

on the Pension Plan for the

# CANADIAN FORCES

as at 31 March 2005



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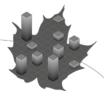
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4 August 2006

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

#### Dear Minister:

Pursuant to section 6 of the *Public Pensions Reporting Act*, I am pleased to submit the report on the actuarial review as at 31 March 2005 of the Canadian Forces pension plan. This plan is defined by Parts I, III, and IV of the *Canadian Forces Superannuation Act*, the *Pension Benefits Division Act* and the Canadian Forces-related benefits defined by the *Special Retirement Arrangements Act*.

Yours sincerely,

Jean-Claude Ménard, F.S.A., F.C.I.A.

Jean-Claude Menard

Chief Actuary

# Pension Plan for the **CANADIAN FORCES**as at 31 March 2005

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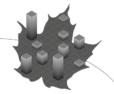


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# I. Executive Summary

#### A. Introduction

The previous actuarial report on the Canadian Forces pension plan was made as at 31 March 2002. The valuation was in respect of the plan defined by Parts I, III, and IV of the *Canadian Forces Superannuation Act* (CFSA) and by the *Pension Benefits Division Act*. The Canadian Forces pension plan is deemed to also include the Canadian Forces-related benefits defined in the *Special Retirement Arrangements Act*.

In the previous actuarial report, a valuation was conducted on a solvency basis as a measure of sensitivity. For this report, the solvency valuation is replaced by two other valuations to measure the investment risks inherent to the Canadian Forces pension plan.

#### **B.** Purpose of Actuarial Report

This actuarial report on the Canadian Forces pension plan was made as at 31 March 2005 pursuant to the *Public Pensions Reporting Act* (PPRA). The date of the next periodic review is 31 March 2008.

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

- balance sheets of the pension plan as at the valuation date, i.e. the actuarial liabilities, the actuarial value of assets and the actuarial surplus or actuarial deficit of the Pension Fund;
- the annual amount to amortize over a period of years any actuarial deficit revealed as at the valuation date; and
- the projected costs of the plan for each of the next three plan years¹ following the valuation date.

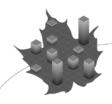
#### C. Main Findings

• As at 31 March 2005 the plan had an actuarial excess of \$2,988.6 million in the Superannuation Account and an actuarial deficit of \$306.1 million in the Pension Fund. These amounts are 7.8% and 7.2% of the corresponding liabilities, respectively.

• The actuarial excess of the Superannuation Account is less than 10% of the corresponding liabilities. If the \$306.1 million Pension Fund actuarial deficit were to be amortized in 10<sup>2</sup> equal annual instalments beginning on 31 March 2007, the instalments including interest would be \$46.8 million.

Any reference to a given *plan year* in this report should be taken as the 12-month period ending 31 March of the given year.

The deficit is amortized over the expected average remaining service life (EARSL) for the active members, which is 11 years as at 31 March 2005, except that the proposed schedule is deemed to begin on 31 March 2007. Special payments are assumed to be made at the end of the plan year.



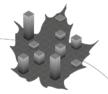
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• The CFSA normal cost for the 2006 plan year is 22.50% of pensionable payroll<sup>1</sup>, that is \$801.6 million, and is estimated to be 22.60% and 22.57% of pensionable payroll for each of the following two plan years, respectively.

#### D. Retirement Compensation Arrangements (RCA) Account Results

- As at 31 March 2005 the RCA Account had an actuarial excess of \$1.3 million.
- The RCA normal cost for the 2006 plan year is 0.60% of pensionable payroll, that is \$22.7 million, and is estimated to be 0.69% and 0.77% of pensionable payroll for each of the following two plan years.

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



# II. Financial Position of the Plan

#### A. CFSA Valuation Results

Beginning on 1 April 2000, employer and member contributions to the *Canadian Forces Superannuation Act* (CFSA) plan were no longer credited to the Canadian Forces Superannuation Account. Rather, they were deposited in the newly created Canadian Forces Pension Fund to be invested in the financial markets. The valuation results of this section show the financial position for both CFSA financing arrangements as at 31 March 2005. A projection of the Superannuation Account is shown in Appendix 9 and a projection of the Pension Fund is shown in Appendix 10.

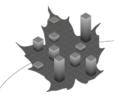
The following balance sheet was prepared using the assets described in Appendix 4, the data described in Appendix 5, the methodology described in Appendix 6, and the assumptions described in Appendix 7.

**Table 1 Balance Sheet** As at 31 March 2005 (\$ millions)

	Superannuation	Pension
<u> </u>	Account	Fund
Assets		
Actuarial value of assets <sup>1</sup>	41,408.7	3,974.3
Excess of Actuarial Value of Assets over Actuarial Liabilities	2,988.6	-
	38,420.2	-
Actuarial liabilities		
For benefits accrued to, and in respect of active members	10,814.2	3,750.9
For benefits payable to, and in respect of:		
· Retirement pensioners	24,778.3	522.6
· Disability pensioners	382.0	3.1
· Surviving spouses	2,264.4	3.4
· Surviving children	6.5	0.3
Administrative expenses	174.8	2
Total actuarial liabilities	38,420.2	4,280.4
Actuarial surplus/(deficit)	-	(306.1)

Includes the present value of future contributions in respect of elected prior service and leave without pay, which were estimated at \$58.0 million for the Superannuation Account and \$125.0 million for the Pension Fund. Moreover, the actuarial value of assets for the Pension Fund corresponds to a five-year smoothed market value where the appreciation of investment gains or losses is recognized at the rate of 20% per year.

The administrative expenses are recognized in the year they occur through the calculation of the normal cost.



Pension Plan for the CANADIAN FORCES as at 31 March 2005

**B.** Reconciliation of CFSA Valuation Results

# This section reconciles each financial position shown in this valuation with the

corresponding item of the previous valuation. The items shown in the following table are explained afterward.

Table 2 Reconciliation of Financial Position (\$ millions)

	Superannuation Account	Pension Fund
As at 31 March 2002	3,896.6	(5.2)
Unrecognized investment losses as at 31 March 2002	-	(52.2)
Data corrections	(114.6)	(61.6)
Expected interest on initial financial position	1,017.2	(24.2)
Amounts debited on basis of actuarial valuation	(912.5)	-
Experience gains and losses	(413.2)	115.9
Change in actuarial assumptions	(453.3)	(121.4)
Plan amendments	(10.7)	(38.3)
Change in the present value of administrative expenses	8.4	-
Change in the present value of prior service contributions	(29.3)	81.8
Unrecognized investment gains as at 31 March 2005		(200.9)
As at 31 March 2005	2,988.6	(306.1)

## 1. Unrecognized Investment Losses as at 31 March 2002

An actuarial asset valuation method that minimizes the impact of short-term fluctuations in the market value of assets was used in the previous valuation report, causing the actuarial value of the Pension Fund assets to be \$52.2 million more than their market value.

#### 2. Data Corrections

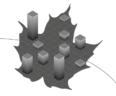
The correction of data (such as status and pension amounts) upon which the 2002 report was based, resulted in an increase in the actuarial liabilities of \$114.6 million and \$61.6 million respectively in both the Superannuation Account and the Pension Fund.

#### 3. Expected Interest on Initial Financial Position

After factoring the data corrections item mentioned previously, the expected interest to 31 March 2005 on the Account actuarial excess of \$3,782.0 million as at

- 31 March 2002 amounted to \$1,017.2 million. After recognizing both the data corrections and the unrecognized investment losses items, the expected interest to
- 31 March 2005 on the Pension Fund actuarial deficit of \$119.0 million as at
- 31 March 2002 amounted to \$24.2 million. These amounts of interest were based on the Account and Fund yields projected in the previous report for the three-year intervaluation period.

as at 31 March 2005



#### 4. Amounts Debited on Basis of Actuarial Valuation

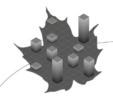
Legislative provisions grant authority to debit some excess of notional assets over actuarial liabilities from the Superannuation Account. After taking interest into account, the balance in the Account was reduced by \$912.5 million, following the withdrawals of \$198.0 million and \$630.0 million made on 31 March 2003 and 31 March 2004 respectively.

#### 5. Experience Gains and Losses

Since the previous valuation, experience losses have increased the Superannuation Account actuarial liabilities by \$413.2 million and have decreased the Pension Fund actuarial liabilities by \$115.9 million. The items (in \$ millions) are described in the following table.

	Superannuation Account	Pension Fund
Demographic assumptions (i)		
New entrants	(63.7)	(74.1)
Terminations (return of contributions)	(115.0)	(68.3)
Disabilities (return of contributions)	1.9	0.9
Deaths (return of contributions)	(7.0)	(0.9)
Terminations with an annuity	13.7	4.2
Retirements with an annuity	61.0	13.6
Disabilities with an annuity	(70.8)	(8.8)
Deaths with an annuity	0.9	0.1
Healthy pensioner deaths	(28.3)	-
Healthy pensioner terminations	68.1	1.4
Disabled pensioner deaths	1.4	-
Widow(er) deaths	(23.5)	-
Total	(161.3)	$\overline{(131.9)}$
Cost/contributions difference (ii)	4.4	202.7
Expected/actual disbursements (iii)	(134.8)	18.7
Pension indexation	70.9	0.8
YMPE increases	(6.9)	(2.1)
Economic salary increases (vi)	(286.9)	(104.7)
Promotional and seniority increases	23.6	19.7
Investment earnings (v)	83.2	119.2
Administrative expenses	3.4	-
Miscellaneous	(8.8)	(6.5)
Net experience losses	(413.2)	115.9

(i) The net impact of the demographic experience increased the Account actuarial liabilities by \$161.3 million and the Fund actuarial liabilities by \$131.9 million. Lesser expected terminations and a higher proportion of disabilities accounted for most of the impact on the Account actuarial liabilities. The Fund actuarial liabilities were also impacted by lesser terminations than anticipated but also by an increase in the number of new entrants.



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- (ii) An increase in the Account actuarial excess of \$4.4 million resulted from higher than expected prior service contributions. A decrease in the Fund actuarial deficit of \$202.7 million was the result of actual government contributions during the intervaluation period being more than the government portion of the normal cost shown in the cost certificate of the previous report. These amounts include interest accumulation on the differences to 31 March 2005.
- (iii) Disability and retirement payments higher than expected resulted in a decrease of \$134.8 million in the Account actuarial excess. Return of contribution payments lower than anticipated reduced the Fund actuarial deficit by \$18.7 million.
- (iv) The general economic salary increases effective 1 April 2004 exceeded the projected increases by 1% and 4.3% for Officers and Other Ranks respectively. Accordingly, the Account actuarial liabilities increased by \$286.9 million while the Fund actuarial liabilities increased by \$104.7 million.
- (v) The rates of interest credited to the Account were in aggregate slightly higher than the corresponding projected Account yields in the previous valuation; consequently the experience gain was \$83.2 million. After some difficult times in 2001, 2002 and 2003, financial markets soared in 2004 and 2005. Consequently investment earnings were \$119.2 million more than expected.

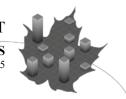
# 6. Change in Actuarial Assumptions

Actuarial assumptions were revised based on economic trends and demographic experience as described in Appendix 7. The impact (in \$ millions) of these revisions as at 31 March 2005 is described in the following table.

Assumption	Superannuation Account	Pension Fund	
Withdrawals	(27.2)	(44.1)	
Retirements	96.0	42.9	
Annuity reduction factors	(24.8)	(14.8)	
Proportion electing an immediate reduced annuity	(16.6)	(15.9)	
Disabilities	(105.1)	(59.0)	
Mortality rates	46.9	1.5	
Mortality improvement factors	(19.8)	(8.8)	
Age of survivor and proportion married	(50.7)	(1.1)	
Seniority and promotional salary increases	(41.6)	3.9	
Economic salary increases	(25.8)	(18.2)	
YMPE / MPE increases	2.2	(3.5)	
Pension indexation	715.0	(4.3)	
Interest earnings	(1,001.8)	-	
Net impact of changes	(453.3)	(121.4)	

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

- ultimate level of inflation lowered from 2.7% to 2.5%;
- ultimate real increase in average earnings increased from 0.9% to 1.0%; and
- ultimate yield on the Account lowered from 5.7% to 5.35%.

#### 7. Unrecognized Investment Gains

The same actuarial asset valuation method described in the 2002 valuation report, which role is to minimize the impact of short-term fluctuations in the market value of assets (see Appendix 6) was used for this valuation. For this valuation, the method caused the actuarial value of the Pension Fund assets to be \$200.9 million less than their market value due to unrecognized investment gains.

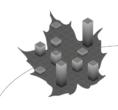
#### 8. Plan Amendments

This valuation fully reflects the regulatory change, expected to come into force in plan year 2008, which will provides for full vesting and portability options after two years of paid service in the Canadian Forces. Accordingly, the Account actuarial liabilities increased by \$10.7 million while the Fund actuarial liabilities increased by \$38.3 million. This valuation does not reflect the statutory changes that will create a new pension plan for the Reservists of the Canadian Forces expected to be implemented at the beginning of plan year 2008. These upcoming statutory changes have been the subject of a separate actuarial valuation report. The next CFSA actuarial report will review the pension plan of both Regular and Reservist members of the Canadian Forces.

#### C. CFSA Cost Certificate

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

This valuation reflects increases in member contribution rates, announced by the President of the Treasury Board. The increased member contribution rates, described in Appendix 2, are applied in calendar year 2006 and thereafter. Also recognized in this valuation is the implementation of the new 25 years term of service for new recruit starting in plan year 2005 and the upcoming full vesting and portability options after two years of service scheduled for plan year 2008.



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#### 1. Normal Cost

The estimated value of the sum of the benefits that will accrue on behalf of the members and the estimated administrative expenses to be charged to the Fund for plan year 2006 is 22.50% of pensionable payroll. The following table shows the details of the normal cost for plan year 2006.

**Table 3** Normal Cost for Plan Year 2006 (\$ millions)

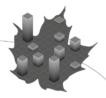
Total normal cost	801.6
Member required contributions	<u>182.4</u>
Government normal cost	619.2
Expected pensionable payroll	3,562.7
Total normal cost as % of expected pensionable payroll	22.50%
Ratio of government to member contributions	3.39

The following table reconciles the plan year 2006 normal cost with the plan year 2003 normal cost of the previous valuation.

**Table 4** Reconciliation of CFSA Normal Cost (% of pensionable payroll)

For plan year 2003	21.33
Data corrections	0.06
Expected normal cost change	(0.03)
Change in demographics	(0.04)
Plan amendments	0.39
Changes in assumptions	
Withdrawals	0.35
Retirements	(0.25)
Annuity reduction factors	0.09
Proportion electing an immediate reduced annuity	0.10
Disabilities	0.35
Seniority and promotional salary increases	(0.11)
Economic assumptions	0.23
Other items	0.03
For plan year 2006	22.50

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#### 2. Projection of Normal Costs

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

Plan Year	Percentage	\$ millions
2006	22.50	801.6
2007	22.60	830.2
2008	22.57	858.0
2009	22.46	884.7
2010	22.33	914.4
2015	21.60	1,067.9
2020	21.48	1,278.9

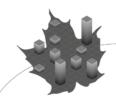
#### 3. Allocation of Normal Costs

The foregoing projected normal costs are borne jointly by the active members and the government. Current member contribution rates are 4% up to the Year's Maximum Pensionable Earnings (YMPE) of the Canada Pension Plan (CPP) and 7.5% of salary above the YMPE. Beginning in calendar year 2006, member contribution rates on the salary up to the YMPE will increase by 0.3% per year from 4.3% in calendar year 2006 up to the ultimate level of 6.4% first attained in calendar year 2013. The member contribution rates on salary above the YMPE will also increase by 0.3% per year from 7.8% in calendar year 2006 to the ultimate level of 8.4% first attained in calendar year 2008.

Plan Year	Government (%)	Member (%)	Ratio
2006	17.38	5.12	3.39
2007	17.19	5.41	3.18
2008	16.87	5.70	2.96

On a calendar year basis, the normal cost starting with calendar year 2007 would be as follows:

Calendar Year	Government (%)	Members (%)	Total (%)	Total (\$ millions)
2007	16.95	5.63	22.58	851.0
2008	16.59	5.90	22.49	878.0
2009	16.25	6.11	22.36	907.0



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#### 4. Administrative Expenses

Based upon the assumptions described in Appendix 7, the Fund administrative expenses (included in the normal costs shown above) are estimated as follows.

Plan Year	
2006	\$1,496,000
2007	\$1,800,000
2008	\$2,129,000

# 5. Contributions for Prior Service Elections and Leave Without Pay

Based upon the valuation data and the assumptions described in item B.4.d) of Appendix 7, member and government contributions for prior service and leave without pay elections were estimated as follows.

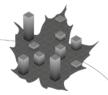
**Table 5** Estimated Contributions for Prior Service and Leave Without Pay (dollars)

	Superannua	tion Account	Pensio	on Fund
Plan Year	<u>Member</u>	Government	<u>Member</u>	Government
2006	3,288,000	3,288,000	4,009,000	13,604,700
2007	3,137,000	3,137,000	4,406,000	14,951,900
2008	2,988,000	2,988,000	4,750,000	16,119,300

# **6. Special Payments**

Based upon the Pension fund yields described in Appendix 7, the \$306.1 million Pension Fund actuarial deficit could be amortized over the expected average remaining service lifetime (EARSL) of active members in 10 equal annual instalments of \$46.8 million beginning on 31 March 2007.

as at 31 March 2005

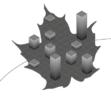


## D. Sensitivity to Variations in Key Assumptions

The results below measure the effect on the plan year 2006 normal cost, on the actuarial excess of the Superannuation Account and on the actuarial surplus of the Pension Fund for the CFSA if the key economic assumptions are varied one percentage point per annum from plan year 2006 onward.

_	Norm	al Cost	Superannuation Account		Pensio	n Fund
Assumption(s) Varied	2006 (%)	Effect (%)	Actuarial Excess (\$ millions)	Effect (\$ millions)	Actuarial Surplus (\$ millions)	Effect (\$ millions)
None (i.e. current basis)	22.50	None	2,989	None	(306)	None
Investment yield						
- if 1% higher	18.00	(4.50)	7,793	4,804	473	779
- if 1% lower	28.69	6.19	(3,145)	(6,134)	(1,354)	(1,048)
Inflation						
- if 1% higher	25.79	3.29	(1,790)	(4,778)	(894)	(588)
- if 1% lower	19.94	(2.56)	6,852	3,864	157	464
Salary increases						
- if 1% higher	24.32	1.82	2,494	(494)	(561)	(255)
- if 1% lower	20.91	(1.59)	3,439	451	(78)	228
Inflation and salaries						
- if both are 1% higher	27.86	5.36	(2,358)	(5,346)	(1,184)	(878)
- if both are 1% lower	18.52	(3.98)	7,249	4,261	360	666
Investment yield, inflation and salaries						
- if all are 1% higher	21.87	(0.63)	3,616	628	(174)	132
- if all are 1% lower	23.18	0.68	2,321	(667)	(447)	(141)

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



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#### E. RCA Account Valuation Results

The normal costs, assets and liabilities presented in this section were computed using the data, methodology and assumptions described in Appendix 8.

#### 1. RCA Account Balance Sheet

**Table 6** RCA Account Balance Sheet As at 31 March 2005 (\$ millions)

As at 31 March 2003 (5 millions)			
Assets			
RCA Account	94.9		
Refundable tax	75.1		
Excess of assets over actuarial liabilities	<u>1.3</u>		
	168.7		
Actuarial liabilities			
Pensionable earnings over the tax limit			
Active members	107.4		
Pensioners	20.1		
Survivor allowance			
Active members	24.3		
Pensioners <u>16.9</u>			
Total actuarial liabilities	168.7		

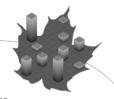
The financial position of the RCA Account has significantly improved since the last valuation (there was an actuarial deficiency of \$80.5 million as at 31 March 2002). The improvement is mainly the result of the 2005 Federal Budget that raised the maximum annual pension accrual in a registered pension plan from the current \$2,000 to \$2,111 for calendar year 2006, \$2,222 for calendar year 2007, \$2,333 for calendar year 2008 and to \$2,444 for calendar year 2009.

#### 2. RCA Account Normal Costs

Since the last RCA Account valuation as at 31 March 2002, the projected normal cost for plan year 2006 of 0.86% has decreased by 0.26% to 0.60%. The decrease in normal cost is mainly due to the 2005 Federal Budget.

The RCA Account normal cost for plan year 2006 is 0.60% of pensionable payroll, which is \$22.7 million, and is estimated to increase to 0.69% and 0.77% of pensionable payroll for plan years 2007 and 2008.

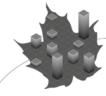
# Pension Plan for the **CANADIAN FORCES**as at 31 March 2005



The following table shows the RCA Account normal costs for the next three years.

Table 7 **RCA Account Normal Costs** (\$ millions)

		Plan Year	
	<u>2006</u>	<u>2007</u>	2008
Total Normal Cost			
Pensionable earnings over the tax limit	19.7	23.3	27.1
Survivor allowance	3.0	3.3	3.6
Total	22.7	26.6	30.7
Member Contributions	1.3	1.3	1.4
Government Normal Cost	21.5	25.3	29.3
Normal cost as % of total pensionable payroll	0.60%	0.69%	0.77%



Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

# **III. Actuarial Opinion**

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

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

Based on the results of this valuation, we hereby certify that, as at 31 March 2005, the total government cost for the following three years is as follows:

**Table 8** Estimated Government Cost

	Norm	nal Cost	Other Contributions <sup>1</sup>	T	otal Cost
Plan Year	CFSA (\$ millions)	RCA (\$ millions)	(\$ millions)	(\$ millions)	(% of pensionable payroll)
2006	619.1	21.5	16.9	657.5	18.45%
2007	631.3	25.3	64.9	721.5	19.64%
2008	641.3	29.3	65.9	736.5	19.37%

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

Daniel Hébert, F.S.A., F.C.I.A.

Jean-Claude Ménard, F.S.A., F.C.I.A.

lean-Claude Menard

Senior Actuary Chief Actuary

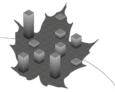
Public Sector Insurance and Pension Programs Office of the Chief Actuary

Ottawa, Canada

4 August 2006

Includes government contributions for prior service and leave without pay elections and CFSA special payments. Fund administrative expenses are included in the normal cost.

as at 31 March 2005



#### **APPENDICES**

# **Appendix 1 – Developments Occurring After Valuation Date**

The previous valuation report was based on the plan provisions as they stood after the enactment of Bill C-78 on 14 September 1999. The Canadian Forces Pension Modernization Project (CFPMP) will come to terms at the beginning of calendar year 2007 with the introduction of a series of amendments to the *Canadian Forces Superannuation Act* (CFSA). The major changes could be summarized as follows:

- An immediate pension after 25 or more years of paid Canadian Forces (CF) service;
- De-linking the pension eligibility from the terms of service and increasing pension options;
- Introducing pension arrangements for members of the Reserve Forces; and
- Full vesting and portability of benefits after the completion of two years of service.

In order to facilitate the implementation of the proposed changes to the act, the Department of National Defence has revamped certain terms of service in May 2005. The most significant change is the lengthening of the current "intermediate engagement" (IE) terms of service from 20 to 25 years.

Full time members of the Reserve Forces will be covered under the amended Part I of the CFSA while the remaining members of the Reserve Forces will be covered under the new Part I.1 of the CFSA. The new terms of service introduced in May 2005 will effectively create two separate groups of regular members. The first group will cover the new recruits, the current Regular members opting for the new intermediate engagement of 25 (IE25) years of service and those members who are currently serving under terms of service other than an IE20 or under an indefinite period of engagement. This first group will be entitled to an immediate annuity after the completion of 25 years of CF service as contemplated by the plan amendments. The second group will be members currently serving under an IE20 or an indefinite period of engagement. This group will see their benefit entitlement unchanged and therefore will be entitled to an immediate annuity after 20 years of CF service.

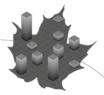
This valuation takes into account the plan amendment, originally authorized by Bill C-78, that will provides full vesting and portability of benefits after the completion of two years of paid service in the Canadian Forces. The new IE25 term of service has also been recognized for new recruits starting 1 April 2005. Regular members currently serving as at 31 March 2005 are assumed to continue under the terms of service preceding the May 2005 modifications.

This valuation does not cover the benefits to be provided to Reservists, either full-time members to be covered under the expected amended CFSA Part I or part-time Reservists members to be covered under the forthcoming new CFSA Part I.1. The financial impact of introducing pension arrangements to members of the Reserve Forces has been the subject of a separate valuation report. It is expected that the next periodic review of the Canadian Forces pension plan will cover the benefit provided to both Regular and Reserve Forces members.

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Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

Bill C-78 also gave authority to increase member contribution rates. The President of the Treasury Board has recently announced increases to the contribution rates for the Public Service, Canadian Forces and the Royal Canadian Mounted Police pension plans. Contribution rates will increase beginning in January 2006. These contribution rates are shown in the next section.



# **Appendix 2 – Summary of Plan Provisions**

Pensions for members of the Canadian Forces (the *regular force*) were first provided under the *Militia Pension Act* of 1901, when in 1950 it became the *Defence Services Pension Act* until the *Defence Services Pension Continuation Act* and the *Canadian Forces Superannuation Act* (CFSA) were enacted in 1959. Benefits are also provided to members of the Canadian Regular Forces under the *Special Retirement Arrangements Act*. Benefits are modified if the *Pension Benefits Division Act* is applicable.

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

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

#### A. Membership

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

#### **B.** Contributions

#### 1. Members

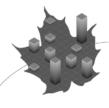
During the first 35 years of pensionable service, members contribute according to the rates shown in the following table. After 35 years of pensionable service, members contribute only 1% of pensionable earnings.

		Calendar Year							
	2005	2006	2007	2008	2009	2010	2011	2012	2013+
On earnings <b>up to</b> the maximum covered by the CPP	4.0%	4.3%	4.6%	4.9%	5.2%	5.5%	5.8%	6.1%	6.4%
On any earnings <b>over</b> the maximum covered by the CPP	7.5%	7.8%	8.1%	8.4%	8.4%	8.4%	8.4%	8.4%	8.4%

#### 2. Government

#### a) Current Service

The Government determines its normal monthly contribution as that amount, which when combined with the required contributions by active members in respect of current service, is sufficient to cover the cost, as estimated by the President of the



Pension Plan for the **CANADIAN FORCES** 

Treasury Board, of all future benefits that have accrued in respect of pensionable service during that month.

#### b) Elected Prior Service

The government contributes 1.2 times as much as the resulting member contributions made to the Superannuation Account for prior service elections. Government credits to the Pension Fund in respect of elected prior service are as described for current service.

#### c) Fund Administrative Expenses

The Fund administrative expenses are included in the normal cost.

#### d) Excess Notional Assets and Actuarial Surplus

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

- debit the excess of assets over the actuarial liabilities from the Superannuation Account subject to limitations, and
- deal with any actuarial surpluses, subject to limitations, in the Pension Fund as they occur, either by reducing member and/or employer contributions, or by making withdrawals.

#### e) Actuarial Deficit

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

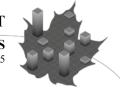
#### C. Summary Description of Benefits

The Canadian Forces pension plan mainly aims at providing a membership earnings-related lifetime retirement pension to the eligible Regular members of the Canadian Forces. The plan also provides benefits to members in case of disability and to the spouse and children in case of death.

Subject to its integration with the pensions paid by the Canada Pension Plan (CPP), the initial rate of retirement pension is equal to 2% of the highest average of annual pensionable earnings over any period of five consecutive years, multiplied by the number of years of pensionable service not exceeding 35. The pension is indexed annually with the Consumer Price Index and the accumulated indexation may be payable at the earliest of age 55 as defined in Note 2 of section D below. Entitlement to benefits depends on either service in the Force or pensionable service, as defined below in Notes 3 and 4 of section D below.

The new terms of service were effective in May 2005 for every new recruit. Current members serving under an indefinite period of service (IPS) are not affected by the change. Members currently serving under an IE20 may be offered the new IE25. The following table provides a description of the benefit offered under either the new IE25 or IE20 (members currently serving under the IE20 are considered grandfathered) for the two years

as at 31 March 2005



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

# 1. Active Members (prior to 1 April 2007)

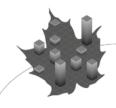
Type of Termination	Service in the Regular Force (Note 3)	Benefit
	3 years or less	Return of contributions (Note 8)
Retirement because of age (Note 7)	More than 3 but less than 10 years	Return of contributions or cash termination allowance (Note 9), whichever is the greater
	10 years or more	Immediate annuity (Note 10)
Retirement on completion of	Less than 10 years	Return of contributions (Note 8)
short engagement (an officer other than a subordinate officer who has not reached retirement age and	At least 10 but less than 25 years (less than 20 years – old terms of service)	At option of member (1) return of contributions; or (2) deferred annuity (Note 11)
is not serving on an intermediate engagement or for an indefinite period of service) (Note 5)	25 years or more (20 years or more – old terms of service)	See "Retirement for reasons other than those previously mentioned"
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, to promote economy or efficiency	Any length	Immediate annuity to which member was entitled upon completion of intermediate engagement increased to such extent as prescribed by regulation <sup>1</sup> (Note 13)
Retirement on completion of intermediate engagement (a member who has not reached retirement age and is not serving for an indefinite period of service) (Note 6)	25 years or more (20 years or more – old terms of service)	Immediate annuity (Note 10)
Compulsory retirement because of disability <sup>2</sup>	Less than 10 years	Return of contributions or cash termination allowance, whichever is greater
	10 years or more	Immediate annuity

The CFSA limits the annuity to the immediate annuity to which the active member would be entitled if retiring because of age or disability, and the formula in the CFS Regulations (Note 14) always produces less than the maximum.

APPENDIX 2

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Any condition rendering a member of the regular force mentally or physically unfit to perform his or her duties. A member is discharged under Q. R. & O. 15.01 Article 3B when he or she is unable to perform the duties of his or her own occupation. A member is discharged under Q.R. & O. 15.01 Article 3A when he or she is unable to perform any occupation.

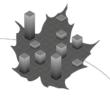


Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

Type of Termination	Service in the Regular Force (Note 3)	Benefit
	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
Compulsory retirement to promote economy or efficiency	At least 10 but less than 25 years (less than 20 years – old terms of service)	At option of member (1) return of contributions; or (2) deferred annuity; or (3) with consent of the Minister of National Defence, an immediate reduced annuity (Note 14)
	25 years or more (20 years or more – old terms of service)	Immediate annuity
	Less than 10 years	Return of contributions
Retirement for reasons other than those previously mentioned	At least 10 but less than 25 years (less than 20 years – old terms of service)	At option of member: return of contributions; or deferred annuity
	(At least 20 but less than 25 years – old terms of service)	Immediate reduced annuity
	25 years or more	Officer: - immediate reduced annuity (Note 14); Other than Officer: - immediate annuity (Note 10)

This valuation also recognized the expected change in regulations that will introduce full vesting and portability of benefits after the completion of two years of paid service in the Canadian Forces. For ease of computation, this valuation assumes that the introduction of the vesting and portability rules will become effective as at 1 April 2007 even if the regulations are expected to come into force as at 1 January 2007.

as at 31 March 2005



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

#### 2. Active Members (post 31 March 2007)

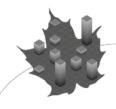
Type of Termination	Service in the Regular Force (Note 3)	Benefit
Retirement because of age	Less than 2 years	Return of contributions (Note 8)
(Note 7)	2 years or more	Immediate annuity (Note 10)
Retirement on completion of	Less than 2 years	Return of contributions (Note 8)
short engagement (an officer other than a subordinate officer who has not reached retirement age and is not serving on an	At least 2 but less than 25 years (less than 20 years – old terms of service)	At option of member (1) deferred annuity (Note 11); or (2) transfer value if under age 50 (Note 12)
intermediate engagement or for an indefinite period of service) (Note 5)	25 years or more (20 years or more – old terms of service)	See "Retirement for reasons other than those previously mentioned"
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, to promote economy or efficiency	Any length	Immediate annuity to which member was entitled upon completion of intermediate engagement increased to such extent as prescribed by regulation <sup>1</sup> (Note 13)
Retirement on completion of intermediate engagement (a member who has not reached retirement age and is not serving for an indefinite period of service) (Note 6)	25 years or more (20 years or more – old terms of service)	Immediate annuity (Note 10)
	Less than 2 years	Return of contributions (Note 8)
Compulsory retirement because of disability <sup>2</sup>	At least 2 but less than 10 years	At option of member (1) deferred annuity (Note 11); or (2) transfer value if under age 50 (Note 12)
	10 years or more	Immediate annuity

APPENDIX 2

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The CFSA limits the annuity to the immediate annuity to which the active member would be entitled if retiring because of age or disability, and the formula in the CFS Regulations (Note 14) always produces less than the maximum.

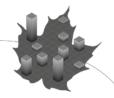
Any condition rendering a member of the regular force mentally or physically unfit to perform his or her duties. A member is discharged under Q. R. & O. 15.01 Article 3B when he or she is unable to perform the duties of his or her own occupation. A member is discharged under Q.R. & O. 15.01 Article 3A when he or she is unable to perform any occupation.



Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

Type of Termination	Service in the Regular Force (Note 3)	Benefit
	Less than 2 years	Return of contributions
	More than 2 but less than 10 years	At option of member (1) deferred annuity (Note 11); or (2) transfer value if under age 50 (Note 12)
Compulsory retirement to promote economy or efficiency	At least 10 but less than 25 years (less than 20 years – old terms of service)	At option of member (1) return of contributions; or (2) deferred annuity; or (3) transfer value if under age 50 (Note 12) (4) with consent of the Minister of National Defence, an immediate reduced annuity (Note 14)
	25 years or more (20 years or more – old terms of service)	Immediate annuity (Note 10)
	Less than 2 years	Return of contributions (Note 8)
Retirement for reasons other	At least 10 but less than 25 years (less than 20 years – old terms of service)	At option of member (1) deferred annuity (Note 11); or (2) transfer value if under age 50 (Note 12)
than those previously mentioned	(At least 20 but less than 25 years – old terms of service)	Immediate reduced annuity
	25 years or more	Officer: - immediate reduced annuity (Note 14); Other than officer: - immediate annuity (Note 10)





# 3. Benefits in Case of Death of an Active Member (prior to 1 April 2007)

Status at Death	Service in the Regular Force (Note 3)	Benefit
Leaving no eligible spouse or	Less than 10 years	Return of contributions or cash termination allowance, whichever is greater
children under 25 (Notes 15 and 16)	10 years or more	Five times the annual amount of retirement pension to which the member would have been entitled at the date of death
Leaving eligible spouse and/or children under 25	Less than 5 years	Return of contributions or an amount equal to one month's earnings of the deceased member for each year of credited pensionable service, whichever is the greater
	5 years or more	Annual allowance (Note 17)

# 4. Benefits in Case of Death of an Active Member (post 31 March 2007)

Status at Death	Service in the Regular Force (Note 3)	Benefit	
	Less than 2 years	Return of contributions	
Leaving no eligible spouse or children under 25 (Notes 15 and 16)	Five times the annual amount retirement pension to which to member would have been entitle the date of death		
Leaving eligible spouse and/or children under 25	Less than 2 years	Return of contributions or an amount equal to one month's earnings of the deceased member for each year of credited pensionable service, whichever is the greater	
	2 years or more	Annual allowance (Note 17)	

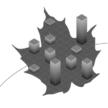
#### 5. Benefits in Case of Death of a Pensioner

Status at Death	Benefit	
Leaving no eligible spouse or children under 25	Minimum death benefit (Note 18)	
Leaving eligible spouse and/or children under 25	Annual allowance (Note 17)	

# **D.** Explanatory Notes

#### 1. Pensionable Earnings

Pensionable earnings means the salary at the annual rate prescribed by the regulations made pursuant to the *National Defence Act* together with the allowances representing



Pension Plan for the CANADIAN FORCES

medical-dental care costs prescribed by the Canadian Forces Superannuation Regulations to a member.

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

#### 2. Indexation

#### a) Level of Indexation Adjustments

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

#### b) First Indexation Adjustment

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

#### c) Commencement of Indexation Payments

The indexation portion of a retirement, disability or survivor pension normally starts being paid when the pension is put into pay. However, regarding a retirement pension, the pensioner must be at least 55 years old provided also the sum of age and pensionable service is at least 85; otherwise the retirement pensioner must be at least 60 years old.

#### 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 an active member was paid a return of contributions or lump sum payment under the CFSA that he or she did not elect to repay on subsequent enrolment.

#### 4. Pensionable Service

Pensionable service includes any period of service in the regular force in respect of which an active member either (1) made contributions that remain in the Account or Fund or (2) elected to contribute. It also includes any period of prior service for which an active member was paid a return of contributions or lump sum payment under the CFSA that he or she did elect to repay on subsequent enrolment.

#### 5. Short Engagement

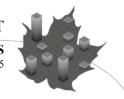
Short engagement means a continuous period of service as a commissioned officer in the regular force for a period not exceeding nine years.

#### 6. Intermediate Engagement

Intermediate engagement means 20 years (IE20) of continuous service as a member of the regular force for members serving under an indefinite period of service (IPS) or serving under an IE20 and did not opt for the new intermediate engagement of 25 years

#### Pension Plan for the CANADIAN FORCES

as at 31 March 2005



of continuous service effective May 2005. All other regular members will have to complete the new IE25 in order to be eligible to an immediate unreduced annuity.

## 7. Retirement Because of Age

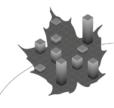
Retirement because of age means ceasing to be a member of the regular force at or after the prescribed retirement age for any reason other than disability or death. A retirement age of 55 applies for all members serving under the career programs adopted in 1975.

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 members who enrolled on or after that date, or to those serving on that date that elected to be subject to such rules, are shown in the table on the next page.

	Pre-1975 Retirement Age		
	General Service	Specialist Service	Commissioned From Rank
Brigadier-General and above	55	60	55
Colonel	55	58	55
Lieutenant-Colone	51	55	50
Major	47	55	50
Captain and Lieutenant	45	50	50
Others Ranks above Corporal	50		
Corporal and below	44		

For those members 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 members 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.



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	Years of Service
Colonel and above	30
Officers below Colonel	28
Other Ranks above Corporal	30
Corporal and below	25

#### 8. Return of Contributions

Return of contributions means the payment of an amount equal to the accumulated current and prior service contributions paid or transferred by the member into the Account and/or into the Fund. Interest is credited at the quarterly Fund rate each quarter on the accumulated contributions with interest as at the end of the previous quarter.

#### 9. Cash Termination Allowance

Cash termination allowance means the payment of an amount equal to one month's employment earnings at the rate authorized to be paid to the active member at date of termination multiplied by the number of years of pensionable service to the credit of the active member minus the total reduction in employee contributions to the CFS Account by virtue of the integration of the plan with the CPP.

#### 10. Immediate Annuity

Immediate annuity means an unreduced pension that becomes payable immediately upon a pensionable retirement or a pensionable disability. The annual amount is equal to 2% of the highest average of annual pensionable earnings (calculated without reference to the yearly maximum described in Note 1) of the active member over any period of five consecutive years, multiplied by the number of years of pensionable service not exceeding 35. However, if such highest five-year earnings average exceeds the yearly maximum prescribed for the calendar year in which service is terminated, then the annual amount is reduced by 2% of such excess, multiplied by the number of years of pensionable service after April 1995.

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

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

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

Indexed CPP annual pensionable earnings means the average of the YMPE, as defined in the CPP, over the last five years of pensionable service, increased by indexation proportionate to that accrued in respect of the immediate annuity.

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

#### Pension Plan for the **CANADIAN FORCES**

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#### 11. Deferred Annuity

Deferred annuity means an annuity that normally becomes payable to a retirement pensioner when he/she reaches age 60. The annual payment is determined like that of an immediate annuity (see Note 10 above) but is adjusted to reflect the indexation (see page 30) from date of termination to the commencement of annuity payments.

When a member entitled to a deferred annuity becomes disabled before reaching age 60, the member ceases to be entitled to that deferred annuity and becomes entitled to an immediate annuity.

When a member, 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 member becomes entitled to a deferred annuity.

#### 12. Transfer Value

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

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

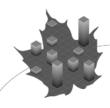
#### 13. Annuity Payable upon Retirement During an Indefinite Period of Service

For an active member 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, or to promote economy or efficiency, Canadian Forces Superannuation Regulations prescribe an annuity that is equal to the greater of:

- (a) an immediate annuity based on the pensionable service to the date of completion of the intermediate engagement only and the highest five-year earnings average at date of retirement, and
- (b) an immediate annuity based upon the total pensionable service to the date of retirement and the highest five-year employment earnings average at that date reduced by 5% of such amount of annuity for each full year by which:
  - in the case of an officer, the age at the date of retirement is less than the retirement age applicable to the member's rank; or
  - in the case of a member other than an officer, the age at the date of retirement is less than the retirement age applicable to the member's rank or the period of service in the regular force is less than 25 years, whichever is the lesser.

#### 14. Reduced Immediate Annuity

Reduced immediate annuity means an immediate annuity for which the annual amount of the annuity as determined in Note 10 is reduced as stated below.



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With the consent of the Minister of National Defence, an active member who is required to terminate 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 active member at the time of retirement is less than the retirement age applicable to the member's rank,

whichever is the lesser.

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

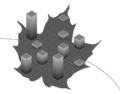
- (a) as an officer having served in the regular force for 20 years or more, to an immediate annuity reduced by 5% for each full year by which his or her age at the time of retirement is less than the retirement age applicable to his or her rank, or
- (b) as other than an officer having served in the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

whichever is the lesser.

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

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#### 15. Eligible Surviving Spouse

Eligible surviving spouse means the surviving spouse of an active member or pensioner except if:

- (a) the active member or pensioner died within one year of marriage unless the Minister of National Defence is satisfied that the member's health at the time of the marriage justified an expectation of surviving for at least one year; or
- (b) the pensioner married at age 60 or over, unless after such marriage the pensioner either:
  - became a member again (in such cases, common-law unions are accepted), or
  - made an optional survivor benefit election within 12 months following
    marriage to accept a reduced pension so that the new spouse would be eligible
    for a survivor benefit. This reduction is reversed if and when the new spouse
    predeceases the pensioner or the spousal union is terminated for reason other
    than death; or
- (c) the pensioner is a female who retired before 20 December 1975 and did not make an optional survivor benefit election within the one-year period ending 6 May 1995.

#### 16. Eligible Surviving Children

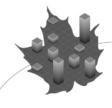
Eligible surviving children includes all children of the active member or pensioner who are under age 18, and any child of the active member or pensioner who is age 18 or over but under 25, in full-time attendance at a school or university, having been in such attendance substantially without interruption since he or she reached age 18 or the active member or pensioner died, whichever occurred later.

#### 17. Annual Allowance for Eligible Survivors

Annual allowance means, for the eligible surviving spouse and children of an active member or pensioner, an annuity that becomes payable immediately upon the death of that individual. The amount of the allowance is determined with reference to a basic allowance equal to 1% of the highest average of annual pensionable earnings of the active member over five consecutive years, multiplied by the number of years of pensionable service not exceeding 35. If such highest five-year earnings average exceeds the yearly maximum prescribed for the calendar year in which service is terminated, then the annual amount is reduced by 2% of such excess, multiplied by the number of years of pensionable service after April 1995.

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

The annual allowance for an eligible surviving child is equal to 20% of the basic allowance, subject to a reduction if there are more than four eligible surviving children



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in the same family. The annuity otherwise payable to an eligible surviving child is doubled if the child is an orphan.

Annual allowances are not integrated with the CPP and are payable in equal monthly instalments in arrears until the end of the month in which the survivor dies or otherwise loses eligibility. If applicable, a residual benefit (Note 18) is payable to the estate upon the death of the last survivor.

#### 18. Minimum Death Benefit

If upon the death of an active member 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 active member or to the named beneficiary under CFSA Part II, if any exist:

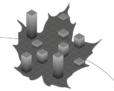
- (a) if the active member was not a member of the regular force upon or after 20 December 1975, any amount by which the amount of return of contributions exceeds the aggregate of all amounts paid to those persons and to the active member;
- (b) if the active member was a member of the regular force 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 basic annuity to which the active member was or would have been entitled at the time of his or her death; or
- (c) if the active member was retired and entitled to an immediate annuity from which a deduction had been made as a result of integration with the CPP, the amount payable in (a) or (b) above cannot be less than the amount by which the cash termination allowance (see Note 9 above) exceeds the aggregate of all amounts already paid to those persons and to the active member.

#### 19. Division of Pension in Case of Spousal Union Breakdown

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

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# **Appendix 3 – RCA Benefit Provisions**

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

# A. Annual Allowance for Eligible Survivors

If the annual allowance for an eligible survivor described in Note 17 of section D of Appendix 2 exceeds the tax-related limits described hereafter for registered plans, then the excess in respect of service only from 1 January 1992 is payable from the RCA.

# 1. Tax-related limit on pre-retirement survivor benefits

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

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

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

# 2. Tax-related limit on post-retirement survivor benefits

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

### B. Minimum Death Benefit

If the minimum death benefit lump sum described in Note 18 of section D of Appendix 2 exceeds the tax-related limits described hereafter, then the excess is payable from the RCA.

### 1. Tax-related limit on pre-retirement minimum death benefits

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

# 2. Tax-related limit on post-retirement minimum death benefits

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



Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

# C. Excess Pensionable Earnings

The highest average of pensionable earnings under a registered defined benefit pension plan is subject to a prescribed yearly maximum. Because the plan is integrated with the pensions paid by the Canada Pension Plan, the prescribed maximum is derived from both the maximum annual pension benefit (\$2,000 for calendar year 2005) payable from a registered defined benefit pension plan and the YMPE. The maximum was \$114,400 for the 2005 calendar year.

To the extent that a member's average earnings at retirement exceed the prescribed yearly maximum, the corresponding excess pension, in respect of service from 1 May 1995, is payable from the RCA.



# Appendix 4 – Plan Assets and Rates of Return

### A. Plan Assets

## 1. Canadian Forces Superannuation Account

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

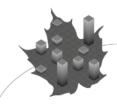
The Account was credited with all CFSA contributions made by members and the government up to 31 March 2000, as well as with prior service contributions for elections made prior to 1 April 2000 and leave without pay contributions for periods before 1 April 2000 but remitted after that date. It is charged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

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

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

(\psi \text{Immons})				
Plan year	2003	2004	2005	2003-2005
Public Accounts opening balance	38,626.6	39,700.3	40,251.7	38,626.6
INCOME				
Interest earnings	3,220.3	3,216.7	3,171.7	9,608.6
Employer contributions	4.3	4.5	4.4	13.2
Employee contributions	4.5	4.5	4.1	13.1
Transfers received	4.4	3.8	3.6	11.8
Actuarial liability adjustments	(198.0)	(630.0)	0.0	(828.0)
Subtotal	3,035.6	2,599.5	3,183.7	8,818.7
EXPENDITURES				
Annuities	1,911.3	1,996.3	2,029.9	5,937.5
Pension divisions	34.4	35.0	42.2	111.6
Return of contributions	0.0	0.0	0.0	0.0
Transfers to other pension plans	0.7	0.7	0.5	1.8
Minimum benefits	7.6	5.3	3.5	16.4
Administrative expenses	8.0	10.8	8.6	27.4
Subtotal	1,961.9	2,048.1	2,084.7	6,094.6
Public Accounts closing balance	39,700.3	40,251.7	41,350.7	41,350.7

Balances and subtotals in this table may differ from the underlying figures due to rounding.



Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

The foregoing table shows the reconciliation of the assets in the Canadian Forces Superannuation Account between the last valuation date and the current valuation date. Since the last valuation, the Account balance has increased by \$2.7 billion (a 7% increase) to reach \$41.4 billion as at 31 March 2005.

### 2. Canadian Forces Pension Fund

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

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

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

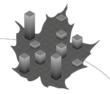
2003	2004	2005	2003-2005
1,271.4	1,767.6	3,006.9	1,271.4
(200.1)	516.5	271.3	587.7
551.8	580.6	629.8	1,762.2
157.2	165.6	179.2	502.1
0.0	0.1	0.2	0.4
509.0	1,262.8	1,080.6	2,852.4
7.5	15.4	25.5	48.5
0.4	1.2	3.0	4.6
0.0	0.0	0.0	0.0
0.0	0.1	0.1	0.2
4.4	6.1	8.0	18.4
0.4	0.7	0.8	1.9
12.8	23.4	37.4	73.6
1,767.6	3,006.9	4,050.2	4,050.2
	1,271.4  (200.1) 551.8 157.2 0.0 509.0  7.5 0.4 0.0 0.0 4.4 0.4 12.8	1,271.4     1,767.6       (200.1)     516.5       551.8     580.6       157.2     165.6       0.0     0.1       509.0     1,262.8       7.5     15.4       0.4     1.2       0.0     0.0       0.0     0.1       4.4     6.1       0.4     0.7       12.8     23.4	1,271.4     1,767.6     3,006.9       (200.1)     516.5     271.3       551.8     580.6     629.8       157.2     165.6     179.2       0.0     0.1     0.2       509.0     1,262.8     1,080.6       7.5     15.4     25.5       0.4     1.2     3.0       0.0     0.0     0.0       0.0     0.1     0.1       4.4     6.1     8.0       0.4     0.7     0.8       12.8     23.4     37.4

The foregoing table shows the reconciliation of the assets (market value) in the Canadian Forces Pension Fund between the last valuation date and the current valuation date. Since the last valuation, the Fund balance has increased significantly to reach \$4.0 billion as at 31 March 2005.

Balances and subtotals in this table may differ from the underlying figures due to rounding.

### Pension Plan for the **CANADIAN FORCES**

as at 31 March 2005



#### B. Rates of Return

The following CFSA rates of return by plan year were calculated using the foregoing entries. The Account yields are based on book values because the notional bonds are considered held to maturity. The Fund yields are based on market values to measure its actual performance. The results were computed using the dollar-weighted approach, assuming a uniform distribution of cash flows during the plan year (except for actuarial liability adjustments, which occurred on 31 March) by imputing to them one-half year of interest.

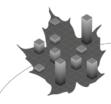
Plan Year	Superannuation Account	Pension Fund
2003	8.55%	(12.19%)
2004	8.32%	24.49%
2005	8.09%	8.22%

### C. Sources of Asset Data

The Account and Fund entries shown in section A above were taken from the Public Accounts of Canada and the financial statements of the Public Service Pension Investment Board, respectively. In accordance with section 8 of the *Public Pensions Reporting Act*, the Office of the Comptroller General of Canada provided a certification of the assets of the plan as at 31 March 2005.

# ACTUARIAL REPORT Pension Plan for the CANADIAN FORCES

as at 31 March 2005



**Appendix 5 – Membership Data** 

# A. Sources of Membership Data

The individual data in respect of active members, pensioners, and eligible survivors were provided by the Department of National Defence as at 31 March 2005, and are shown in the summaries of data in this Appendix.

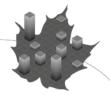
# B. Validation of Membership Data

The principal validation tests applied to the valuation input data were as follows:

- reconciling the membership data with the data used in the previous valuation report (see tables 11, 12 and 13);
- comparing the membership with that published in the Report on the Administration of the Canadian Forces Superannuation Account for the year ending 31 March 2005;
- checking that the salary of an active member is within a certain range reasonably consistent with the salary of that active member in the previous valuation report;
- verifying that the pensionable service of an active member is reasonably consistent with the attained age; and
- comparing the initial pension of each active member retiring during the period with the expected pension based on the 31 March 2005 valuation data, taking into account any changes arising from service after 31 March 2002.

Based on the omissions and discrepancies identified by these and other tests, appropriate adjustments were made to the basic data after consulting with the Department of National Defence who provided them.

as at 31 March 2005



# C. Reconciliation of Membership Data

The following tables, derived from the basic data, shows pertinent statistics concerning active members, pensioners, and survivors during the period from April 2002 to March 2005 inclusive.

**Table 11** Reconciliation of Active Members

		Male			<u>Female</u>		
	<u>Officers</u>	Other <u>Ranks</u>	<u>Total</u>	<u>Officers</u>	Other <u>Ranks</u>	<u>Total</u>	<u>Total</u>
Active Members as at 31 March 2002	11,508	40,816	52,324	1,837	5,222	7,059	59,383
Data corrections <sup>1</sup>	451	(370)	81	47	(36)	11	92
New entrants <sup>2</sup>	2,077	8,791	10,868	524	1,534	2,058	12,926
Terminations							
Annuity benefits							
Death	(14)	(58)	(72)	(4)	(4)	(8)	(80)
Disabled 3A	(4)	(42)	(46)	0	(7)	(7)	(53)
Disabled 3B	(120)	(1,679)	(1,799)	(36)	(325)	(361)	(2,160)
Other <sup>3</sup>	(1,138)	(3,321)	(4,459)	<u>(113)</u>	(354)	<u>(467)</u>	(4,926)
Subtotal	(1,276)	(5,100)	(6,376)	(153)	(690)	(843)	(7,219)
Lump sum benefits							
Death	(6)	(37)	(43)	(2)	(3)	(5)	(48)
Disabled 3A	(1)	0	(1)	0	(3)	(3)	(4)
Disabled 3B	(43)	(260)	(303)	(24)	(71)	(95)	(398)
Other <sup>3</sup>	<u>(510)</u>	(2,202)	(2,712)	<u>(150)</u>	(267)	<u>(417)</u>	(3,129)
Subtotal	(560)	(2,499)	(3,059)	(176)	(344)	(520)	(3,579)
Total terminations	(1,836)	(7,599)	(9,435)	(329)	(1,034)	(1,363)	(10,798)
Active Members as at 31 March 2005	12,200	41,638	53,838	2,079	5,686	7,765	61,603

APPENDIX 5

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On this line, active members who had other rank status on 31 March 2002 and who attained officer status between April 2002 and March 2005 are shown as officers rather than other ranks.

Excludes 1,370 active members, entitled to a lump sum, who were released from the Forces during their year of entry.

<sup>&</sup>lt;sup>3</sup> Compulsory retirements because of age, promotion of economy or efficiency, and all retirements for other reasons.



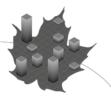
Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

**Table 12** Reconciliation of Pensioners

	orr	Male Other	T 1	0.00	Female Other	T. 4.1	T . 1
	Officers	<u>Ranks</u>	<u>Total</u>	<u>Officers</u>	<u>Ranks</u>	<u>Total</u>	<u>Total</u>
Retirement Pensioners <sup>1</sup>							
Entitled as at 31 March 2002	16,486	54,483	70,969	576	1,980	2,556	73,525
Data corrections	(60)	(177)	(237)	(2)	(7)	(9)	(246)
New entitlements	1,138	3,321	4,459	113	354	467	4,926
Terminations							
Death	(1,226)	(3,665)	(4,891)	(23)	(11)	(34)	(4,925)
Other <sup>2</sup>	<u>(83)</u>	(128)	<u>(211)</u>	<u>(8)</u>	<u>(16)</u>	<u>(24)</u>	(235)
Subtotal	(1,309)	(3,793)	(5,102)	(31)	(27)	(58)	(5,160)
Entitled as at 31 March 2005	16,255	53,834	70,089	656	2,300	2,956	73,045
Disability Pensioners (3A)							
Entitled as at 31 March 2002	230	3,175	3,405	18	70	88	3,493
Data corrections	2	0	2	0	1	1	3
New entitlements	4	42	46	0	7	7	53
Death	(29)	(459)	(488)	(2)	(3)	(5)	(493)
Entitled as at 31 March 2005	207	2,758	2,965	16	75	91	3,056
Disability Pensioners (3B)							
Entitled as at 31 March 2002	333	4,198	4,531	57	561	618	5,149
Data corrections	0	61	61	2	6	8	69
New entitlements	120	1,679	1,799	36	325	361	2,160
Terminations							
Death	(13)	(99)	(112)	0	(4)	(4)	(116)
Other <sup>2</sup>	<u>(1)</u>	<u>(4)</u>	<u>(5)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>(5)</u>
Subtotal	(14)	(103)	(117)	0	(4)	(4)	(121)
Entitled as at 31 March 2005	439	5,835	6,274	95	888	983	7,257

Includes 128 former active members as at 31 March 2005 whose pension benefits are deferred to age 60. Includes re-enrolments in the regular force and transfers to other Superannuation plans.

# Pension Plan for the **CANADIAN FORCES**as at 31 March 2005



**Table 13** Reconciliation of Survivors

	<u>Widows</u>	Widowers	<u>Total</u>	Children Under 18	Students 18 to 24	<u>Total</u>
Entitled as at 31 March 2002	20,436	53	20,489	412	422	834
Data corrections	265	4	269	(109)	(236)	(345)
New entitlements	3,642	19	3,661	122	28	150
Terminations	(2,004)	<u>(2)</u>	(2,006)	<u>(2)</u>	<u>0</u>	<u>(2)</u>
Entitled as at 31 March 2005	22,339	74	22,413	423	214	637

# Appendix 6 - CFSA Valuation Methodology

# A. Plan Assets

## 1. Superannuation Account

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

The only other Account-related asset consists of the discounted value of future member contributions and government credits in respect of prior service elections and leave without pay service (\$58.0 million). The discounted value of the future contributions and credits was calculated using the projected Account yields.

### 2. Pension Fund

For valuation purposes, an adjusted market value method has been used to determine the actuarial value of the Pension Fund assets. Under this method, the difference between the investment returns during a given plan year and the expected investment returns for that year based on the previous report assumptions, subject to a 10% corridor, is spread over five years.

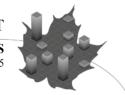
As a result the actuarial value of assets is a five-year smoothed market value where the appreciation of investment gains or losses is recognized at the rate of 20% per year. The value produced by this method is related to the market value of the assets, but is more stable than the market value. The actuarial value of the assets determined under the adjusted market value method is \$3,974.3 million as at 31 March 2005. This value was determined as follows:

**Table 14** Actuarial Value of Pension Fund Assets As at 31 March 2005 (\$ millions)

Plan Year	2001	2002	2003	2004	2005	
Actual net investment return	(48.6)	29.6	(200.1)	516.5	271.3	
Expected investment return	4.8	56.9	104.9	133.8	213.4	
Investment gains (losses)	(53.4)	(27.3)	(305.0)	382.7	57.9	
Less 10% corridor	0.0	0.0	(131.1)	0.0	0.0	
Investment gains (losses) to be amortized	(53.4)	(27.3)	(173.9)	382.7	57.9	
Unrecognized percentage	0%	20%	40%	60%	80%	
Unrecognized investment gains (losses)	-	(5.5)	(69.6)	229.6	46.3	
Market value as at 31 March 2005						4,050.2
Plus						
Present value of prior service contributions						125.0
Less						
Unrecognized investment gains (losses)						200.9
Actuarial value as at 31 March 2005						3,974.3

#### Pension Plan for the **CANADIAN FORCES**

as at 31 March 2005



The only other Fund-related asset consists of the discounted value of future member contributions and government credits in respect of prior service elections and leave without pay service. The discounted value of future member contributions and government credits was calculated using the assumed yield on the Pension Fund.

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

To determine the CFSA normal costs and liabilities, the cost effect of the yearly maximum salary cap and other benefit limits under the *Income Tax Act* described in Appendix 3 were taken into account.

### 1. Normal Costs

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

### 2. Liabilities

### a) Active Members

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

### b) Pensioners and Survivors

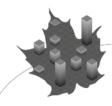
Consistent with accepted actuarial practice and standards, the liabilities as at the valuation date in respect of pensioners (including deferred annuitants) and survivors correspond to the value, using the relevant projected yields on the Account and the Fund described below and shown in Appendix 7,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

### C. Projected Yields

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

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

- the combined notional bond portfolio of the three Accounts as at the valuation date;
- the assumed future new money interest rates (also shown in Appendix 7);



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- the expected future benefits payable in respect of all pension entitlements accrued up to 31 March 2005;
- the expected future contributions for prior service elections and leave without pay, and
- the expected future administrative expenses,

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

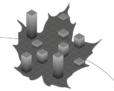
The projected yields (shown in Appendix 7) assumed in computing the present value of the benefits accrued or accruing under the Pension Fund (i.e. the Fund liabilities and the normal cost) were developed on the basis of the Fund holding a diversified mixture of assets.

# D. Membership Data

For valuation purposes, individual data on each member were used. The member data shown in Appendix 5 and Appendix 13 were provided as at 31 March 2005. This valuation is based on the member data as at the valuation date.

#### Pension Plan for the **CANADIAN FORCES**

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# **Appendix 7 – CFSA Actuarial Assumptions**

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

# A. Economic Assumptions

# 1. Key Economic Assumptions

The following key economic assumptions are required for valuation purposes.

# a) Level of Inflation

Price increases, as measured by changes in the Consumer Price Index, tend to fluctuate from year to year. Based on historical trends, the renewed commitment of the Bank of Canada and the government to keep inflation between 1% and 3% until 2006 and long-term economic forecasts, an ultimate rate of price increase of 2.5% was assumed for 2012 and thereafter. Recognizing recent experience, the rate of price increase is to increase from 1.9% for plan year 2007 to 2.5% for plan year 2012. In the previous valuation the ultimate rate of price increase was assumed to be 2.7%.

### b) Real Increases in Average Earnings

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

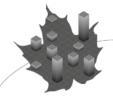
The assumed ultimate productivity rate was 1.0% per annum. This is closer to the average Canadian experience of the past 50 years (1.07% per annum) than that of the past 25 years (0.0% per annum). Real increases in average earnings were assumed to rise gradually over a 7-year select period to reach the ultimate 1.0% per annum in plan year 2013. In the previous valuation an ultimate productivity rate of 0.9% was

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

Recognizing recent experience, the real rate of return on long-term Government of Canada bonds was assumed at 2.46% for plan year 2006, the ultimate real rate was then assumed at 2.85% per annum attained in 2015. It is based on historical trends. In the previous valuation, it was 3.0%.

### d) Real Rate of Return on Fund

For the assets invested by the Public Sector Pension Investment Board (PSPIB), it is assumed that the real rate of return on investments will be 4.3% net of investment expenses (the ultimate level of inflation being 2.5%). The assumed long-term real



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rate of return on PSPIB assets takes into account the distribution of investments by category. It is unchanged from the previous valuation.

Note that all of the real rates of return presented in this report are actually real-return differentials, i.e., the difference between the effective annual rate of return on investments and the rate of increase in prices. This differs from the technical definition of the real rate of return, which, in the case of the ultimate Fund assumption, would be 4.2% (derived from 1.068/1.025) rather than 4.3%.

For the period ending December 2004, the following table was prepared based on the Canadian Institute of Actuaries Report on Canadian Economic Statistics 1924-2004.

Period of Years Ending 2004	15	25	50
Level of Inflation	2.19%	3.79%	4.10%
Real Increases in Average Earnings <sup>1</sup>	(0.04%)	0.01%	1.07%
Real Return on Long-Term Canada Bonds <sup>1</sup>	7.98%	7.33%	2.92%
Average Real Return on Diversified Portfolios <sup>1</sup>	6.95%	6.95%	4.51%2

# 2. Derived Economic Assumptions

The following assumptions were derived from the key economic assumptions:

# a) Projected Yields on Superannuation Account

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

### b) Projected Yields on Pension Fund

These yields are derived from the assumed future level of inflation and the real return on the Fund. These yields are required for the computation of present values of benefits to determine the Fund liabilities and the normal costs. The assumed yield of 6.3% per annum for plan year 2007 is assumed to increase gradually to 6.8% per annum by plan year 2013. The assumed yield is net of investment expenses incurred by the Pension Fund.

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

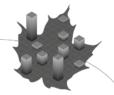
The YMPE is involved in the valuation process because the plan is integrated with the Canada Pension Plan. The assumed increase in the YMPE for a given year was derived, in accordance with the *Canada Pension Plan*, to correspond to the increase in the assumed Industrial Aggregate of Average Weekly Earnings (IAAWE) over successive 12-month periods ending on 30 June. The IAAWE is deemed to include a component for seniority and promotional increases; consequently the ultimate increase in the YMPE is assumed to be 0.2% higher than the corresponding increase in average pensionable earnings.

These real rates are calculated after the level of inflation is removed geometrically.

This average is over the last 45 years.

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# d) Maximum Pensionable Earnings

Because the plan is integrated with the Canada Pension Plan, the tax-related maximum pensionable earnings were derived from both the maximum annual pension accrual under a registered defined benefit plan and the YMPE. The maximum annual pension accrual of \$2,000 for calendar years 2005 will increase to \$2,111 for 2006, \$2,222 for 2007, \$2,333 for 2008 and \$2,444 for 2009 in accordance with the 2005 Federal Budget; thereafter, the maximum annual pension accrual is assumed to increase in accordance with the assumed increase in the Industrial Aggregate.

### e) Increase in Pension Indexing Factor

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

# f) Transfer Value Real Interest Rate

In accordance with the Standard of Practice for Determining Pension Commuted Values, effective 1 February 2005, published by the Canadian Institute of Actuaries, the real interest rates to be used for the computation of commuted values as of a particular date are as follows:

First 10 years:  $r_7 + 0.50\%$ 

After 10 years:  $r_L + 0.5 \times (r_L - r_7) + 0.50\%$ 

Where  $r_7 = r_L \times (i_7/i_L)$ 

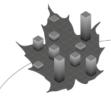
r<sub>L</sub> is the long-term real return Government of Canada bond yield,

i<sub>L</sub> is the long-term Government of Canada benchmark bond yield, and

i<sub>7</sub> is the 7-year Government of Canada benchmark bond yield<sup>1</sup>.

For plan year 2006, the real rates of interest to be used for the computation of commuted values are 2.75% for the first 10 years and 3.00% after 10 years. It was derived from the assumed 2006 CPI increase and the assumed 2006 long-term Government of Canada benchmark bond yield which corresponds to the new money rate in this valuation.

It was deemed equal to 90% of the long-term Government of Canada benchmark bond yield.



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# 3. Summary of Key and Derived Economic Assumptions

**Economic Assumptions** Table 15

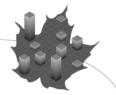
(Percentage)<sup>1</sup>

	Inf	lation	Eı	nployment	Earning Increa	Interest			
Plan Year	CPI Increase	Pension Indexing <sup>2</sup>	Industrial Aggregate	$YMPE^2$	Average Pensionable Earnings <sup>2,3</sup>	Maximum Pensionable Earnings <sup>2,4</sup>	New Money Rate	Yield on Account	Yield on Fund
2006	2.2	2.2	2.7	2.4	2.4	5.6	4.66	7.83	6.5
2007	1.9	2.0	3.0	2.6	2.3	5.3	4.50	7.59	6.3
2008	2.1	2.0	3.1	2.8	2.5	5.0	4.54	7.36	6.3
2009	2.1	2.1	3.4	3.0	2.7	4.8	4.68	7.11	6.4
2010	2.3	2.2	3.4	3.2	2.9	3.2	4.82	6.90	6.5
2011	2.3	2.3	3.7	3.4	3.1	3.4	4.96	6.68	6.6
2012	2.4	2.4	3.7	3.6	3.3	3.6	5.10	6.26	6.7
2013	2.5	2.5	3.7	3.7	3.5	3.7	5.24	6.07	6.8
2014	2.5	2.5	3.7	3.7	3.5	3.7	5.28	5.92	6.8
2015	2.5	2.5	3.7	3.7	3.5	3.7	5.32	5.77	6.8
2016	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.57	6.8
2017	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.41	6.8
2018	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.30	6.8
2019	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.26	6.8
2020	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.24	6.8
2021	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.19	6.8
2022	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.17	6.8
2023	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.15	6.8
2024	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.14	6.8
2025	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.13	6.8
2026	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.15	6.8
2027	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.19	6.8
2028	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.24	6.8
2029	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.29	6.8
2030	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.33	6.8
2031	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.35	6.8
2032	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.35	6.8
2033	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.35	6.8
2034	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.35	6.8
2035+	2.5	2.5	3.7	3.7	3.5	3.7	5.35	5.35	6.8

Bold figures denote actual experience. Assumed to be effective as at 1 January. Exclusive of seniority and promotional increases. Calendar year 2005 Maximum Pensionable Earnings was \$114,400.

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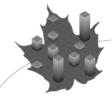


# B. Demographic Assumptions

# 1. Termination of Service

Except where otherwise noted, all demographic assumptions were determined from the plan's own experience as was done in the past. Where applicable, assumptions of the previous valuation were updated to reflect the available valuation experience of April 2002 to March 2005. Assumptions related to causes of termination of service are described in the following table:

Termination Cause	Rate Basis	Comments			
Torminations			e experience data of the 2003-2005 plan from the previous valuation as follows:		
Terminations (withdrawals		Male Officers	- 15% decrease		
or retirement), other than for	Service,	Male Other Ranks	- 15% decrease		
disability, with		Female Officers	- 19% decrease	Table 33	
less than 20 (or 25) years of		Female Other Ranks	- 25% decrease		
service		Termination rates for duration termination rate of duration 18			
			e experience data of the 2003-2005 plan from the previous valuation as follows:		
Pensionable	Service, Rank	Officers	- 6% decrease		
termination with 20 (or 25)		Other Ranks	- 11% increase	Table 35	
or more years of service		an IE20 were applied to membinereased substantially at dura	e at durations last 24 and 25 for those on pers on an IE25 but these rates were tion 24, and to a lesser extent to duration al five years delay required to be eligible		
		Rates for disability releases 3A	A (any occupation) were not modified.		
Disability	Age,	Disability releases 3B (own or experience data of the 2003-20 from the previous valuation as	ecupation). Giving full credibility to the 005 plan years, the rates were modified a follows:	Table 37	
•	Rank, Sex	Male Officers	- 18% increase	n.	
		Male Other Ranks	- 42% increase		
		Female	- 1% increase	•	
Mortality	Age, Rank,		e experience data of the 2003-2005 plan from the previous valuation as follows:		
	Sex, Year	Male Officers	- 15% decrease (ages 30 to 60)	Table 38	
		Male Other Ranks	- 11% decrease (ages 30 to 60)	•	
		Female	- 4% decrease (ages 30 to 60)		



Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

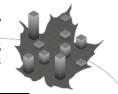
The mortality improvement assumption from the actuarial report on the Canada Pension Plan as at 31 December 2003 was used for valuation purposes. The mortality improvements are lower than those used in the previous valuation. These ultimate rates of improvement were established by adjusting the results of a detailed study prepared by the Social Security Administration in the United States. The adjustments are to reflect, in part, historical differences between Canada and the United States. Rates of improvement for the period 2002 to 2006 are assumed to be equal to those experienced over the period 1991 to 2001 and then gradually reduce to their ultimate levels by 2026.

Table 40

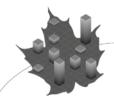
# 2. Assumptions related to benefits

Benefit	Related Assumptions	Rate Basis	Comments	
		Age,	Giving partial credibility to the experience data of the 2003-2005 plan years, the rates were modified from the previous valuation as follows:	
	Mortality	Rank,	Male Officers - 12% decrease (ages 30 to 80)	Table 38
		Sex, Year	Male Other Ranks - 9% decrease (ages 30 to 80)	'
			Female - 4% decrease (ages 30 to 80)	
			Longevity improvements as mortality in service.	Table 40
Pension	Proportion of active members with 10 to 19 years of service electing an immediate annuity	Service, Rank	Giving partial credibility to the experience data of the 2003-2005 plan years, the overall proportions of members electing an immediate annuity were increase substantially. There were fewer terminations at these durations (10 to 19) but terminating members opted generally in favour of the reduced annuity instead of the return of contributions.	Table 34
	Reduction factors applicable to immediate annuity for active members terminating with 20 or more years of service	Service, Rank	On the basis of the experience data of the 2003-2005 plan years, the reduction factors were changed marginally from the previous report. Less members saw their annuity benefit reduced as compared to the previous valuation report experience.	Table 36
Disability pension	Disabled life mortality (3A release)	Age, Rank Sex, Year	On the basis of the experience data of the 2003-2005 plan years, the mortality rates were unchanged from the previous report for Male Officers and Female members. The mortality rates for Male Other Ranks were marginally increased (6% on average) at ages 55 to 90 to partially reflect the experience data of the 2003-2005 plan years.	Table 39
			Longevity improvements as mortality in service.	Table 40

# Pension Plan for the **CANADIAN FORCES** as at 31 March 2005



Benefit	Related Assumptions	Rate Basis	Comments	
			Canada Pension Plan/ Disability benefit payable immediately.	
Disability pension	Disabled life mortality (3B release)	Age, Rank Sex, Year	These members have been released under cause 3B, and are unable to perform the duties of their own occupations. The mortality assumption for these pensioners is set equal to the mortality assumption of healthy pensioners.	Table 38
pension			Longevity improvements as mortality in service.	Table 40
			Canada Pension Plan/ Retirement benefit deferred to age 65.	
	of member Age, Sex		Giving partial credibility to experience data of the 2003-2005 plan years, the male probabilities were marginally decreased by 3% between the ages of 25 to 80. The proportions were increased on average by 20% above 80 years of age with the highest percentage increase occurring at ages 95 and above. The female probabilities remained unchanged from the previous report.	Table 41
Surviving spouse annual allowance			Giving partial credibility to the experience data of the 2003-2005 plan years, the spouse average age was assumed to be the same as male members below age 40, representing a one year increase whereas the average age of a female spouse was unchanged from the previous report.	
	Spouse mortality	Member's Age, Sex, Year	On the basis of the plan's experience, the rates assumed in the previous valuation for 2002 were maintained for most ages except at ages between 55 and 90 for female spouses. The overall change in rates was however less than 0.1%. The rates for male spouse remained unchanged from the previous valuation but projected three years to account for longevity improvements from 2002 to 2005.	Table 38
			Longevity improvements as mortality in service.	Table 40
	Average number of children at death of member	Member's Age, Sex	No change in rates from the previous valuation.	
children annual	Average age of children at death of member  Member's Age, Sex		No change in rates from the previous valuation.	Table 42
	Proportion of children remaining eligible for allowances over age 17	Age of Child	No change in rates from the previous valuation.	



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# 3. Other Demographic Assumptions

Considering their negligible effect on liabilities and normal costs, the following rates were assumed to be zero:

- disability incidence rates for non-disabled pensioners; and
- recovery rates for disabled pensioners.

# a) Seniority and Promotional Salary Increases

The assumed rates of both Officers and Other Ranks were revised on the experience for plan years 2003 to 2005. The assumed rates for Officers were decreased by approximately 0.25% while the Other Ranks were increased by approximately 1.25%.

# b) New Active Members

It was assumed that the distribution of new members by age, sex and initial salary rate would be the same as that of members with less than one year of service at the valuation date. Initial salary is assumed to increase in future plan years in accordance with the increase in the average pensionable earnings. It was assumed that the number of new active members would be such that the total number of active plan members would increase as follows:

Plan Year	Increase in the Total Active Member Population
2005	1.78%
2006	2.39%
2007	1.71%
2008	1.68%
2009	1.66%
2010+	0.00%

### c) Sex of Surviving Spouses

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

# 4. Other Assumptions

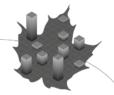
### a) Pension Benefits Division / Optional Survivor Benefit / Leave Without Pay

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

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

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### b) Minimum Post-retirement Death Benefit

This valuation does not take into account the minimum death benefit, described in Note 18 of Appendix 2, in respect of deaths occurring after retirement. The resulting understatement of accrued liability and normal cost is not material because a majority of the relatively few pensioners who die in the early years of retirement do leave an eligible survivor.

# c) Administrative Expenses

It is estimated that administrative expenses will be 0.35% of pensionable payroll, the same assumption as in the previous valuation. In plan year 2006, the Account is assumed to be charged with 88% of the total expenses, reducing by 2% each year thereafter.

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

### d) Funding of Elected Prior Service and Leave Without Pay Service

The assumed future government credits in respect of prior service elections and leave without pay service vary according to the vehicle (i.e. Account or Fund) into which the contributions are deposited. The government contributes 1.2 times as much as the resulting member contributions made to the Superannuation Account. Government credits to the Pension Fund in respect of elected prior service are as described for current service.

# e) Outstanding Terminations

Payments owing to former active members as at 31 March 2005 were ignored in this valuation. The consequent understatement of liability is negligible because there were very few such cases and the average amounts owing were modest.

# **Appendix 8 – RCA Valuation Methodology and Assumptions**

### A. Valuation of Assets

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

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

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

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

# 1. Terminally Funded RCA Pre-retirement Survivor Benefits

These benefits are terminally funded (i.e. not pre-funded but on an occurrence basis) because they are uncommon or of little financial significance. The pre-retirement survivor benefit becomes payable only when the average salary is less than 1.4 times the YMPE

### 2. RCA Post-retirement Survivor Benefits

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

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

# 3. Excess Pensionable Earnings

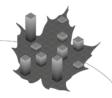
The projected accrued benefit cost method was used to estimate plan liabilities and normal costs for benefits in excess of the Maximum Pensionable Earnings (MPE).

In the previous RCA valuation report, members (officers) expected to terminate with salaries in excess of the MPE were divided into specialists (doctors, dentists, etc.) and non-specialists. The specialists, who represent close to 70% of the RCA liabilities, are valued using the actuarial assumptions described in Appendix 7, as was the case in the previous RCA valuation.

In the previous RCA valuation report, the methodology used to value the non-specialists consisted of the creation of a fast-trackers population that were expected to exceed the

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maximum pensionable earnings. The methodology also involved modifications to the termination and retirement assumptions as well as the removal of the seniority and promotional salary increases. In this valuation, tests have shown that a higher liability resulted when the non-specialists were valued using the same methodology as specialists. Consequently, non-specialists are valued without any modifications to the actuarial assumptions described in Appendix 7.

# 4. Administrative Expenses

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

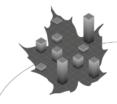
### C. Actuarial Assumptions

The valuation economic assumptions described in Appendix 7 were used without any modifications, except that the interest discount rate used to determine the present value of the RCA liabilities and normal cost is one-half of the yield projected on the combined Superannuation Accounts.

#### D. Valuation Data

The RCA pension benefits in payment were provided as at 31 March 2005. RCA benefits expected to be paid in respect of active members and accrued spousal allowances of current retired members were all derived from the membership data described in Appendix 5 and shown in Appendix 13.

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# **Appendix 9 – Superannuation Account Projection**

Until 31 March 2000, the CFSA was entirely financed through the Canadian Forces Superannuation Account. The Account is now charged only with benefit payments made in respect of service earned before 1 April 2000 and administrative expenses; it is credited with prior service and leave without pay contributions made for elections made prior to 1 April 2000 and interest earnings. The legislation allows maintaining the Account balance equal to 110% of the liabilities at the end of the period.

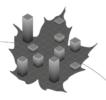
The results of the following projection were computed using the assets described in Appendix 4, the data described in Appendix 5, the methodology described in Appendix 6, and the assumptions described in Appendix 7. The projection shows the expected development of the Superannuation Account if all assumptions are realized. Emerging experience, differing from the corresponding assumptions, will result in gains or losses to be revealed in subsequent reports.

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

Plan Year	Beginning Account Balance	Beginning Liabilities	Beginning Actuarial Excess	Actuarial Excess Reduction <sup>1</sup>	Payments <sup>2</sup>	Interest Earnings
2006	41,409	38,420	2,989	0	2,096	3,163
2007	42,476	39,253	3,223	0	2,153	3,142
2008	43,465	39,998	3,467	0	2,208	3,118
2009	44,376	40,653	3,723	0	2,256	3,078
2010	45,198	41,209	3,989	98	2,304	3,038
2011	45,834	41,668	4,167	244	2,353	2,983
2012	46,221	42,019	4,202	246	2,399	2,822
2013	46,397	42,179	4,218	252	2,439	2,744
2014	46,450	42,227	4,223	255	2,480	2,677
2015	46,392	42,175	4,217	259	2,516	2,604
2020	44,281	40,256	4,026	276	2,682	2,252
2025	40,062	36,420	3,642	278	2,715	1,986
2030	34,862	31,693	3,169	265	2,581	1,790
2035	29,451	26,774	2,677	245	2,388	1,513
2040	23,775	21,614	2,161	220	2,146	1,215
2045	18,040	16,400	1,640	190	1,852	916
2050	12,604	11,458	1,146	153	1,492	635

<sup>2</sup> Include administrative expenses.

The actuarial excess reduction is calculated using the liabilities and Account balance at the end of the plan year.



# **Appendix 10 – Pension Fund Projection**

Starting 1 April 2000, the CFSA is entirely financed through the CFSA Pension Fund. The Fund is credited with government and employee contributions, investment earnings and with prior service contributions for elections related to service post 31 March 2000. The Fund is charged with benefit payments made in respect of service earned after 31 March 2000 and administrative expenses.

The results of the following projection were computed using the assets described in Appendix 4, the data described in Appendix 5, the methodology described in Appendix 6, and the assumptions described in Appendix 7. The projection shows the expected development of the Pension Fund if all assumptions are realized. Emerging experience, differing from the corresponding assumptions, will result in gains or losses to be revealed in subsequent reports.

**Table 17 Pension Fund Projection**<sup>1</sup> (\$ millions)

	\$ millions)				
Plan Year	Beginning Market Value <sup>2</sup>	Beginning Liabilities	Current Services Cost	Payments <sup>3</sup>	Investment Earnings
2006	4,280	4,280	800	59	302
2007	5,324	5,324	828	82	359
2008	6,429	6,429	856	122	428
2009	7,629	7,629	882	158	511
2010	8,908	8,908	912	197	602
2011	10,272	10,272	939	238	701
2012	11,720	11,720	965	287	808
2013	13,256	13,256	995	339	923
2014	14,888	14,888	1,028	393	1,034
2015	16,609	16,609	1,063	454	1,150
2020	26,650	26,650	1,271	830	1,827
2025	39,349	39,349	1,529	1,350	2,682
2030	55,256	55,256	1,894	1,947	3,756
2035	75,430	75,430	2,262	2,874	5,109
2040	99,070	99,070	2,658	4,172	6,686
2045	125,738	125,738	3,112	5,813	8,460
2050	155,456	155,456	3,695	7,610	10,440

For simplicity, expected special payments were not included in the projection.

For projection purposes, the market value used is set equal to the beginning liability. As at 31 March 2005, the corresponding market value was \$4,175 million. This amount includes the present value of prior service contributions of \$125 million.

Include administrative expenses.

# Appendix 11 – Investment Risk of a Diversified Portfolio

# A. Investing in Risky Assets

Since 1 April 2000, the CFSA Pension Plan contributions from government and employees are invested in capital markets through the PSPIB. Although the actual investment policy is appropriate, it is nonetheless useful to examine the impact of alternative investment policies on plan assets. Assets, in Appendix 11 and Appendix 12, refer solely to the post-2000 service where corresponding contributions are invested in capital markets.

A major risk a plan faces is funding risk - the risk that the assets backing the liabilities are insufficient to meet the pension obligations. If funding deficiencies or surpluses continue for an extended period of time, risk is transferred from one generation to another and may ultimately take the form of an increase or a decrease in the contribution rate.

The CFSA Pension Plan is inflation indexed, meaning that benefits increase in line with the CPI in order to maintain their purchasing power. From a risk point of view, the Plan's funds would be invested only in securities that exhibit high risk-free real returns in excess of the CPI. However, only the Government of Canada Long-Term Real Return Bond guarantees a risk-free inflation protected return. The yield on this bond was 1.73% as at 31 August 2005. This is well below the required real return on assets of 4.3% that is needed to sustain the plan at the current contribution rate.

By investing solely in risk-free real return bonds, all funding risk could be eliminated with an excessive cost and then at the detriment of current and future active members, who will have to contribute more unless benefits were decreased. If the PSPIB were to switch from the current portfolio of fixed and variable income securities to a portfolio that consists of only long-term Government of Canada bonds, the normal cost of the Plan would have to increase substantially in order to maintain the current funding status or benefits would have to be reduced. Neither of these is a desirable option. The following table shows the impact that various asset mixes would have on the normal cost and the funding ratio. Portfolio #1 is invested in long-term real return federal bonds only and its rate of return corresponds to the bond yield as at August 2005. Portfolio #2 is invested in long-term federal bonds assuming the ultimate assumption is attained in 2015. Both portfolio #1 and #2 do not result in feasible scenarios due to their prohibitive cost. Bonds in portfolios #3 to #6 are an actively managed bond mix and their respective rates of return are long-term ultimate assumptions used for 2015 and years thereafter.

s at 31 March 2005



**Table 18** Investment Policy Impact on Plan Funding

	Asset Mix		Ultimate	Plan Funded	Required Normal	
	Fixed Income	Variable Income	Real Rate of Return	Ratio as at 31 March 2005	Cost to Maintain Full Funding	
Portfolio #1	100%	0%	1.73%	52%	42.07%	
Portfolio #2	100%	0%	2.85%	68%	31.47%	
Portfolio #3	100%	0%	3.40%	78%	27.08%	
Portfolio #4	75%	25%	3.70%	82%	25.72%	
Portfolio #5	50%	50%	4.00%	87%	24.04%	
Actual Investment Policy	30%	70%	4.30%	93%	22.50%	
Portfolio #6	0%	100%	4.70%	101%	20.67%	

The Government created the PSPIB to invest the Plans' contributions in excess of benefits with the purpose of maximizing investment returns without undue risk. The normal cost is then less than it would have been if the investment policy has been restricted to long-term government bonds. Diversifying the portfolio into a mix of fixed and variable income securities accomplishes this. Thus, the Plan undertakes some risks in order to increase the probability of achieving the long-term investment target of CPI + 4.3%.

Funding risk can be reduced by investing in securities that offer a higher rate of return than risk-free real return bonds, but that also have a higher degree of risk or volatility. That is, funds can be invested in a mix of investments, such as equities and bonds, with the expected rate of return equal to the plan's funding requirements. By investing in riskier assets, investors hope to realize the equity risk premium as their reward for taking on additional risk. An equity risk premium is the difference between the expected return on the risky asset (equity) and the expected return on a risk-free asset, such as the Government of Canada Long-Term Real Return Bond mentioned above.

Of course, these higher returns are expected and not guaranteed, creating the very real possibility that the market will perform differently than expected and liabilities will grow at a faster or slower rate than investments for an extended period of time. This is known as market risk. Since investing solely in risk-free real return bonds will not produce a return sufficient to maintain the Plan at status quo, it is necessary to take market risk in order to increase the probability of earning a sufficient return. Even if investment returns materialize as expected, other assumptions may not, causing liabilities to grow at a different rate than the assets. An example of this is if salaries increase at a higher rate than expected. The amount of risk that the plan sponsor is willing to take depends on many factors, including the current funding status and economic outlook, among other things.

### B. Impact on Pension Fund of Investing in Riskier Assets

This section highlights in dollar value the impact of active asset management as opposed to investing in risk-free bonds only. The following table shows the impact of investment decisions on the plan assets. Specifically, the table shows in lines (A) to (D) the hypothetical value of the fund and of the investment earnings had the fund been invested entirely in

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long-term Government of Canada bonds throughout its life. Those figures are compared to the actual PSPIB results – lines (E) to (I) – to obtain the net value of the decision to invest in capital markets, in lines (J) and (K).

Even though investment earnings may not be positive each and every year, one can reasonably expect investment earnings above the risk-free rate to be positive in the long-term due to investment decisions, such as asset allocation in line (F) and active management in line (G). The cumulative net impact of investment decisions – line (K) in 2005 – being positive, it shows that over the last five years, it was more profitable for the plan to invest some funds in equities than investing solely in risk-free bonds.

**Table 19 Impact of Investment Decision on Plan Assets** As at 31 March 2005 (\$ millions)

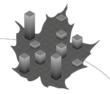
	Pension Fund						
	2001	2002	2003	2004	2005		
Hypothetical Risk-Free Portfolio (100% Government Long-Term Bonds)							
Fictitious Value of Assets, beginning of year (A)	-	656.1	1,366.4	2,159.5	3,014.4		
Net Contributions Less Disbursements (B)	637.7	652.7	696.4	722.9	772.0		
Return on Risk-Free Portfolio (C)	18.4	57.6	96.7	131.9	172.0		
Fictitious Value of Assets, end of year $(D) = (A)+(B)+(C)$	656.1	1,366.4	2,159.5	3,014.4	3,958.3		
Risky Assets Portfolio (PSPIB Actual Figures)							
Market Value of Assets, beginning of year (E)	-	589.0	1,271.4	1,767.7	3,007.0		
Net Contributions Less Disbursements (B)	637.7	652.7	696.4	722.9	772.0		
Return on Risky Assets Portfolio							
Selecting Fund's Actual Asset Allocation Policy (F)	(48.1)	31.0	(189.5)	495.4	242.9		
Active Management (over the benchmark) (G)	(0.6)	(1.3)	(10.6)	21.0	28.4		
Total Return on Risky Assets Portfolio $(H) = (F)+(G)$	(48.7)	29.7	(200.1)	516.4	271.3		
Market Value of Assets, end of year $(I) = (E)+(B)+(H)$	589.0	1,271.4	1,767.7	3,007.0	4,050.2		
<b>Net Impact of Investment Decisions</b>							
Annual $(J) = (H)-(C)$	(67.1)	(27.9)	(296.8)	384.5	99.3		
Cumulative $(K) = (I)-(D)$	(67.1)	(95.0)	(391.8)	(7.4)	92.0		
<b>Investment Actuarial Gains and Losses</b>							
Expected Investment Earnings <sup>1</sup> (L)	4.8	56.9	104.9	133.8	213.4		
Total Return on Risky Assets Portfolio (H)	(48.7)	29.7	(200.1)	516.4	271.3		
Gains/Losses							
Annual $(M) = (H)-(L)$	(53.5)	(27.2)	(305.0)	382.6	57.9		
Cumulative (N) = $(N)_{prior\ year} + (M)$	(53.5)	(80.7)	(385.7)	(3.1)	54.8		

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In 2005, the \$213.4 million is based on an expected nominal return of 6.3% (4.3% real plus 2% CPI).

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# Appendix 12 – Financial Economics Valuation Methodology and Assumptions

The 2000 to 2003 equity market debacle left many defined benefit pension plan in a deficit position. Finance professionals, including actuaries, now reassess the appropriateness of the traditional actuarial approach for funding. The financial economics (FE) approach received some publicity in the finance and actuarial literature. The purpose of this appendix is to describe the main principles of the FE approach and to show how much it would cost to implement it for the CFSA Pension Plan. As stated in Appendix 11, it refers solely to contributions invested in capital markets for the post-2000 service.

# A. Traditional Actuarial Approach

The valuation approach used in this report and by most actuaries is the traditional actuarial approach. It involves discounting the estimated future benefit payments using a valuation rate that reflects the expected rate of return on the plan's assets that are backing liabilities. In determining the appropriate valuation interest rate, consideration is given to the expected future real rates of return of each individual asset class and the evolution of the future asset mix. The valuation rate anticipates a positive equity risk premium over the long-term. The traditional approach recognizes that the capital markets are highly variable in the short-term but less variable over a longer time horizon. The focus of the traditional actuarial approach is to report a best estimate of pension liabilities and costs, with a particular emphasis on achieving a smooth pattern of contribution rates over the long term.

Over the last few years, some actuaries have expressed dissatisfaction with the traditional method mainly due to the use of a positive equity risk premium and a judgementally selected valuation rate that does not reflect the true value and nature of the liabilities. They have recommended adopting some of the principles of the financial economics approach. The next section describes, as an informative purpose, the fundamentals of the financial economic theory and its impact on pension funding. An illustration of what the normal cost of the CFSA pension plan would be with the financial economics valuation approach is shown in the following section. However, the traditional approach is considered to be the most appropriate method for funding public sector pension plans for the following reasons:

- it takes into account a positive equity risk premium,
- it focuses more on a smooth funding pattern than on liabilities,
- it incorporates future salary increases,
- it smoothes the volatile market value of assets, and
- there are no financial instruments available to properly apply the financial economic approach.

# **B.** Financial Economics Approach

The Financial Economics approach begins from the contention that pension plan liabilities are obligations that possess characteristics similar to bonds. This approach is described in actuarial literature as having five key principles which are described below.



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# 1. Key Principles

# a) One dollar of bonds has the same value as one dollar of equities

In current actuarial practice, plans sponsors anticipate an equity risk premium on investments without explicitly recognizing the risk that is being incurred. This principle contends that the present value (PV) of an expected cash flow must reflect both the expected return and risk. The PV of the equity risk is negative and it exactly offsets the PV of the expected future equity premium.

# b) A liability is measured by the value of a replicating portfolio whose cash flows match the liability in amount, timing, and probability of payment

Liabilities should be valued using discount rates tied to bond yields of appropriate quality and duration, rather than using a discount rate that reflects the expected return of assets backing the liabilities, as is the current practice. Thus, the current practice understates the true market value of the liabilities since a higher discount rate is used. Using a replicating bond portfolio to determine the appropriate valuation interest rate is not subjective, since it does not require judgement on the part of the actuary or plan sponsor.

# c) A fair trade of a marketed security must occur at market value

Smoothing techniques used in current actuarial practice create arbitrage opportunities. Also, the true volatility of pension accounting costs is disguised by smoothing asset and liability gains and losses over several years. For both funding and accounting purposes, the assets should be valued at market and continuously marked to market.

# d) All parties involved in financial transactions are entitled to full and complete current information on the market price of the relevant assets and liabilities

Financial disclosures must be based on current market values of assets and liabilities. Although mark-to-market measures would increase the year-to-year volatility of pension accounting costs, stakeholders or taxpayers in the case of public sector pension plans would be given a more realistic picture of pension performance.

# e) Risks are borne and rewards are earned by individuals and not by institutions

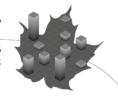
The pension promise is a transaction between principals – the company's shareholders and plan members – with executives, union representatives, regulators, board members, and the company itself simply acting as agents of these principals' interests. In the case of public pensions, such as the Public Sector Pension Plans, risks are borne by taxpayers and not by the Government. In general, it is assumed that the Government, acting as a representative of taxpayers, takes a long-term view of what is best for the Plans. This may be at the expense or benefit of taxpayers.

# 2. Implications for Pension Plans that Implement Financial Economics

The financial economics approach focuses on plan liabilities and not on annual cost or the smoothness of contribution rates over time, which are important in the traditional approach. FE ignores the future risk/reward expectations inherent in risky investments, such as equities. Instead, this approach recommends valuing pension liabilities with a

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reference portfolio composed entirely of bonds with properties similar to the plan's liabilities. No judgment from the actuary of the plan sponsor would be required to determine the valuation interest rate. If the theory of financial economics was implemented to value defined benefit pension plans, then one could expect higher pension costs than under the traditional methodology and a pattern of contributions that varies substantially as interest rates rise and fall and the shape of the yield curve changes.

The emphasis in financial economics is placed on current values, as determined by the market, and not on historical values or best estimates of future conditions. There is no smoothing of assets in financial economics. If the plan is fully funded and invested in a reference portfolio that matches the accrued liabilities, the only further funding required will be the normal cost. In other words if interest rates fall, the normal cost would increase substantially but no further contributions would be required to fund the accrued liabilities that are already matched by the replicated bond portfolio. Following this logic, future salary increases and possible future benefit improvements are not considered in the liabilities valuation and will be funded by the normal cost once they are realized.

With the FE approach, the plan is viewed as an integral part of the employer's financial structure. It allows the employer to consider its pension plan from a shareholders' point of view: taking less risk through its pension plan will allow it to take more risk in its operations and then increase returns for its shareholders. FE is then more appropriate as an accounting valuation (to reflect the market value of the liabilities) than as a funding valuation. Nonetheless, FE could also be useful in a public pension plan environment if governments would prefer reducing risk in their pension plans by paying more and therefore reducing the spending in other initiatives.

# 3. Hypothetical CFSA Pension Plan Normal Cost with Financial Economics Approach

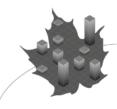
As an illustrative purpose, the following normal cost and liabilities are calculated as if the valuation approach were dictated by financial economics principles. However, there are some practical problems developing the reference portfolio because few bonds are available in the market with terms longer than 30 years. The long-term rate over 10 to 30 years is then used as an approximation of the longer-term rates over 30 to 80 years. The reference portfolio valuation rate corresponds to the long-term real return Government of Canada Bond Yield plus fifty basis points<sup>1</sup>, which results in a slightly lower interest rate than the one used for the computation of commuted values described in Appendix 7.

The reference portfolio is an attempt to properly value the liabilities and not a recommended asset mix policy. It allows measuring the liabilities without regard to the expected return of the invested assets. The results of the following projection were computed using the assets described in Appendix 4, the data described in Appendix 5, the methodology described in Appendix 6, and the assumptions described in Appendix 7

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To reflect that the reference portfolio could be invested in highly secure bonds other than federal bonds. As an example, provincial bonds yield has been historically higher than the Government of Canada Bond Yield by 40 basis points.



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with the exceptions that there is no seniority and promotional increases and no general economic increase.

Table 20 Normal Cost with Financial Economic Approach

-	F	inancial Econ	omics	_			
	<u>Norm</u>	nal Cost	Liabilities at			Real Disc	count Rate
		(% of	the Beginning		Funding	First	After
Plan		Pensionable	of the Year	Assets	Ratio	10 Years	10 Years
Year	(\$ millions)	Payroll)	(\$ millions)	(\$ millions)	(%)	(%)	(%)
2003	737	23.7	1,327	1,308	99	3.74	4.28
2004	841	26.6	2,136	1,802	84	3.11	3.55
2005	917	27.6	3,080	3,039	99	3.20	3.65
2006	974	27.3	5,012	4,189	84	2.71	3.08
2007	1,003	27.3	6,194	5,348	86	2.75	3.13
2008	1,041	27.4	7,429	6,558	88	2.79	3.17
2009	1,068	27.1	8,723	7,825	90	2.82	3.21
2010	1,099	26.8	10,082	9,153	91	2.86	3.25
2015	1,276	25.8	18,062	16,918	94	3.04	3.46

Note that the normal costs and liabilities shown in the table above were based on the 2002 valuation assumptions for plan years 2003 to 2005 and on the 2005 valuation assumptions for plan years 2006 to 2015. The assumptions used do not reflect the volatility of interest rates that might occur if the financial economics approach was chosen. For example, in the past ten years long-term real interest rates have varied from 1.5% to 5.0%. Such variations in real interest rates would have a significant impact on the normal costs from one year to the other. Under such an environment the active member of one year can be obligated to pay twice the amount paid in the prior year.

With the financial economics approach, the actuarial deficit, which is based on current low yield long-term bonds, would be much higher but with less investment risk for government and plan members.

#### 4. Actuarial Issues with Financial Economics

The financial economics approach is based on the belief that pension liabilities are similar to debt and that they can be modeled accurately using a debt model. However, if this is done, future benefits will be underestimated, which will lead to a plan being underfunded. When these costs are actually realized in the future, benefits will increase retroactively and will have to be paid by the current generation, causing inequity among generations.

Rather than the smooth funding pattern that has emerged with the traditional method, the financial economics method is likely to produce a funding pattern that increases initially and then decreases over time if actuarial gains emerge. This will lead to intergenerational inequity as the current generation of taxpayers and/or members will pay more than future generations. Proponents of traditional actuarial valuation see some flaws in the financial economics approach. First of all, duration in the debt model is

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incorrect since pension obligations in an ongoing plan could last as long as 90 years into the future for a current member or their beneficiary. No debt instrument exists with a term that long. Also, pension payments are not determined in advance due to variations over time of inflation, salary increases, retirement rates, death, disability, and many other factors. Benefit payments vary much more than debt. Finally, the main concern of the plan sponsor is the normal cost and not the liabilities, making the liability model and its results less significant to the sponsor.



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# Appendix 13 – Detailed Information on Membership Data

Table 21 **Male Officers** Number and Average Annual Pensionable Earnings<sup>1</sup> as at 31 March 2005

Age <sup>2</sup>	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	All Years of Service <sup>2</sup>
15.10	316								316
15-19	\$15,807								\$15,807
20.24	876	194							1,070
20-24	\$24,299	\$47,047							\$28,423
25.20	648	699	226						1,573
25-29	\$48,215	\$60,710	\$68,882						\$56,737
20.24	292	398	777	273					1,740
30-34	\$53,569	\$70,971	\$75,587	\$80,587					\$71,621
25.20	122	118	358	1,224	226				2,048
35-39	\$57,827	\$71,913	\$85,078	\$83,171	\$85,916				\$81,649
40.44	85	48	115	774	1,252	312			2,586
40-44	\$69,155	\$72,948	\$86,674	\$86,747	\$88,818	\$91,413			\$87,475
45.40	29	19	33	146	470	819	174		1,690
45-49	\$81,799	\$85,846	\$90,616	\$93,080	\$93,496	\$94,738	\$96,062		\$93,983
50-54	9	11	12	30	56	222	552	84	976
30-34	\$85,650	\$90,169	\$105,213	\$89,072	\$99,983	\$97,504	\$96,962	\$101,267	\$97,307
55-59	1	2	1	11	6	19	98	59	201
33-39	\$70,908	\$81,456	\$81,456	\$99,980	\$87,628	\$102,281	\$98,258	\$102,354	\$99,071
A 11. A cross	2,378	1,489	1,522	2,458	2,010	1,372	824	143	12,200
All Ages	\$37,558	\$63,521	\$78,225	\$84,746	\$89,893	\$94,534	\$96,926	\$101,716	\$75,116
		-							-

	31 March 2005	31 March 2002
Average age <sup>2</sup> :	37.1	36.7
Average pensionable service <sup>2</sup> :	15.3 years	15.3 years
Annualized pensionable payroll <sup>3</sup> :	\$901,510,074	\$778,839,456
Total PBDA <sup>4</sup> indexed reduction to basic annuity:	\$2,450,238	\$1,718,165
Total PBDA <sup>4</sup> indexed reduction adjustment:	\$510,896	\$368,182

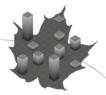
As defined in Note 1 of Appendix 2-D.

Expressed in completed years calculated at the beginning of the plan year.

The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

PBDA means the *Pension Benefits Division Act*.

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**Table 22** Male Other Ranks

Number and Average Annual Pensionable Earnings<sup>1</sup> as at 31 March 2005

Age <sup>2</sup>	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	All Years of Service <sup>2</sup>
15-19	642								642
13-19	\$31,064								\$31,064
20.24	5,397	268							5,665
20-24	\$39,309	\$49,503							\$39,791
25.20	3,470	2,780	224						6,474
25-29	\$42,222	\$50,836	\$52,562						\$46,279
20.24	1,216	1,867	2,568	1,021					6,672
30-34	\$42,825	\$51,540	\$53,338	\$54,407					\$51,082
25.20	430	449	1,289	5,663	674				8,505
35-39	\$43,562	\$51,197	\$53,452	\$55,348	\$58,009				\$54,457
40.44	191	132	276	2,295	5,031	880			8,805
40-44	\$43,464	\$50,849	\$52,605	\$55,287	\$58,732	\$62,039			\$57,523
45.40	57	30	39	132	895	2,140	366		3,659
45-49	\$42,160	\$52,122	\$51,991	\$53,964	\$58,219	\$63,863	\$68,401		\$62,018
50.54	13	6	18	9	41	277	688	81	1,133
50-54	\$46,237	\$50,346	\$54,566	\$56,333	\$55,880	\$62,719	\$68,507	\$72,113	\$66,223
55.50		1		1	5	7	30	38	83
55-59		\$52,440		\$77,892	\$60,113	\$62,974	\$65,989	\$71,530	\$68,041
A 11 A ~	11,416	5,533	4,414	9,121	6,646	3,304	1,084	119	41,638
All Ages	\$40,357	\$51,045	\$53,279	\$55,211	\$58,573	\$63,279	\$68,402	\$71,927	\$51,949

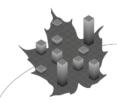
	31 March 2005	31 March 2002
Average age <sup>2</sup> :	34.7	34.5
Average pensionable service <sup>2</sup> :	13.0 years	13.4 years
Annualized pensionable payroll <sup>3</sup> :	\$2,154,401,910	\$1,870,125,091
Total PBDA <sup>4</sup> indexed reduction to basic annuity:	\$4,622,113	\$3,461,975
Total PBDA <sup>4</sup> indexed reduction adjustment:	\$1,401,474	\$1,068,047

As defined in Note 1 of Appendix 2-D.

Expressed in completed years calculated at the beginning of the plan year.

The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

PBDA means the Pension Benefits Division Act.



Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

Table 23 **Female Officers** 

Number and Average Annual Pensionable Earnings<sup>1</sup> as at 31 March 2005

Age <sup>2</sup>	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	All Years of Service <sup>2</sup>
15-19	98								98
13-19	\$15,743								\$15,743
20-24	273	78							351
20-24	\$23,739	\$47,450							\$29,008
25.20	127	221	63						411
25-29	\$48,807	\$61,596	\$68,929						\$58,768
20.24	79	88	177	36					380
30-34	\$56,561	\$72,846	\$73,545	\$79,156					\$70,384
35-39	35	28	66	155	18				302
33-39	\$63,905	\$71,323	\$85,586	\$83,765	\$82,059				\$80,606
40.44	27	14	23	108	118	10			300
40-44	\$59,558	\$78,779	\$84,119	\$89,883	\$84,897	\$93,756			\$84,362
45-49	6	1	9	30	56	47	5		154
43-49	\$70,234	\$61,620	\$89,106	\$94,505	\$93,554	\$91,844	\$102,090		\$92,119
50.54	2	1	1	5	8	29	19	1	66
50-54	\$61,590	\$156,704	\$75,276	\$95,078	\$106,612	\$93,779	\$96,580	\$81,456	\$95,750
55-59				1	3	5	6	2	17
33-39				\$81,456	\$89,448	\$83,278	\$101,925	\$93,312	\$92,021
A 11 A ccc	647	431	339	335	203	91	30	3	2,079
All Ages	\$35,672	\$62,744	\$76,167	\$86,366	\$87,957	\$92,200	\$98,567	\$89,360	\$64,620

	31 March 2005	31 March 2002
Average age <sup>2</sup> :	32.7	32.2
Average pensionable service <sup>2</sup> :	10.5 years	10.2 years
Annualized pensionable payroll <sup>3</sup> :	\$134,077,732	\$105,868,910
Total PBDA4 indexed reduction to basic annuity:	\$21,797	\$3,228
Total PBDA <sup>4</sup> indexed reduction adjustment:	\$3,589	\$722

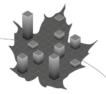
As defined in Note 1 of Appendix 2-D.

Expressed in completed years calculated at the beginning of the plan year.

The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

PBDA means the Pension Benefits Division Act.

as at 31 March 2005



**Table 24** Female Other Ranks

Number and Average Annual Pensionable Earnings<sup>1</sup> as at 31 March 2005

Age <sup>2</sup>	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	All Years of Service <sup>2</sup>
15 10	53								53
15-19	\$31,187								\$31,187
20.24	575	36							611
20-24	\$39,815	\$49,811							\$40,404
25.20	541	305	10						856
25-29	\$41,709	\$50,503	\$51,432						\$44,956
20.24	388	247	278	145					1,058
30-34	\$41,471	\$50,892	\$52,745	\$53,400					\$48,268
25.20	264	114	181	670	71				1,300
35-39	\$41,241	\$49,779	\$52,443	\$54,155	\$56,765				\$51,053
40.44	146	53	82	358	565	85			1,289
40-44	\$42,731	\$49,895	\$52,272	\$53,931	\$57,185	\$60,985			\$54,282
45.40	36	14	30	50	116	149	26		421
45-49	\$41,392	\$48,910	\$50,346	\$53,032	\$57,234	\$62,441	\$64,692		\$56,916
50.54	1	4	4	12	11	33	28	3	96
50-54	\$41,676	\$49,065	\$51,432	\$52,442	\$55,919	\$61,512	\$66,403	\$65,724	\$60,150
55.50						1	1		2
55-59						\$56,484	\$68,724		\$62,604
A 11 A -	2,004	773	585	1,235	763	268	55	3	5,686
All Ages	\$40,848	\$50,410	\$52,431	\$53,939	\$57,135	\$61,842	\$65,637	\$65,724	\$49,611
	-								

	31 March 2005	31 March 2002
Average age <sup>2</sup> :	34.9	34.4
Average pensionable service <sup>2</sup> :	11.0 years	11.5 years
Annualized pensionable payroll <sup>3</sup> :	\$281,891,429	\$229,084,075
Total PBDA <sup>4</sup> indexed reduction to basic annuity:	\$24,792	\$27,578
Total PBDA <sup>4</sup> indexed reduction adjustment:	\$7,855	\$8,790

As defined in Note 1 of Appendix 2-D.

Expressed in completed years calculated at the beginning of the plan year.

The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

<sup>&</sup>lt;sup>4</sup> PBDA means the *Pension Benefits Division Act*.



Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

Table 25 **Male Retirement Pensioners** 

Number and Total A	nnual Pension <sup>1</sup> as at 31 March 2005	
	Registered Plan	

			Registered Plan		Re	CA
$\underline{Age}^2$	<u>Number</u>	Pension Without <u>Indexing</u>	Pension With <u>Indexing</u>	Spouse <u>Allowance</u> <sup>3</sup>	<u>Pension</u>	Spouse <u>Allowance</u> <sup>3</sup>
25-29	3	\$53,250	-	\$38,362	\$1,441	\$768
30-34	37	364,127	-	234,051	-	-
35-39	359	4,678,579	-	2,844,041	-	5,302
40-44	4,259	72,710,412	-	42,001,862	65,844	37,744
45-49	6,838	127,013,243	-	75,275,913	164,053	88,772
50-54	5,791	129,282,282	-	77,524,567	77,985	40,942
55-59	8,797	70,703,108	\$171,507,024	137,506,919	158,778	81,182
60-64	9,614	-	285,739,435	147,620,694	37,979	18,989
65-69	10,311	-	232,669,648	140,412,654	-	-
70-74	10,033	-	219,056,851	125,356,140	-	-
75-79	6,620	-	145,405,314	79,269,948	-	-
80-84	4,953	-	117,013,272	61,126,107	-	-
85-89	2,047	-	45,421,665	23,131,996	-	-
90-94	396	-	8,007,964	4,019,730	-	-
95-99	31		523,288	261,644		
All Ages	70,089	\$404,805,001	\$1,225,344,461	\$916,624,628	\$506,080	\$273,699

	31 March 2005	31 March 2002
Average age <sup>2</sup> :	63.6	62.6
Average age <sup>2</sup> at retirement:	45.3	45.4
Total annual pensions payable from:		
CF Superannuation Account:	\$1,609,942,963	\$1,525,791,899
CF Pension Fund:	\$20,206,499	\$3,169,970

The total annual pension excludes 89 deferred annuities to age 60, includes PBDA reductions, and CPP offsets only if they are in effect at valuation date.

Expressed in completed years calculated at the beginning of the plan year.

The spouse allowance includes accrued indexation (even if not due) to 1 January 2005 and is still contingent on there being an eligible spouse.

as at 31 March 2005

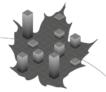


 Table 26
 Female Retirement Pensioners

Number and Total Annual Pension<sup>1</sup> as at 31 March 2005

			Registered Plan	l	R	CA
$\underline{\text{Age}}^2$	<u>Number</u>	Pension Without <u>Indexing</u>	Pension With <u>Indexing</u>	Spouse <u>Allowance</u> <sup>3</sup>	<u>Pension</u>	Spouse <u>Allowance</u> <sup>3</sup>
25-29	1	\$8,277	-	\$5,573	-	-
30-34	5	31,158	-	33,754	-	\$732
35-39	83	927,472	-	624,531	\$7,738	6,332
40-44	664	9,765,007	-	5,801,178	24,547	12,797
45-49	971	16,171,980	-	9,544,395	13,042	6,839
50-54	487	9,905,635	-	5,777,222	1,147	666
55-59	315	4,148,858	\$3,356,798	4,307,914	6,953	3,676
60-64	130	-	3,602,603	1,836,397	4,450	2,225
65-69	94	-	2,025,423	1,246,997	-	-
70-74	79	-	1,609,099	940,176	-	-
75-79	54	-	1,072,502	602,089	-	-
80-84	29	-	655,560	343,986	-	-
85-89	31	-	520,039	263,179	-	-
90-94	8	-	142,290	71,706	-	-
95-99	5		71,439	35,719		
All Ages	2,956	\$40,958,387	\$13,055,753	\$31,434,816	\$57,877	\$33,267

	31 March 2005	31 March 2002
Average age <sup>2</sup> :	50.9	49.2
Average age <sup>2</sup> at retirement:	41.4	41.1
Total annual pensions payable from:		
CF Superannuation Account:	\$51,953,158	\$41,870,459
CF Pension Fund:	\$2,060,982	\$293,092

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The total annual pension exclude 16 deferred annuities to age 60, includes PBDA reductions and CPP offsets only if they are in effect at valuation date.

<sup>&</sup>lt;sup>2</sup> Expressed in completed years calculated at the beginning of the plan year.

The spouse allowance includes accrued indexation (even if not due) to 1 January 2005 and is still contingent on there being an eligible spouse.



Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

**Table 27** Male Disability (3A) Pensioners
Number and Total Annual Pension<sup>1</sup> as at 31 March 2005

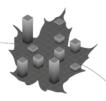
		Regist	ered Plan	F	RCA
		Pension With	Spouse		Spouse
$Age^2$	Number	<u>Indexing</u>	Allowance <sup>3</sup>	<b>Pension</b>	Allowance <sup>3</sup>
30-34	3	\$18,715	\$13,734	-	-
35-39	14	121,789	86,692	-	-
40-44	74	839,264	595,308	-	-
45-49	75	952,540	664,633	-	-
50-54	41	600,957	411,680	-	-
55-59	127	1,385,480	925,430	-	-
60-64	288	2,748,883	1,690,850	-	-
65-69	503	5,164,563	2,932,251	-	-
70-74	800	8,819,908	4,811,301	-	-
75-79	595	7,342,428	3,904,687	-	-
80-84	332	4,638,921	2,376,253	-	-
85-89	106	1,416,980	713,552	-	-
90-94	6	77,375	38,687	-	-
95-99	1	8,725	4,363	_	<u>-</u>
All Ages	2,965	\$34,136,528	\$19,169,421	-	-

	31 March 2005	31 March 2002
Average age <sup>2</sup> :	70.4	68.6
Average age <sup>2</sup> at retirement:	38.6	38.9
Total annual pensions payable from:		
CF Superannuation Account:	\$33,992,382	\$36,610,961
CF Pension Fund:	\$144,146	\$30,990

The total annual pension includes PBDA reductions, and CPP offsets only if they are in effect at valuation date.

Expressed in completed years calculated at the beginning of the plan year.

The spouse allowance includes accrued indexation (even if not due) to 1 January 2005, and is still contingent on there being an eligible spouse.



**Table 28** Female Disability (3A) Pensioners
Number and Total Annual Pension<sup>1</sup> as at 31 March 2005

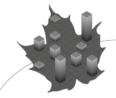
**RCA** Registered Plan Pension With Spouse Spouse Age<sup>2</sup> Number Indexing Allowance<sup>3</sup> Pension Allowance<sup>3</sup> 30-34 \$13,194 \$9,637 2 35-39 7 49,373 36,080 40-44 26 187,832 256,674 45-49 19 230,362 164,186 50-54 149,340 16 218,484 55-59 8 127,085 82,698 60-64 3 36,365 25,368 2 65-69 23,689 13,821 70-74 3 35,960 19,498 75-79 3 26,094 13,661 80-84 27,539 2 13,769 \_ 91 \$1,044,819 \$715,890 All Ages

	31 March 2005	31 March 2002
Average age <sup>2</sup> :	49.8	49.0
Average age <sup>2</sup> at retirement:	38.4	38.2
Total annual pensions payable from:		
CF Superannuation Account:	\$1,018,119	\$899,147
CF Pension Fund:	\$26,700	\$12,693

<sup>&</sup>lt;sup>1</sup> The total annual pension includes PBDA reductions, and CPP offsets only if they are in effect at valuation date.

Expressed in completed years calculated at the beginning of the plan year.

The spouse allowance includes accrued indexation (even if not due) to 1 January 2005 and is still contingent on there being an eligible spouse.



Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

**Table 29** Male Disability (3B) Pensioners
Number and Total Annual Pension<sup>1</sup> as at 31 March 2005

			Registered Plan		R	RCA
$\underline{Age}^2$	<u>Number</u>	Pension Without <u>Indexing</u>	Pension With <u>Indexing</u>	Spouse <u>Allowance</u> <sup>3</sup>	<u>Pension</u>	Spouse <u>Allowance</u> <sup>3</sup>
25-29	2	-	\$20,408	\$10,204	-	-
30-34	161	-	1,743,725	871,863	-	-
35-39	620	-	8,261,038	4,130,519	-	-
40-44	1,655	\$127,987	28,409,008	14,302,417	\$16,734	\$8,367
45-49	1,289	597,756	25,092,177	12,982,573	-	-
50-54	823	995,552	18,031,693	9,809,648	-	-
55-59	829	2,158,913	19,601,557	11,602,661	11,629	5,814
60-64	511	-	13,231,095	6,707,732	1,827	913
65-69	275	-	5,808,813	3,529,099	-	-
70-74	98	-	2,126,577	1,244,357	-	-
75-79	<u>11</u>		296,395	<u>171,585</u>		<del>_</del>
All Ages	6,274	\$3,880,208	\$122,622,486	\$65,362,658	\$30,190	\$15,094

	31 March 2005	31 March 2002
Average age <sup>2</sup> :	48.8	48.4
Average age <sup>2</sup> at retirement:	40.8	40.6
Total annual pensions payable from:  CF Superannuation Account:  CF Pension Fund:	\$119,271,331 \$7,231,363	\$81,395,581 \$809,763

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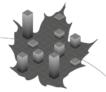
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The total annual pension includes PBDA reductions, and CPP offsets only if they are in effect at valuation date.

<sup>&</sup>lt;sup>2</sup> Expressed in completed years calculated at the beginning of the plan year.

The spouse allowance includes accrued indexation (even if not due) to 1 January 2005 and is still contingent on there being an eligible spouse.

as at 31 March 2005



**Table 30 Female Disability (3B) Pensioners**Number and Total Annual Pension<sup>1</sup> as at 31 March 2005

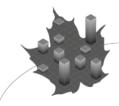
		Registered Plan			R	CA
$\underline{Age}^2$	<u>Number</u>	Pension Without <u>Indexing</u>	Pension With <u>Indexing</u>	Spouse <u>Allowance</u> <sup>3</sup>	<u>Pension</u>	Spouse <u>Allowance</u> <sup>3</sup>
25-29	4	-	\$47,273	\$23,636	-	-
30-34	45	-	501,810	250,905	-	-
35-39	142	-	1,884,155	942,077	-	-
40-44	337	\$35,409	5,437,808	2,742,972	-	-
45-49	281	112,737	5,143,486	2,654,034	-	-
50-54	116	81,355	2,408,847	1,270,909	-	-
55-59	48	54,140	1,143,672	616,301	\$1,253	\$627
60-64	8	-	201,975	100,988	-	-
65-69	2	<del>_</del>	59,040	36,584	<del>-</del>	
All Ages	983	\$283,641	\$16,828,066	\$8,638,406	\$1,253	\$627

	31 March 2005	31 March 2002
Average age <sup>2</sup> :	44.3	42.8
Average age <sup>2</sup> at retirement:	39.0	38.2
<u>Total annual pensions payable from:</u>		
CF Superannuation Account:	\$15,665,610	\$9,188,810
CF Pension Fund:	\$1,446,097	\$154,072

<sup>&</sup>lt;sup>1</sup> The total annual pension includes PBDA reductions, and CPP offsets only if they are in effect at valuation date.

Expressed in completed years calculated at the beginning of the plan year.

The spouse allowance includes accrued indexation (even if not due) to 1 January 2005 and is still contingent on there being an eligible spouse.



Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

Table 31 **Surviving Spouses** Number and Total Annual Allowance as at 31 March 2005

	Registe	ered Plan	RCA
		Pension With	Pension With
$\underline{\mathbf{Age}}^{1}$	Number <sup>2</sup>	<u>Indexing</u>	<u>Indexing</u>
25-29	8	\$76,679	\$430
30-34	28	160,702	768
35-39	81	528,310	1,686
40-44	201	1,442,068	2,867
45-49	302	2,811,601	2,883
50-54	480	4,965,064	2,185
55-59	909	10,001,735	1,447
60-64	1,588	17,365,017	2,123
65-69	2,634	27,428,287	42
70-74	3,739	37,398,054	9
75-79	4,330	44,183,629	-
80-84	4,734	48,862,887	-
85-89	2,329	23,195,912	-
90-94	676	6,283,119	-
95-99	93	707,457	-
100+	<u> </u>	57,403	<del>-</del>
All Ages	22,143	\$225,467,924	\$14,440

	31 March 2005	31 March 2002
Average age <sup>2</sup> :	74.3	72.4
Average age <sup>2</sup> at retirement:	60.6	59.5
Total annual pensions payable from:	\$205.29 <i>6</i> .12 <i>6</i>	¢190.026.017
CF Superannuation Account:	\$225,286,136	\$189,926,017
CF Pension Fund:	\$181,788	\$24,034

Expressed in completed years calculated at the beginning of the plan year. 74 of the surviving spouses are widowers.



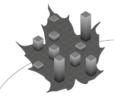
# **Appendix 14 – Detailed Demographic Assumptions**

**Table 32** Assumed Seniority and Promotional Salary Increases (percentage)

Service <sup>1</sup>	Officer	Other Rank	Service <sup>1</sup>	Officer	Other Rank
0	7.0	17.5	20	1.4	1.0
1	7.0	17.0	21	1.4	1.0
2	13.0	8.0	22	1.2	1.0
3	30.0	9.0	23	1.1	1.0
4	18.0	4.7	24	1.0	1.0
5	7.0	3.0	25	0.9	1.0
6	9.0	2.1	26	0.8	0.9
7	7.4	1.7	27	0.7	0.9
8	5.5	1.3	28	0.7	0.9
9	4.5	1.1	29	0.6	0.8
10	3.9	0.9	30	0.6	0.7
11	3.4	0.8	31	0.6	0.6
12	3.1	0.8	32	0.5	0.5
13	2.7	0.8	33	0.5	0.4
14	2.4	0.8	34	0.7	0.4
15	2.1	0.9	35	0.9	0.3
16	1.9	0.9	36	0.7	0.3
17	1.8	0.9	37	0.4	0.2
18	1.7	0.9	38	0.3	0.2
19	1.5	0.9	39+	0.0	0.0

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Expressed in completed years calculated at the beginning of the plan year.



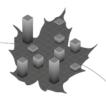
Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

**Table 33** Assumed Rates of Termination
Active Members With Less Than 19 Years of Service (per 1,000 individuals)

	Intern	Intermediate Engagement of 20 Years				nediate Enga	gement of 2	25 years
	Off	icers	Other	Ranks	Off	<u>icers</u>	Other	Ranks
Service <sup>1</sup>	Male	<u>Female</u>	Male	<u>Female</u>	Male	<u>Female</u>	Male	<u>Female</u>
0	58	74	41	38	58	74	41	38
1	53	51	33	32	53	51	33	32
2	46	39	105	82	46	39	105	82
3	31	34	50	50	31	34	50	50
4	21	33	36	44	21	33	36	44
5	18	33	38	46	18	33	38	46
6	21	34	51	59	21	34	51	59
7	29	40	30	43	29	40	30	43
8	57	71	26	27	57	71	26	27
9	59	54	24	28	59	54	24	28
10	35	48	23	27	35	48	23	27
11	30	61	19	25	30	61	19	25
12	29	55	17	28	29	55	17	28
13	20	33	14	17	20	33	14	17
14	12	18	11	14	12	18	11	14
15	9	17	9	15	9	17	9	15
16	8	12	7	10	8	12	7	10
17	6	9	7	11	6	9	7	11
18	5	15	5	11	5	9	5	11
19	n/a	n/a	n/a	n/a	5	9	5	n/a
20	n/a	n/a	n/a	n/a	5	9	5	n/a
21	n/a	n/a	n/a	n/a	5	9	5	n/a
22	n/a	n/a	n/a	n/a	5	9	5	n/a
23	n/a	n/a	n/a	n/a	5	15	5	n/a

Expressed in completed years calculated at the beginning of the plan year.

as at 31 March 2005

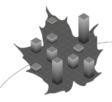


**Table 34** Assumed Proportions Electing an Immediate Reduced Annuity Active Members With 10 to 19 Years of Service (per 1,000 individuals)

- <u></u>		
Service <sup>1</sup>	<u>Officers</u>	Other Ranks
9	114	73
10	175	91
11	164	114
12	112	155
13	178	199
14	365	309
15	407	334
16	573	359
17	674	512
18	756	630
19	1,000	1,000

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Expressed in completed years calculated at the beginning of the plan year.



Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

Table 35 Assumed Rates of Retirement
Active Members With 19 or More Years of Service
(per 1,000 individuals)

	Intermediate Eng	gagement 20 Years	Intermediate Engagement 25 Years	
Service <sup>1</sup>	<u>Officers</u>	Other Ranks	<u>Officers</u>	Other Ranks
19	100	87	n/a	n/a
20	76	101	n/a	n/a
21	56	77	n/a	n/a
22	47	70	n/a	n/a
23	39	84	n/a	n/a
24	31	101	200	300
25	37	93	73	110
26	63	89	63	89
27	77	88	77	88
28	77	95	77	95
29	84	126	84	126
30	81	131	81	131
31	100	128	100	128
32	119	172	119	172
33	144	189	144	189
34	300	334	300	334
35	373	436	373	436
36	444	502	444	502
37	464	591	464	591
38	458	591	458	591

Expressed in completed years calculated at the beginning of the plan year.



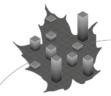


**Table 36** Assumed Immediate Annuity Reduction Factors
Retiring Active Members With 19 or More Years of Service

	<u>Officers</u>	Other Ranks
Service <sup>1</sup>	(%)	(%)
19	98.2	99.5
20	98.1	99.1
21	95.4	98.3
22	94.5	97.2
23	94.1	95.5
24	93.3	98.3
25	92.0	100.0
26	94.2	100.0
27+	100.0	100.0

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Expressed in completed years calculated at the beginning of the plan year.



Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

Table 37 Assumed Rates of Terminations due to Disability (per 1 000 individuals)

	(per 1,000 individuals)							
	Any Oc	cupation1		Own Occi	upation <sup>2</sup>			
$Age^3$	Male	<u>Female</u>	Male Officers	Male Other Ranks	Female Officers / Other Ranks			
17	0.4	0.4	0.0	0.5	3.9			
18	0.4	0.4	1.2	1.0	4.3			
19	0.4	0.4	2.3	1.4	4.7			
20	0.4	0.4	3.9	2.6	5.1			
21	0.4	0.4	5.2	3.6	5.6			
22	0.4	0.3	6.2	4.4	6.0			
23	0.5	0.3	6.8	4.9	6.0			
24	0.6	0.3	6.8	5.4	6.1			
25	0.7	0.2	6.1	5.8	6.1			
26	0.8	0.2	4.8	6.0	6.2			
27	1.0	0.2	3.5	6.2	6.3			
28	1.1	0.2	2.7	6.5	6.8			
29	1.2	0.2	2.2	7.2	7.4			
30	1.3	0.2	1.8	8.6	8.2			
31	1.3	0.2	1.6	10.1	8.9			
32	1.4	0.2	1.4	11.3	9.9			
33	1.5	0.2	1.4	12.4	11.0			
34	1.6	0.3	1.3	13.4	12.0			
35	1.7	0.4	1.3	14.4	13.1			
36	1.8	0.5	1.6	15.5	14.1			
37	2.0	0.6	2.1	17.4	15.1			
38	2.1	0.6	2.7	20.5	15.9			
39	2.3	0.6	3.0	23.2	16.5			
40	2.5	0.6	3.4	24.5	17.2			
41	2.7	0.6	3.9	24.9	17.7			
42	2.9	0.6	4.1	25.4	18.1			
43	3.1	0.6	4.3	25.7	18.2			
44	3.3	0.6	4.6	25.9	18.4			
45	3.6	0.4	4.9	26.0	18.5			
46	3.8	0.4	5.1	25.9	18.6			
47	4.1	0.4	5.3	26.4	18.9			
48	4.4	0.5	5.7	27.6	19.1			
49	4.7	0.6	6.5	29.1	19.3			
50	5.0	1.1	7.9	30.7	19.5			
51	5.4	1.3	10.5	31.9	19.7			
52	5.7	1.5	13.6	33.0	20.0			
53	6.1	1.7	15.8	34.0	19.6			
54	6.4	2.0	17.5	36.0	19.6			
55	6.8	2.6	19.4	36.0	19.6			
56 57	7.1 7.5	2.9 3.3	20.4 21.3	36.0	19.6 19.6			
57 58	7.5 7.9	3.3	21.3	37.8 39.6	19.6 19.6			
59	8.2	4.2	22.8	41.4	19.6			

Any occupation is defined as severe disability and it is assumed to be permanent with no recovery possible.

The requirement of "combat readiness" under the Forces may render a member unable to fulfill the requirements of his or her own occupation. Disability is assumed to be permanent with no recovery possible.

Expressed in completed years calculated at the beginning of the plan year.

Pension Plan for the CANADIAN FORCES

as at 31 March 2005

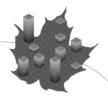
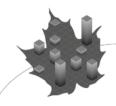


Table 38 **Assumed Mortality Rates** Plan Year 2006 (per 1,000 individuals)

Active Members, Healthy and Disability (3B) Pensioners Male Female **Surviving Spouses** Age1 **Officers** Other Ranks Officers / Other Ranks Male **Female** 0.6 0.3 0.9 0.3 20 0.6 25 0.5 0.6 0.3 1.1 0.4 30 0.6 0.6 0.4 1.1 0.5 35 0.6 0.6 0.5 1.2 0.7 40 0.7 1.6 0.6 1.0 0.8 45 0.9 1.8 0.9 2.3 1.5 50 3.1 1.2 3.6 2.3 1.6 55 3.0 6.0 2.1 6.1 4.4 60 5.5 10.3 4.2 10.1 7.1 65 9.6 16.8 8.3 16.5 11.2 70 17.4 27.7 13.0 26.6 17.3 33.2 44.9 42.5 26.9 75 21.5 80 61.0 38.1 72.2 67.6 42.7 85 99.1 109.2 66.6 108.3 67.4 90 149.2 150.7 117.9 168.0 105.5 95 222.3 230.0 192.6 255.7 175.8 100 315.2 321.7 287.5 340.3 316.6 105 495.7 495.7 415.2 500.0 500.0 110 500.0 500.0 492.4 500.0 500.0 115 1,000.0 1,000.0 1,000.0 1,000.0 1,000.0

Expressed in completed years calculated at the beginning of the plan year.

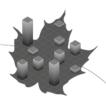


Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

**Table 39** Assumed Mortality Rates for Disability (3A) Pensioners Plan Year 2006 (per 1,000 individuals)

		Male	Female
$Age^1$	Officers	Other Ranks	Officers / Other Ranks
20	0.7	1.0	0.4
25	0.7	1.0	0.4
30	0.7	2.5	0.6
35	1.0	4.4	0.8
40	1.2	6.1	1.1
45	3.0	7.2	1.8
50	7.5	8.2	2.9
55	12.5	11.4	4.8
60	17.5	19.6	7.7
65	23.6	28.8	12.0
70	32.7	44.7	19.3
75	49.3	66.5	32.1
80	72.6	88.4	50.7
85	108.0	119.2	82.0
90	147.0	154.7	131.0
95	220.7	228.2	192.6
100	312.9	319.3	287.5
105	495.7	495.7	415.2
110	500.0	500.0	492.4
115	1,000.0	1,000.0	1,000.0

Expressed in completed years calculated at the beginning of the plan year.

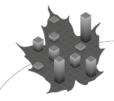


**Table 40** Assumed Longevity Improvement Factors After Plan Year 2006

	Annual Percentage of Mortality Reduction <sup>1</sup> (%)				
	M	lale	Fer	male	
$Age^2$	<u>2006</u>	<u>2027+</u>	<u>2006</u>	<u>2027+</u>	
20	2.80	0.80	1.50	0.70	
25	3.40	0.80	1.95	0.70	
30	3.70	0.80	1.80	0.70	
35	3.35	0.80	1.35	0.70	
40	2.65	0.80	0.95	0.70	
45	2.10	0.71	1.35	0.61	
50	2.30	0.65	1.60	0.55	
55	2.65	0.65	1.65	0.55	
60	2.75	0.65	1.75	0.55	
65	2.60	0.56	1.45	0.52	
70	2.20	0.50	1.10	0.50	
75	1.85	0.50	1.15	0.50	
80	1.30	0.50	0.95	0.50	
85	0.55	0.44	0.30	0.44	
90	0.10	0.40	0.00	0.40	
95	0.00	0.40	0.00	0.40	
100	0.00	0.31	0.00	0.31	
105	0.00	0.25	0.00	0.25	
110+	0.00	0.00	0.00	0.00	

The mortality rate reduction applicable during any plan year within the 21-year select period is found by linear interpolation between the figures for plan years 2006 and 2027.

Expressed in completed years calculated at the beginning of the plan year.



Pension Plan for the **CANADIAN FORCES** as at 31 March 2005

**Table 41** Assumptions for Survivor Allowance to Spouse Probability a member will have an eligible spouse at death (per 1,000 member deaths)

	Sex of Deceased Member					
	Male		Female			
		Age Difference		Age Difference		
Age of Deceased Member <sup>1</sup>	<u>Number</u>	Between Spouses	Number	Between Spouses		
20	306	0	140	1		
25	550	0	350	1		
30	655	0	480	1		
35	729	0	520	2		
40	771	(1)	520	3		
45	790	(1)	520	2		
50	800	(2)	510	3		
55	806	(2)	500	3		
60	803	(3)	470	3		
65	784	(3)	420	2		
70	742	(3)	360	0		
75	686	(3)	290	1		
80	616	(3)	210	(1)		
85	513	(4)	130	(3)		
90	391	(6)	70	(4)		
95	274	(7)	30	(6)		
100	175	(9)	10	(6)		

Expressed in completed years calculated at the beginning of the plan year.





**Table 42** Assumptions for Survivor Allowances to Children (per 1,000 member deaths)

	Average Nun	nber of Children	Average Age of Children		
			(according to sex of member)		
Age of Member		ŕ	, -	ŕ	
at Death <sup>1</sup>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	
20	72	2	0	1	
25	271	438	2	1	
30	670	702	5	5	
35	925	794	8	10	
40	1,020	726	11	13	
45	927	538	14	16	
50	665	311	16	17	
55	358	129	17	18	
60	136	28	18	19	
65	36	0	19	0	
70	11	0	21	0	
75	6	0	23	0	
80	0	0	0	0	

# Assumed Proportions of Children Remaining Eligible (on account of school attendance) for Allowances Throughout the Following Year (per 1,000 children)

<u>\</u>	/	
$\underline{\mathrm{Age}}^{\scriptscriptstyle 1}$	<u>Proportion</u>	
under 17	1,000	
17 to 23	840	
24 and over	0	

Expressed in completed years calculated at the beginning of the plan year.



## **Appendix 15 – Acknowledgements**

The Office of the Comptroller General of the Treasury Board of Canada Secretariat provided a certification of the assets of the plan as at 31 March 2005.

The Department of National Defence provided relevant valuation input data on active members, pensioners and survivors. Public Works and Government Services Canada also provided additional information in respect of pensioners and survivors.

The co-operation and able assistance received from the above-mentioned data providers deserve to be acknowledged.

The following individuals assisted in the preparation of this report:

John Kmetic, F.C.I.A., F.S.A. Wan-Yi Huang Monique Denner