660	\$42,152	\$43,420	\$44,987	\$47,187	-	\$45,130
50-54	6	5	3	4	10	140	850	165	1183
	\$38,726	\$38,338	\$39,964	\$40,593	\$43,314	\$45,436	\$47,481	\$48,804	\$47,263
55-59	0	0	0	0	0	0	17	30	47
	\$0	\$0	\$0	\$0	\$0	\$0	\$45,944	\$47,978	\$47,242
60-70	0	0	0	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
All Ages	8666	12719	12577	9319	4637	3145	1369	195	52627
	\$27,486	\$35,432	\$37,513	\$39,576	\$42,588	\$44,945	\$47,354	\$48,677	\$36,913

Average age last birthday: 32.6 years

Average completed years of pensionable service: 12.5 years

Table 3F

Female Officers as at 31 December 1993

**Number of Current Contributors
and
Average Current Pay**

Age Last Birthday	Completed Years of Pensionable Service								All Years of Service
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
15-19	167	-	-	-	-	-	-	-	167
	\$11,215	-	-	-	-	-	-	-	\$11,215
20-24	255	85	-	-	-	-	-	-	340
	\$16,840	\$32,079	-	-	-	-	-	-	\$20,649
25-29	121	293	60	-	-	-	-	-	474
	\$37,806	\$44,669	\$47,307	-	-	-	-	-	\$43,251
30-34	32	147	153	18	-	-	-	-	350
	\$41,354	\$50,404	\$52,236	\$54,277	-	-	-	-	\$50,576
35-39	12	37	80	90	15	-	-	-	234
	\$43,840	\$55,287	\$55,451	\$54,497	\$60,002	-	-	-	\$54,755
40-44	6	8	24	70	39	1	-	-	148
	\$50,384	\$51,777	\$59,992	\$59,547	\$61,732	\$63,204	-	-	\$59,428
45-49	4	1	10	27	34	12	0	-	88
	\$58,620	\$50,304	\$62,048	\$57,526	\$62,199	\$60,441	\$0	-	\$60,211
50-54	0	2	0	4	8	5	6	1	26
	\$0	\$56,694	\$0	\$55,992	\$58,038	\$72,262	\$68,712	\$64,176	\$63,054
55-59	0	0	0	0	1	0	0	0	1
	\$0	\$0	\$0	\$0	\$55,992	\$0	\$0	\$0	\$55,992
60-70	0	0	0	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
All Ages	597	573	327	209	97	18	6	1	1828
	\$21,989	\$45,109	\$52,987	\$56,590	\$61,264	\$63,878	\$68,712	\$64,176	\$41,410

Average age last birthday: 30.0 years

Average completed years of pensionable service: 8.4 years

Table 3G

Female Other Ranks as at 31 December 1993

**Number of Current Contributors
and
Average Current Pay**

Age Last Birthday	Completed Years of Pensionable Service								All Years of Service
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
15-19	30	-	-	-	-	-	-	-	30
	\$17,136	-	-	-	-	-	-	-	\$17,136
20-24	843	135	-	-	-	-	-	-	978
	\$27,666	\$34,186	-	-	-	-	-	-	\$28,566
25-29	457	1059	203	-	-	-	-	-	1719
	\$30,023	\$35,089	\$36,754	-	-	-	-	-	\$33,939
30-34	116	446	1316	220	-	-	-	-	2098
	\$29,398	\$35,264	\$36,983	\$38,405	-	-	-	-	\$36,348
35-39	39	51	296	822	69	-	-	-	1277
	\$28,393	\$35,556	\$37,185	\$38,666	\$40,781	-	-	-	\$37,999
40-44	8	9	14	148	188	11	-	-	378
	\$28,866	\$33,676	\$37,065	\$39,108	\$41,291	\$42,381	-	-	\$39,867
45-49	0	0	4	3	34	53	1	-	95
	\$0	\$0	\$36,984	\$40,980	\$40,679	\$43,182	\$43,860	-	\$41,962
50-54	0	0	0	1	2	3	10	0	16
	\$0	\$0	\$0	\$35,016	\$43,794	\$42,292	\$44,610	\$0	\$43,474
55-59	0	0	0	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
60-70	0	0	0	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
All Ages	1493	1700	1833	1194	293	67	11	0	6591
	\$28,336	\$35,070	\$36,991	\$38,676	\$41,117	\$43,010	\$44,542	\$0	\$35,097

Average age last birthday: 30.9 years

Average completed years of pensionable service: 10.1 years

Table 3H

**Former Contributors as at 31 December 1993
Other Than Disability Pensioners***

Age Last Birthday	Number			Annual Pension**	
	Male	Female	Total	Basic	Supplementary***
25-29	26	4	30	\$169,590	\$2,211
30-34	393	77	470	\$3,227,704	\$116,247
35-39	816	96	912	\$10,235,448	\$366,732
40-44	2,341	118	2,459	\$36,513,925	\$2,511,759
45-49	5,565	112	5,677	\$93,020,035	\$13,292,494
50-54	9,006	110	9,116	\$145,258,660	\$37,861,841
55-59	12,227	93	12,320	\$175,730,693	\$79,069,413
60-64	12,067	77	12,144	\$123,451,596	\$115,416,454
65-69	9,172	65	9,237	\$55,789,394	\$105,884,974
70-74	8,229	38	8,267	\$39,786,156	\$112,601,291
75-79	4,186	60	4,246	\$16,378,961	\$55,009,228
80-84	1,154	18	1,172	\$3,719,359	\$13,798,038
85-89	199	5	204	\$509,724	\$2,058,828
90-94	26	0	26	\$48,912	\$211,020
95-99	1	0	1	\$924	\$4,020
Total	65,408	873	66,281	\$703,841,081	\$538,204,550

Average age last birthday: 60.4 years

* 1,938 males and 108 females who were medically discharged under Q.R. & O. 15.01 Article 3B, which are cases of former members medically unfit to perform their duties in present trade or employment and not otherwise advantageously employable in the Forces, were included among "Other Than Disability Pensioners".

** Amounts of pension take into account the integration of the CFSA with the C/QPP.

*** Accumulated indexing includes increase effective 1 January 1994.

Table 3I

**Former Contributors as at 31 December 1993
Disability Pensioners**

Age Last Birthday	Number			Annual Pension*	
	Male	Female	Total	Basic	Supplementary**
25-29	1	0	1	\$4,884	\$144
30-34	11	0	11	\$60,540	\$2,844
35-39	21	5	26	\$153,504	\$18,840
40-44	32	8	40	\$232,188	\$63,180
45-49	161	4	165	\$515,208	\$510,156
50-54	404	1	405	\$1,313,904	\$1,771,620
55-59	760	3	763	\$2,298,804	\$4,347,108
60-64	1,235	5	1,240	\$3,272,448	\$8,094,456
65-69	986	3	989	\$2,490,624	\$7,419,600
70-74	726	4	730	\$1,885,956	\$6,302,064
75-79	231	0	231	\$562,308	\$2,029,308
80-84	33	1	34	\$85,872	\$326,772
85-89	4	0	4	\$6,924	\$28,740
90-94	1	0	1	\$1,764	\$7,668
Total	4,606	34	4,640	\$12,884,928	\$30,922,500

Average age last birthday: 62.9 years

* Amounts of pension take into account the integration of the CFSA with the C/QPP.

** Accumulated indexing includes increase effective 1 January 1994.

Table 3J

Surviving Spouses* as at 31 December 1993

Age Last Birthday	Number	Annual Pension**	
		Basic	Supplementary***
20-24	1	\$1,824	\$12
25-29	34	\$89,028	\$23,976
30-34	79	\$275,208	\$36,852
35-39	140	\$544,764	\$161,760
40-44	210	\$964,044	\$404,628
45-49	427	\$1,947,540	\$1,247,964
50-54	813	\$3,384,348	\$2,932,656
55-59	1,507	\$4,896,624	\$6,523,896
60-64	2,184	\$5,700,936	\$10,880,148
65-69	3,127	\$6,890,676	\$17,537,556
70-74	3,521	\$6,672,180	\$20,577,948
75-79	2,074	\$3,509,916	\$11,884,476
80-84	867	\$1,282,236	\$4,699,608
85-89	237	\$345,516	\$1,346,040
90-94	61	\$8,076	\$31,212
95-99	7	\$4,548	\$20,676
Total	15,289	\$36,517,464	\$78,309,408

Average age last birthday: 66.8 years

* 19 of the surviving spouses are widowers.

** Amounts of pension take into account the integration of the CFSA with the C/QPP.

*** Accumulated indexing includes increase effective 1 January 1994.