

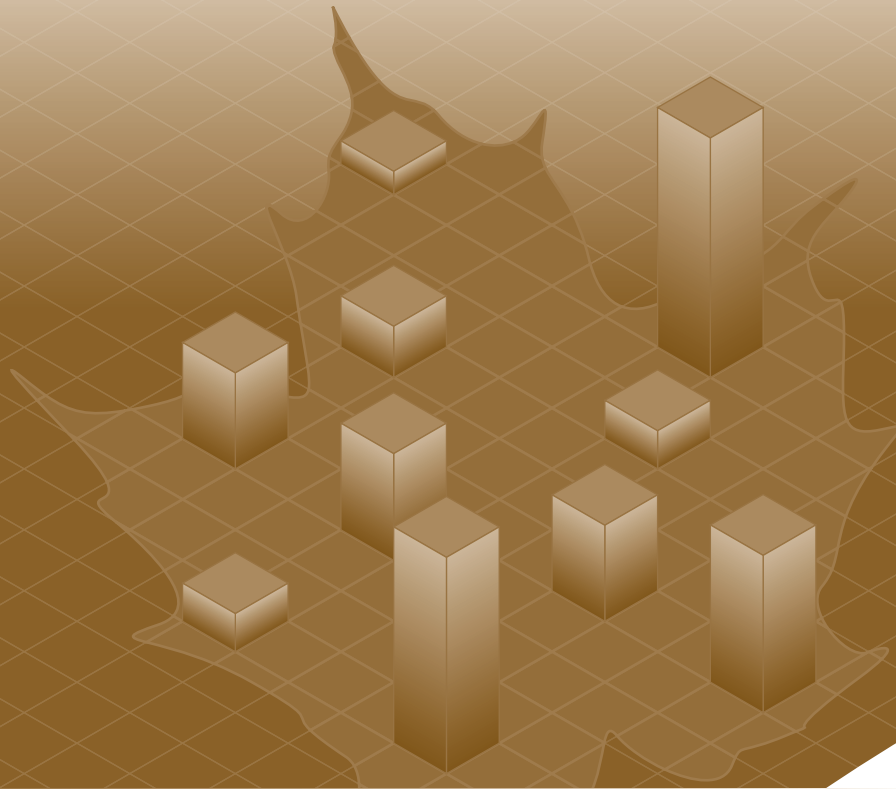


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ACTUARIAL REPORT

on the Pension Plan for the
**CANADIAN
FORCES**

Reserve Force
as at 31 March 2008

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16 November 2009

The Honourable Vic Toews, P.C., M.P.
President of Treasury Board
Ottawa, Canada
K1A 0R5

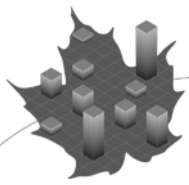
Dear Minister:

Pursuant to section 6 of the *Public Pensions Reporting Act*, I am pleased to submit the first report on the actuarial review as at 31 March 2008 of the Canadian Forces - Reserve Force pension plan. This plan is defined by Part I.1 of the *Canadian Forces Superannuation Act* and the *Pension Benefits Division Act*.

Yours sincerely,

Handwritten signature of Jean-Claude Ménard in cursive script.

Jean-Claude Ménard, F.S.A., F.C.I.A.
Chief Actuary
Office of the Chief Actuary

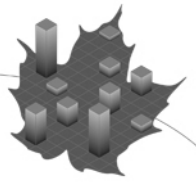


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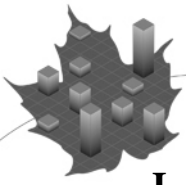
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I. Executive Summary

This first Actuarial Report on the Pension Plan for the Canadian Forces - Reserve Force (Reserve Force pension plan) was made pursuant to the *Public Pensions Reporting Act* (PPRA).

This actuarial valuation is as at 31 March 2008 and is in respect of pension benefits and contributions defined by Part I.1 of the *Canadian Forces Superannuation Act* (CFSA) and the *Pension Benefits Division Act* (PBDA).

The date of the next periodic review is scheduled to occur no later than 31 March 2011.

A. Purpose of Actuarial Report

The purpose of this actuarial valuation is to determine the state of the Reserve Force Pension Fund as well as to assist the President of the Treasury Board in making informed decisions regarding the financing of the government's pension benefit obligation.

B. Valuation Basis

This report is based on pension benefit provisions enacted by legislation, summarized in Appendix 1.

The financial data on which this valuation is based are composed of tangible assets which the government has earmarked for the payment of benefits for service with respect to the Reserve Force pension plan. These pension assets are summarized in Appendix 2. The membership data is summarized in Appendices 3 and 6.

The valuation was prepared using accepted actuarial practices, methods and assumptions which are summarized in Appendices 4 and 5.

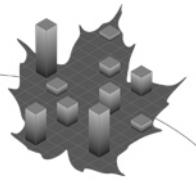
All actuarial assumptions used in this report are best-estimate assumptions. They are individually reasonable for the purposes of the valuation at the date of this report. A complete description of the assumptions is shown in Appendix 5.

The Canadian Institute of Actuaries (CIA) has recently adopted a Revised Standards of Practice for Pension Commuted Values, effective 1 April 2009. The financial impact of the revised Standards is reflected in this valuation.

At the time of preparing this report, the global economy and financial markets were going through a difficult period. The significant deterioration and volatility of financial markets may result in a decline in the market value of the funds managed by the Public Sector Pension Investment Board (PSPIB). The impact of investment returns after the valuation date will be reflected in the next actuarial valuation which is set to occur no later than 31 March 2011.

C. Main Findings

The proposed amounts to be credited to (or debited from) the Reserve Force Pension Fund are shown on a calendar year basis in this section beginning with calendar year



2010 which is the first calendar year that follows the expected tabling of this report. Valuation results on a plan year¹ basis are shown in Section II.

1) Current Service Cost²

The total normal cost, borne jointly by the participants and the government, is \$58.8 million for calendar year 2010. The estimated participants’ contributions are \$21.5 million and the estimated government contributions are \$37.3 million for calendar year 2010. The Reserve Force Pension Fund administrative expenses are \$5.2 million (included in the total current service cost) for calendar year 2010. The following table shows the projected current service cost expressed as a percentage of the expected pensionable payroll³ for the three calendar years following the expected laying of this report. The ratio of government current service cost to the participants current service cost is also shown.

Current Service Cost on a Calendar Year Basis

Calendar Year	Current Service Cost			Ratio of Government to Participants Current Service Cost
	As a percentage of pensionable payroll			
	Participants	Government	Total	
2010	5.15	8.95	14.10	1.74
2011	5.20	8.91	14.11	1.71
2012	5.20	9.00	14.20	1.73

2) Financial position and amortization of actuarial surplus (deficit)

As at 31 March 2008, the actuarial value of the assets in respect of the Reserve Force Pension Fund is \$66.4 million and the actuarial liability is \$55.7 million, resulting in an actuarial surplus of \$10.7 million.

3) Non-permitted actuarial surplus

If there exists in the opinion of the President of the Treasury Board a non-permitted actuarial surplus⁴ in the Pension Fund, any future contributions to the Fund may be reduced in a manner determined by the President or the non-permitted actuarial surplus may be paid out of the Fund and into the Consolidated Revenue Fund. As at 31 March 2008, a non-permitted actuarial surplus does not exist.

¹ 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.

² Also called normal cost.

³ *Pensionable payroll* is defined in Note 1 of Appendix 1-D.

⁴ A non-permitted actuarial surplus exists when the amount by which the actuarial value of assets exceeds the liabilities is greater than the lesser of (a) and (b), where:

(a) is 20% of the amount of liabilities, and

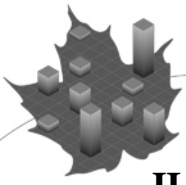
(b) is the greater of (i) and (ii) where:

(i) is twice the estimated amount, for the calendar year following the date of that report, of the total of

(A) the current service cost contributions that would be required of participants, and

(B) the current service cost contributions that would be required of the government, and

(ii) is 10% of the amount of liabilities.



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II. Valuation Results

This report is based on pension benefit provisions enacted by legislation, summarized in Appendix 1, and the financial and membership data, summarized in Appendices 2, 3 and 6. The valuation was prepared using accepted actuarial practices, methods and assumptions summarized in Appendices 4 and 5. Emerging experience, differing from the corresponding assumptions, will result in gains or losses to be revealed in subsequent reports.

A. Financial Position

Beginning on 1 March 2007, employer and participant contributions to the Reserve Force pension plan are credited to the Reserve Force Pension Fund, the net proceed of which is transferred to the PSPIB and invested in the financial markets. The valuation results of this section show the financial position as at 31 March 2008.

Table 1 Balance Sheet - Reserve Force Pension Fund
(\$ millions)

	31 March 2008
Actuarial Value of Assets	
Market value of assets	64.2
Actuarial smoothing adjustment	2.2
Present value of prior service contributions	-
Total assets	66.4
Actuarial Liability	
Active participants	53.5
Retirement pensioners	2.2
Disability pensioners	-
Surviving dependents	-
Total Actuarial Liability	55.7
Actuarial Surplus/(Deficit)	10.7



B. Cost Certificate

1) Current Service Cost

The details of the current service cost for plan year 2009 are shown below.

Table 2 Current Service Cost for Plan Year 2009
(\$ millions)

Participant required contributions	17.2
Government current service cost	33.8
Total current service cost	51.0
Expected pensionable payroll	367.7
Total current service cost as % of expected pensionable payroll	13.87%

2) Projection of Current Service Costs

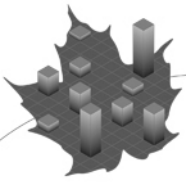
The following current service costs are expressed in dollar amount as well as in percentage of the projected pensionable payroll for the next five plan years. The current service cost is borne jointly by the participants and the government. The participant contribution rate on pensionable earnings is 4.6% for calendar year 2008, and is scheduled to rise to 4.9% for calendar year 2009 and 5.2% for each calendar year thereafter.

Current service costs are shown below on a plan year basis; participant contributions and the government current service costs are also shown on a calendar year basis in the Executive Summary.

Table 3 Projection of Current Service Cost

Plan Year	Current Service Cost (\$ millions)			Current Service Cost as a Percentage of Pensionable Payroll			Portion Borne by the Government
	Participants	Government	Total	Participants	Government	Total	
2009	17.2	33.8	51.0	4.67	9.20	13.87	66%
2010	18.6	34.3	52.9	4.97	9.16	14.13	65%
2011	22.4	38.3	60.7	5.20	8.89	14.09	63%
2012	24.6	42.2	66.8	5.20	8.91	14.11	63%
2013	26.7	46.2	72.9	5.20	9.02	14.22	63%

The decrease in the portion, as a percentage, of the total current service cost borne by the government from plan year 2009 to 2011 mainly reflects increased plan contributions by participants. Until the pension plan reaches its maturity, the current service cost as a percentage of pensionable payroll is expected to increase for the foreseeable future. Since the participant contribution rate is set at a maximum of 5.2% of pensionable payroll starting in calendar year 2010, the government is expected to absorb the future increase in the current service cost.



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3) Administrative Expenses

Based upon the assumptions described in section C of Appendix 5, the Fund administrative expenses are included in the total current service costs and are estimated to be as follows:

Plan Year	
2009	\$4,596,420
2010	\$4,679,370
2011	\$5,384,162
2012	\$5,916,171
2013	\$6,409,910

4) Contributions for Prior Service Elections

Based upon the valuation data, the assumptions described in sections B and C of Appendix 5 and recent statistical information provided by the Department of National Defence (described below), participant and government contributions for prior service elections were estimated as follows:

Table 4 Estimated Contributions for Prior Service
(\$ millions)

<u>Plan Year</u>	<u>Participant</u>	<u>Government</u>
2009	5.2	5.2
2010	10.9	10.9
2011	22.4	22.4
2012	36.1	36.1
2013	46.5	46.5

For the next five years, the bulk of the elections for prior service is expected to be with respect to service prior to March 2007. Part I.1 of the Act is providing the possibility to certain participants of the Reserve Force pension plan to elect for service prior to the inception of the pension plan. Participants have until 31 March 2010 to make an election to buyback service prior to 1 March 2007.

For the next five years, participants and government contributions were determined on the basis of prior service election information provided by Department of National Defence (DND). It is assumed that there will be approximately 5,500 elections for prior service by the end of March 2010. There is currently a backlog of cases that have not yet been processed. Taking into consideration the additional resources expected to be added during plan year 2011, it is assumed that the backlog will be processed by the end of plan year 2013.



C. Sensitivity to Variations in Key Assumptions

The following table measures the effect on the plan year 2009 current service cost and liabilities, if key economic assumptions are varied by one percentage point per annum from plan year 2009 onward.

Table 5 Sensitivity of Valuation Results

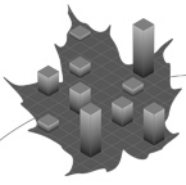
Assumption(s) Varied	Current Service Cost (%)		Actuarial Liability (\$ millions)	
	2009	Effect	2009	Effect
None (i.e. current basis)	13.87	None	56	None
Investment yield				
- if 1% higher	10.42	(3.45)	41	(14)
- if 1% lower	19.03	5.16	77	21
Inflation				
- if 1% higher	16.79	2.92	68	13
- if 1% lower	11.74	(2.12)	47	(9)
Salary, YMPE and MPE				
- if 1% higher	13.91	0.04	56	0
- if 1% lower	13.81	(0.06)	55	0
All economic assumptions				
- if 1% higher	12.39	(1.48)	50	(6)
- if 1% lower	15.71	1.84	63	7

The foregoing estimates indicate the degree to which the Reserve Force 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 a key assumption to the extent that such effects are linear.

The following table shows the impact on the projected Reserve Force Pension Fund surplus as at 31 March 2011 (the expected date of the next actuarial review) if investment returns are different than assumed in this valuation. Projected actuarial surpluses are shown if annual investment returns are 2% higher or lower than the best estimate assumption and if the investment return in plan year 2009 is negative 20% before returning to the best estimate assumption of 6% per annum for the following two plan years.

Table 6 Sensitivity of Projected Pension Fund Surplus as at 31 March 2011
(\$ millions)

Assumption(s) Varied	Projected Actuarial Value of Assets	Projected Actuarial Value of Liability	Projected Actuarial Surplus
None (i.e. current basis)	190.5	181.0	9.5
Investment return			
- if 2% higher annually for next 3	193.3	181.0	12.3
- if 2% lower annually for next 3 years	187.6	181.0	6.6
- if minus 20% for plan year 2009	169.8	181.0	(11.2)



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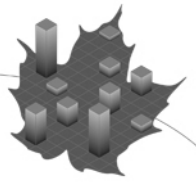
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D. Summary of Estimated Government Costs

The following table summarizes the estimated total government costs on a plan year basis.

Table 7 Estimated Government Cost
(\$ millions)

<u>Plan Year</u>	<u>Current Service Cost</u>	<u>Total Prior Service Contributions</u>	<u>Total Government Cost</u>
2009	33.8	5.2	39.0
2010	34.3	10.9	45.2
2011	38.3	22.4	60.7
2012	42.2	36.1	78.3
2013	46.2	46.5	92.7



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 the valuation is based are sufficient and reliable for the purposes of the valuation;
- the assumptions that have been used are, individually and in aggregate, appropriate for the purposes of determining the financial status as at 31 March 2008 of the Pension Reserve Force Pension Fund and assisting the President of the Treasury Board in making informed decisions regarding the financing of the government's pension benefit obligation;
- the methodology employed is appropriate for the purposes of determining the financial status as at 31 March 2008 of the Reserve Force Pension Fund and assisting the President of the Treasury Board in making informed decisions regarding the financing of the government's pension benefit obligation; and
- this report has been prepared, and our opinions given, in accordance with accepted actuarial practice.

In particular, this report was prepared in accordance with the Standards of Practice (General Standards and Practice – Specific Standards for Pension Plans) published by the Canadian Institute of Actuaries.

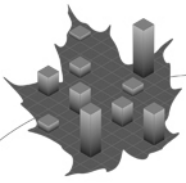
At the time of preparing this report, the global economy and financial markets were going through a difficult period. Should the deterioration of financial markets continue, the impact on the Reserve Force Pension Fund will be reflected in the next actuarial valuation which is set to occur no later than 31 March 2011. To the best of our knowledge, after inquiring with the Department of National Defence and the Treasury Board of Canada Secretariat, there were no other subsequent events between the valuation date and the date of this report that would have a material impact on the results of this valuation.

The payment of accrued pension benefits being the responsibility of the government, the likelihood of the plan being wound-up and its obligation not being fulfilled is practically nonexistent; also the Act does not define the benefits payable upon wind-up. Therefore, a solvency valuation has not been performed.

Daniel Hébert, F.S.A., F.C.I.A.
Senior Actuary

Jean-Claude Ménard, F.S.A., F.C.I.A.
Chief Actuary

Ottawa, Canada
16 November 2009



Appendix 1 – Summary of Pension Benefit Provisions

The enactment of Bill C-78 on 14 September 1999 gave authority to create a Reserve Force Pension Plan. This Plan was established on 1 March 2007 and provides coverage to part-time members of the Reserve Force who meet the threshold requirements for becoming Plan participants. The benefit eligibility rules under the new Plan are the same as the rules that apply to Regular Force members starting on 1 March 2007.

One major aspect of the change to Part I is the introduction of the duality in qualifying for benefits as well as an extended definition of pensionable service. Canadian Forces members accumulate two types of service, “pensionable” and “qualifying”. The term “pensionable service” takes its usual form, that is, a period of service becomes pensionable to the extent that the member was eligible to contribute to the pension plan and that he/she made the required contributions. The term “qualifying service” refers to period of paid service and/or enrolment periods with pay in the Canadian Forces. Even though very limited, certain types of service in the Canadian Forces are excluded. Regardless of event leading to a benefit entitlements (withdrawal, retirement, disability or death), the pensionable service is used to determine the amount of benefit to be received by a member.

The duality in qualifying for benefits depends on the types of service, “pensionable” versus “qualifying”. To qualify for the early retirement benefit (after 25 years of service under the new terms of service) the qualifying service is used. Under the new entitlement provisions, an annual allowance will be available from age 50 with the completion of two years of pensionable service. A participant terminating with at least two years of pensionable service will be entitled to a full immediate annuity at the age of 55 with a minimum of 30 years of pensionable service or if he/she becomes disabled or reaches the age of 60.

Valuation Methodology

This valuation is based on the use of the pensionable service years credited to each participant as at 31 March 2008 to estimate future benefit entitlements. However, this valuation also recognizes that certain participants will be entitled to an unreduced benefit at an earlier age after the completion of a total of 25 years of qualifying service.

Summary of Pension Benefit Provisions

Summarized in this Appendix are the pension benefits provided under Part I.1 of the CFSA registered provisions which are in compliance with the *Income Tax Act*.

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

A. Membership

A member becomes a participant in the Reserve Force pension plan, defined under Part I.1 of the CFSA, if,

- a) on 1 March 2007, during each of any two consecutive periods of 12 months beginning on or after 1 April 1999 and ending no later than 1 March 2007, the earnings that they were entitled to receive were equal to or greater than 10 per cent of the Annual Earnings



Threshold¹, if the member already was or became a member of the Canadian Forces during the first month of the first period and remained a member of the Canadian Forces, without any interruption of more than 60 days, until 1 March 2007; or

- b) in any other case, on the first day of the month following two consecutive periods of 12 months — the second of which shall end after 1 March 2007 — during each of which the earnings that they were entitled to receive were equal to or greater than 10 per cent of the Annual Earnings Threshold, if the member already was or became a member of the Canadian Forces during the first month of the first period and remained a member of the Canadian Forces without any interruption of more than 60 days throughout those two periods.

B. Contributions

1. Participants

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

Calendar Year	2008	2009	2010	2011	2012	2013+
On all earnings up to 2/3 of the MPE as defined under the <i>Income Tax Regulations</i>	4.6%	4.9%	5.2%	5.2%	5.2%	5.2%

2. Government

a) Current Service

The government determines its normal monthly contribution as that amount, which when combined with the required contributions by participants in respect of current service, is sufficient to cover the cost, as estimated by the President of the Treasury Board, of all future benefits that have accrued in respect of pensionable service during that month and the Fund administrative expenses incurred during that month.

b) Elected Prior Service

As at the valuation date, the pension plan has been in force for a total of 13 months. The government contribution rate as a multiple of the participants’ contributions has not yet been finalized. Our study shows that the methodology used to determine the contribution required by participants represents approximately 55% of the actuarial liability generated by such election. Consequently, this valuation assumes that the government will match participant contributions for prior service election.

The methodology used under the Public Service, the RCMP and the Regular Force pension plans is to have the government contribution equals to the plan year service cost of the year in which the participant elects his/her prior service, minus the contribution made by participants. This methodology cannot be applied to the Reserve Force pension plan.

¹ Annual Earnings Threshold is equal to the sum of 1/12 of the Year’s Maximum Pensionable earnings over any 12 months period.



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c) Actuarial Surplus

The Regulations under Part I.1 of the Act gives the government the authority to deal with any actuarial surplus, subject to limitations, in the Pension Fund as they occur by reducing employer contributions.

d) Actuarial Deficit

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

C. Summary Description of Benefits

The objective of the Reserve Force pension plan is to provide an employment earnings-related lifetime retirement pension to eligible members. Benefits to eligible members in case of disability and to the spouse and children in case of death are also provided.

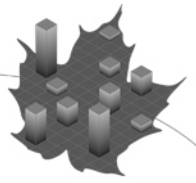
The initial rate of retirement pension is equal to 1.5% of the greater of the participant's total pensionable earnings and total updated pensionable earnings over the most recent 35 years of pensionable service (i.e. Updated Career Average Plan). The plan also provides a bridge benefit equal to 0.5% of the greater of the pensioner's total bridge benefit earnings and total updated bridge benefit earnings over the most recent 35 years of pensionable earnings. The pension and bridge benefits are indexed annually with the Consumer Price Index and the accumulated indexation may be payable at the earliest of age 55 as defined in Note 6 of section D below.

Entitlement to benefits depends on either qualifying service in Canadian Forces or pensionable service, as defined in Notes 7 and 8 of section D below.

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

1. Benefit Entitlement on the basis of "Pensionable" Service

Participant's Type of Termination	Benefit
With less than two years of pensionable service	Return of contributions
With two or more years of pensionable service; and	
• Involuntary termination due to a work force reduction program and	
- With 20 years of service or more	Immediate annuity
- Age 50 or over and 10 years of service or more	
• Leaving prior to age 50, except for death, and	
- Because of disability	Immediate annuity
- Otherwise	Deferred annuity or Transfer Value
• Leaving at age 50 or over, except for death or disability, and	
- Age 60 or over, or age 55 or over and service 30 years or more	Immediate annuity
- Otherwise	Deferred annuity or annual allowance



2. Benefit Entitlement on the basis of “Qualifying” Service

Participant’s Type of Termination	Benefit
Retirement on completion of 25 years or more of Canadian Forces service (Note 7)	Immediate annuity (Note 10)

D. Explanatory Notes

1. Earnings

Earnings mean the salary at the annual rate prescribed by the regulations made pursuant to the *National Defence Act* together with premiums in lieu of leave.

Pensionable earnings mean the earnings of a participant, with less than 35 years of pensionable service, having completed the required two-year waiting period.

Pensionable payroll means the aggregate pensionable earnings of all participants.

2. Wage measure

Wage measure is

- (a) for a calendar year prior to 2010, the corresponding rate of pay shown in Table 18 of this report ; and
- (b) for a calendar year after 2009, the greater of
 - a. the standard basic rate of pay for a period of duty or training of six hours or more, before any retroactive adjustment, that was prescribed or established under the *National Defence Act* to be paid, on October 1 of the preceding year, to a member at the rank of Corporal (class A), and
 - b. the wage measure of the previous year.

3. Updated Pensionable Earnings

The updated pensionable earnings, for a calendar year, are the participant’s pensionable earnings, subject to the *Income Tax Act* limits, for that year times A/B, rounded to the nearest fourth decimal place, where

A = the average of the wage measures for five years consisting of the year the member most recently ceased to be a participant and the most recent years during which the member was a participant and, if necessary, the years preceding all of those years, and

B = the wage measure for that calendar year.

4. Bridge Benefit Earnings

Bridge benefit earnings for a calendar year are the lesser of

- (a) the participant’s pensionable earnings for that year, and
- (b) the Yearly Maximum Pensionable Earnings (YMPE) for that year.

5. Updated Bridge Benefit Earnings

Updated bridge benefit earnings for a calendar year are the lesser of



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- (a) the participant's updated pensionable earnings for that year, and
- (b) the average of the YMPE for five years consisting of the year the member most recently ceased to be a participant and the preceding four years.

6. 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 participation in the plan 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.

7. Qualifying Service in the Canadian Forces

For most purposes of the CFSA, qualifying service in the Canadian Forces means service for which a Reserve Force member is paid, and includes:

- days of service in the Regular Force for which pay was authorized, and authorized maternity and parental leaves
 - excluding any service for which a participant 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;
- days of service in the Reserve Force for which pay was authorized, and authorized maternity and parental leaves:
 - days of training or duty of less than 6 hours = half-day
 - days of Class "A" service = 1.4 days
 - periods before 1 April 1999 (when duration of period is verifiable but not the number of days) = quarter time
 - during maternity and parental leaves, days of CF service are based on service in previous 12 months.



8. Pensionable Service

Pensionable service includes any period of service in the Reserve Force in respect of which a participant either (1) made contributions that remain in the Pension Fund or (2) elected to contribute. It also includes any period of prior service for which a participant was paid a return of contributions or lump sum payment under the CFSA that he or she did elect to repay on subsequent enrolment. It also includes prior service in the Public Service of Canada, the Royal Canadian Mounted Police and the militaries of the Commonwealth of Nations they elected to count as pensionable service.

9. 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 participant 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.

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 1.5% of the greater of the participant's total pensionable earnings and total updated pensionable earnings over the most recent 35 years of pensionable service, plus an additional bridge benefit equals to 0.5% of the greater of the participant's total bridge benefit earnings and total updated bridge benefit earnings.

Annuities are payable in equal monthly instalments in arrears until the end of the month in which the pensioner dies. Upon the death of the pensioner, either a survivor allowance (Note 16) or a minimum death benefit (Note 17) may be payable.

11. Deferred Annuity

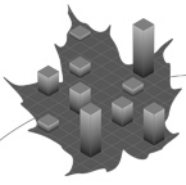
Deferred annuity means an annuity that normally becomes payable to a retirement pensioner when he/she reaches age 60. The annual payment is determined like that of an immediate annuity (see Note 10 above) but is adjusted to reflect the indexation (see page 18) from date of termination to the commencement of annuity payments.

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

12. Transfer Value

Participants 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.



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13. Annual Allowance for Participant

Annual allowance means an annuity payable immediately on retirement or upon attaining age 50, if later. The amount of the allowance is equal to the amount of the deferred annuity to which the participant would otherwise be entitled, reduced by 5% of such annuity multiplied by the difference between 60 and the age when the allowance becomes payable.

However, if the participant is at least 50 years old at termination, and has at least 25 years of pensionable service, then the difference is reduced (subject to the above as a maximum) to the greater of

- 55 minus the age, and
- 30 minus the number of years of pensionable service.

When a participant in receipt of an annual allowance becomes disabled before reaching age 60, the annual allowance becomes an immediate annuity adjusted in accordance with regulations to take into account the amount of any annual allowance received prior to becoming disabled.

14. Eligible Surviving Spouse

Eligible surviving spouse means the surviving spouse of a participant or pensioner except if:

- (a) the participant or pensioner died within one year of marriage unless the Minister of National Defence is satisfied that the participant'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 participant 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.

15. Eligible Surviving Children

Eligible surviving children includes all children of the participant or pensioner who are under age 18, and any child of the participant 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 participant or pensioner died, whichever occurred later.



16. Annual Allowance for Eligible Survivors

Annual allowance means, for the eligible surviving spouse and children of a participant or pensioner, an annuity that becomes payable immediately upon the death of that individual. The annual allowance is equal to

- (a) An amount equal to one per cent of the greater of the pensioner's total pensionable earnings and total updated pensionable earnings; or,
- (b) If the participant was in receipt of an annual allowance at the time of death, an amount equal to $A \times B / C$ where:
 - A = the amount calculated under paragraph (a),
 - B = the amount of the annual allowance, and
 - C = the amount of the deferred annuity to which the pensioner was entitled.
- (c) Each child of a participant who, at the date of the participant's death, is under 18 years of age or is 18 or more years of age but less than 25 years of age and enrolled in and pursuing a full-time course of study is entitled
 - if the participant died leaving a survivor entitled to an allowance equal to 1/4 of the basic allowance or, if there are more than two children, to an annual allowance equal to 1/2 of the basic allowance divided by the number of children; or
 - if the participant died without leaving a survivor entitled to receive an allowance, and
 - there are fewer than four children, to an annual allowance equal to 1/2 of the basic allowance, or
 - there are more than three children, to an annual allowance equal to 1.5 times the basic allowance divided by the number of children.
 - The proportion of the basic allowance that constitutes the annual allowance shall be revised when the number of children who are entitled changes.

17. Minimum Death Benefit

If upon the death of a participant 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 participant or to the named beneficiary under CFSA Part II, if any exist, an amount equal to A minus B where;

- A. is the greater of a return of contributions and an amount equal to five times the total of the initial annuity plus the bridge benefit (see Notes 9 and 10 above); and
- B. is the aggregate of all amounts paid to a survivor or child and to the participant or pensioner.

18. Division of Pension in Case of Spousal Union Breakdown

It is expected that members of the Reserve Force will be subjected to the *Pension Benefits Division Act*. However, the regulations under the *Pension Benefits Division Act* were not modified accordingly as of the writing of this report. When the regulations



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will be updated, the following description of benefit will be applicable to the Reserve Force members.

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 participant or pensioner. As at the transfer date, the maximum transferable amount is half the value of the retirement pension accrued by the participant or pensioner during the period of cohabitation. If the participant's benefits are not vested, the maximum transferable amount corresponds to half the participant'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 participant or pensioner are then reduced accordingly.



Appendix 2 – Assets and Rates of Return

A. Assets

The assets the government uses to finance the pension promise are composed of the tangible assets of the Reserve Force Pension Fund which the government has earmarked for the payment of benefits.

1. Reserve Force Pension Fund

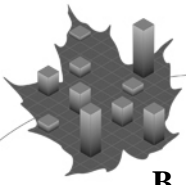
Since 1 March 2007, contributions (for current and prior service) have been credited to the newly established Reserve Force Pension Fund. The Fund is invested in the financial markets with a view to achieving maximum rates of return without undue risk.

The Fund has been credited with all contributions as well as with the net investment earnings generated by the capital assets managed by the PSPIB. It is debited with benefit payments and plan administrative expenses.

Table 8 Reconciliation of Balances in Pension Fund
(\$ millions)

Plan Year	2007	2008	2007-2008
Opening balance	-	3.3	-
INCOME			
Interest earnings	-	(0.7)	(0.7)
Employer contributions	3.7	49.7	53.4
Participant contributions	1.2	16.5	17.7
Transfers received	-	-	-
Actuarial liability adjustments	-	-	-
<i>Subtotal</i>	4.9	65.5	70.4
EXPENDITURES			
Annuities	-	-	-
Pension divisions	-	-	-
Return of contributions	-	-	-
Pension transfer value payments	-	-	-
Transfers to other pension plans	-	-	-
Minimum benefits	-	-	-
Administrative expenses	1.6	4.6	6.2
<i>Subtotal</i>	1.6	4.6	6.2
Closing balance	3.3	64.2	64.2

The above table shows entries for plan year 2007. However, no assets were transferred to the PSPIB during plan year 2007. Assets were first transferred at the beginning of plan year 2008.



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B. Rates of Return

The following Fund yield is from the PSPIB 2008 Annual Report.

Plan Year	Pension Fund
2008	(1.5%)

C. Sources of Asset Data

The Reserve Force Pension Fund entries shown in Section A above were taken from the Public Accounts of Canada and the financial statements of the Public Sector Pension Investment Board.



Appendix 3 – Membership Data

A. Sources of Membership Data

The valuation input data required in respect of members, former members (pensioners) and survivors are provided by the Department of National Defence (DND). Because DND does not administer the pension payments made to former members of the Canadian Forces - Reserve Force, the information received from DND on former members may not be accurate since the information is not kept up to date. It is for this reason that an additional set of valuation data on former members of the Canadian Forces - Reserve Force is extracted from master computer files maintained by the Superannuation Directorate of the Department of Public Works and Government Services Canada. This second set of valuation data on former members permits cross verification of two sources.

The main valuation data file supplied by DND contained the historical status information on all members up to 31 March 2008. The valuation data file on former members of the Canadian Forces - Reserve Force provided by PWGSC covers the period of 1 March 2007 to 31 March 2008.

B. Validation of Membership Data

1. Status-Related Tests

The following status tests were made on the main valuation data file:

- a consistency check that a status could be established for each record of a member. The status of a member may change over time but at a given point in time it can be only one of the following: participant, outstanding termination, pensioner, deceased leaving an eligible survivor; and,
- if a participant or pensioner record indicated that the member died leaving an eligible survivor, then a corresponding survivor record should exist.

2. Benefit-Related Tests

Consistency tests were made to ensure that all proper information to value the member benefits based on individual statuses as at 31 March 2008 was included, by verifying that

a) For Active Members

- the earnings were included and, if not, imputing earnings by updating earnings from a previous year with an average earnings increase or failing that, using the average earnings for that sex.

b) For Pensioners and Survivors in Receipt of an Annuity

- the amount of the annuity, including indexation, was included; and,
- the benefits were indexed up to 1 January 2008.



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c) For Adjustments to Status and Benefit Data

- appropriate adjustments were made to the basic data, after consulting with the data providers, based on the omissions and discrepancies identified by the tests described herein and several additional tests.

C. Membership Data

Detailed membership data upon which this valuation is based are shown in Appendix 6.



Appendix 4 – Valuation Methodology

A. Reserve Force Pension Fund

For valuation purposes, an adjusted market value method is used to determine the actuarial value of assets in respect of the Pension Fund.

Under the adjusted market value method, the difference between the observed investment returns during a given plan year and the expected investment returns is spread over five years, subject to a 10% corridor. 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 only other Fund-related asset consists of the discounted value of future participant contributions and government credits in respect of prior service elections. The discounted value of future participant contributions was calculated using the assumed yield on the Pension Fund. It is assumed that the government matches participant contributions when the participant pays the single rate while it is assumed there is no government contribution when the participant pays the double rate.

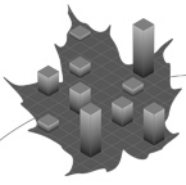
The actuarial value of the assets, determined as at 31 March 2008, under the adjusted market value method is \$66.4 million and was determined as follows:

Table 9 Actuarial Value of Pension Fund Assets
(\$ millions)

Plan Year	2008
Actual net investment return (A)	(0.7)
Expected investment return (B)	2.0
Investment gains (losses) (A-B)	(2.7)
Gains (losses) recognized immediately	-
Investment gains (losses) to be amortized	(2.7)
Unrecognized percentage	80%
<i>Unrecognized investment gains (losses)</i>	<i>(2.2)</i>
Market value as at 31 March 2008	64.2
Plus	
Present value of prior service contributions	0
Less	
Total unrecognized investment gains (losses)	(2.2)
Actuarial value as at 31 March 2008	66.4

B. Actuarial Cost Method

As benefits earned in respect of current service will not be payable for many years, the purpose of an actuarial cost method is to assign costs over the working lifetime of the participants.



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The projected accrued benefit actuarial cost method (also known as the projected unit credit method) was used to determine the current service cost and actuarial liability. Consistent with this cost method, pensionable earnings in the year preceding the valuation date are projected up to retirement using the assumed annual increases in average pensionable earnings (including seniority and promotional increases). The yearly maximum salary cap and other benefit limits under the *Income Tax Act* were taken into account to determine the benefits payable under Part I.1 of the CFSA.

1. Current Service Costs

Under the projected accrued benefit actuarial cost method, the current service cost, also called normal cost, computed in respect of a given year is the sum of the value, discounted in accordance with the actuarial assumptions for the Pension Fund, of all future payable benefits considered to accrue in respect of that year's service. The Pension Fund administrative expenses are deemed to be included in the total current service cost.

Under this method, the current service cost for an individual participant will increase each year as the participant approaches retirement. However, all other things being equal, the current service cost for the total population, expressed as a percentage of total pensionable payroll, can be expected to remain stable as long as the average age and service of the total population remains constant.

As at the valuation date, the Reserve Force pension plan has been in operation for a total of 13 months. With the recognition of current and prior pensionable service election made by participants as at 31 March 2008, the average age and pensionable service are respectively 31.5 and 0.9 years. Being a young pension plan, the Reserve Force pension plan current service cost is expected to increase over the years. In addition, the pension plan's own experience is limited and projecting when the current service cost for the total population will become stable is unknown at this time. With three more years of experience, the next valuation report will provide an indication of when the projected long term current service cost is expected to stabilize.

The government current service cost is the total current service cost reduced by the participants' contributions.

2. Actuarial Liability

The actuarial liability with respect to participants corresponds to the value, discounted in accordance with the actuarial assumptions, of all future payable benefits accrued as at the valuation date in respect of all previous service. For pensioners and survivors, the actuarial liability corresponds to the value, discounted in accordance with the actuarial assumptions, of future payable benefits.

3. Unreduced Retirement Benefit on Account of Total Canadian Forces Service

This valuation recognizes the higher cost and liabilities associated with participants that would qualify, as at 31 March 2008, for an early unreduced retirement benefit due to their completion of a total of 25 years of Canadian Forces (both Regular and Reserve) service.



4. Actuarial Surplus (Deficit)

It is very unlikely that the actual experience will conform exactly to the assumptions that underlie the actuarial estimates. Thus a balancing item must be calculated under this cost method to estimate the necessary adjustments. Adjustments may also be necessary if the terms of the pension benefits enacted by legislation are modified or if assumptions need to be updated.

The actuarial surplus or deficit is the difference between the actuarial value of assets and the actuarial liability. A new actuarial deficit may be amortized over a period not exceeding 15 years through special payments and the disposition of any actuarial surplus is defined in Part I.1 of the CFSA.

5. Government Contributions

The recommended government contribution corresponds to the sum of:

- the government current service cost;
- the government contributions for prior service; and
- as applicable, special payments in respect of a deficit or as the case may be, actuarial surplus credits.

C. Projected Yields

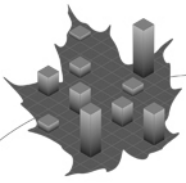
The projected yields (shown in Appendix 5) assumed for computing the present value of the benefits accrued or accruing to be credited to the Reserve Force Pension Fund (i.e. the Fund liabilities and the current service cost) were developed on the basis that the Fund holds a diversified mix of assets.

D. Membership Data

For valuation purposes, individual data on each member were used.

The member data shown in Appendix 6 were provided as at 31 March 2008. This valuation is based on the member data as at the valuation date.

The information in respect of the contributions for elected prior service was provided as at 31 March 2008. Future participant contributions in respect of elected prior service took into account only the payment streams that were still in effect at 31 March 2008. Only payments due after 31 March 2008 were included.



Appendix 5 – Actuarial Assumptions

The payment of accrued pension benefits is the responsibility of the government, therefore the likelihood of the plan being wound-up and its obligation not being fulfilled 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

a) Level of Inflation

Price increases, as measured by changes in the Consumer Price Index, tend to fluctuate from year to year. Based on the renewed commitment of the Bank of Canada and the Government to keep inflation between 1% and 3% until 2011, a rate of price increase of 2.0% has been assumed for plan years 2009 to 2011.

Recognizing past experience, the rate of price increase is assumed to increase from 2.0% for plan year 2012 to 2.4% for 2016.

b) Real¹ Increases in Average Earnings

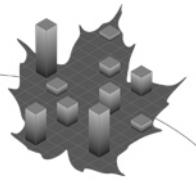
Salary increases consist of a combination of inflation, productivity growth (i.e. real increase in average employment earnings in excess of inflation) and seniority and promotional increases. Under the Reserve Force pension plan, the seniority and promotion is strongly age-based and is therefore considered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

The assumed ultimate productivity rate is 1.1% per annum. One of the key elements underlying the productivity rate assumption is the expected labour shortage due to the aging of the Canadian population and the retirement of the baby boom generation between 2010 and 2030. A growing labour shortage, especially after 2010, is assumed to force higher real wage growth. Labour force growth will weaken as the working age population expands at a slower pace. Real increases in average earnings are assumed to rise gradually from 0.8% in plan year 2011 to reach the ultimate 1.1% per annum in 2013.

c) Real Rate of Return on Fund

For PSPIB assets, it is assumed that the ultimate real rate of return on investments will be 4.3%, net of investment expenses (the ultimate level of inflation being 2.4%). The real rate of return on PSPIB assets takes into account the assumed asset mix of investments as well as the assumed real rate of return for all categories of PSPIB assets. Based on this assumed asset mix, the real rate of return is 4.0% for the next four years, and increases gradually to reach the ultimate 4.3% per annum in plan year 2014.

¹ 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 $1.067/1.024$) rather than 4.3%.



For the period ending December 2007, the following table was prepared based on the Canadian Institute of Actuaries Report on Canadian Economic Statistics 1924-2007.

Period of Years Ending 2007	15	25	50
Level of Inflation	1.88%	2.77%	4.12%
Real Increases in Average Earnings	0.12%	0.16%	0.97%
Real Return on Long-Term Canada Bonds ¹	6.93%	7.39%	3.11%
Average Real Return on Diversified Portfolios	7.52%	7.40%	4.71% ²

2. Derived Economic Assumptions

Table 10 Economic Assumptions³
(As a percentage)

Plan Year	Inflation		Employment Earning Increases				Interest
	CPI Increase	Pension Indexing ⁴	IAAWE	YMPE ⁴	Average Pensionable Earnings ⁵	Maximum Pensionable Earnings ^{4,6}	Yield Projected on Fund
2009	2.0	2.5	3.0	3.1	2.6	4.8	6.0
2010	2.0	2.0	2.7	2.6	4.0	2.6	6.0
2011	2.0	2.0	2.9	2.8	1.5	2.8	6.0
2012	2.0	2.0	3.1	3.0	3.0	3.0	6.0
2013	2.1	2.0	3.2	3.2	3.2	3.2	6.3
2014	2.2	2.1	3.4	3.3	3.3	3.3	6.5
2015	2.3	2.2	3.5	3.5	3.4	3.5	6.6
2016	2.4	2.3	3.6	3.6	3.5	3.6	6.7
2017	2.4	2.4	3.6	3.6	3.5	3.6	6.7
2018	2.4	2.4	3.6	3.6	3.5	3.6	6.7
2023	2.4	2.4	3.6	3.6	3.5	3.6	6.7
2028	2.4	2.4	3.6	3.6	3.5	3.6	6.7
2033	2.4	2.4	3.6	3.6	3.5	3.6	6.7
2038+	2.4	2.4	3.6	3.6	3.5	3.6	6.7

a) 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 the present value of benefits to determine the current service cost and liability. The assumed yield of 6.0% per annum for plan year 2009 is assumed to increase gradually to the ultimate level of 6.7% per annum by plan year 2016. The assumed yield is net of investment expenses debited to the Pension Fund.

¹ Real returns were calculated after the level of inflation is removed geometrically before 1992.

² This average is over the last 48 years.

³ Bold figures denote actual experience.

⁴ Assumed to be effective as at 1 January.

⁵ Assumed to be effective as at 1 April. Exclusive of seniority and promotional increases.

⁶ Calendar year 2008 Maximum Pensionable Earnings is \$155,600



b) Increase in the Year’s Maximum Pensionable Earnings (YMPE)

The YMPE is required in the valuation process because the plan provides a bridge benefit based on career earnings up to the YMPE. The assumed increase in the YMPE for a given year is 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 0.1% higher (beginning with plan year 2015) than the corresponding increase in average pensionable earnings.

c) Maximum Pensionable Earnings (MPE)

The tax-related maximum pensionable earnings were derived based on the maximum annual pension accrual permitted under a registered pension plan in accordance with the *Income Tax Act*. The maximum annual pension accrual of \$2,333.33 for calendar year 2008 will increase to \$2,444.44 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 IAAWE. The MPE is \$155,600 for calendar year 2008.

d) Increase in Pension Indexing Factor

The year’s pension indexing factor is required 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 1, which relates to the assumed Consumer Price Index increases over successive 12-month periods ending on 30 September.

e) Transfer Value Real Interest Rate

The Canadian Institute of Actuaries has recently adopted the Revised Standards of Practice for Pension Commuted Values, effective 1 April 2009. The financial impact of the Revised Standards has been reflected in this valuation. The real interest rates to be used for the computation of commuted values as at a particular date are as follows:

First 10 years: $r_7 + 0.90\%$

After 10 years: $r_L + 0.5 \times (r_L - r_7) + 0.90\%$

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

r_L is the long-term real-return Government of Canada bond yield, annualized

i_L is the long-term Government of Canada benchmark bond yield, annualized and

i_7 is the 7-year Government of Canada benchmark bond yield¹, annualized

The obtained rates of interest are rounded to the next multiple of 0.10%.

¹ It was deemed to be equal to 90% of the long-term Government of Canada benchmark bond yield.



For example, for plan year 2010, the real rates of interest are 3.0% for the first 10 years and 3.4% thereafter. These rates were derived from the assumed 2010 CPI increase and the assumed 2010 long-term Government of Canada benchmark bond yield which corresponds to the new money rate in this valuation.

B. Demographic Assumptions

The Reserve Force pension plan is a very young plan, with very little experience, providing little predictable information for establishing appropriate demographic assumptions. Except where otherwise noted, the experience of the Regular Force members covered under Part I of the CFSA was deemed to be the best source of data to determine the demographic assumptions.

1. New Members

It was assumed that the distribution of new members by age and sex would be the same as that of members with less than one year of service at the valuation date. The total Reserve Force membership under Part I.1 of the CFSA was assumed to remain at the 31 March 2008 level.

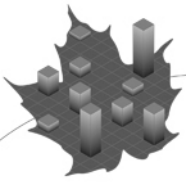
The initial earnings of new male and female members in a given age range in plan year 2009 were assumed to be the same as the corresponding experience in plan year 2008 with an economic salary increase for plan year 2009. The initial earnings were assumed to increase in future years in accordance with the assumption for average earnings increases.

2. Seniority and Promotional Salary Increases

Seniority means length of time within a classification and promotion means moving to a higher paid classification.

Given the pension plan's limited experience, the seniority and promotional increases assumption has been based on the assumption for the Regular Force members as described under the 31 March 2008 Actuarial Report on the Pension Plan for the Regular Force. Since it is believed that the Forces are by nature a hierarchical organization, then it is assumed that the Reserve Force organizational structure would be similar to the Regular Force with regards to rank, salary and promotion within ranks.

However, because the pensionable service for Reserve Force members does not reflect the member enrolment period, the current service-based seniority and promotional assumption for the Regular Force is inappropriate for the Reserve Force valuation. Consequently, the Regular Force seniority and promotional experience study based on service was further studied by age. It is expected that the older a member is, the lesser the seniority and promotional increases.



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The following table provides sample rates seniority and promotional increase.

Table 11 Sample of Assumed Seniority and Promotional Salary Increases
(Percentage of annual earnings)

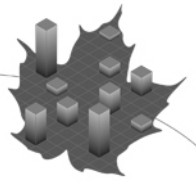
Age	Officer	Other Rank
17	2.2	21.3
18	2.2	17.0
19	4.0	13.6
20	42.7	11.0
21	9.4	8.9
22	5.7	7.3
23	5.0	6.0
24	4.6	5.0
25	4.3	4.2
26	3.9	3.6
30	2.7	2.1
35	1.6	1.4
40	1.1	1.2
45	0.9	1.1
50	0.7	0.8

3. Pensionable Retirement

As previously described, members of the Forces (Regular and Reserve) may qualify for retirement using either their total qualifying Canadian Forces service or the pensionable service to their credit. As at 31 March 2008, the demographic profile of the Reserve Force membership indicates that the majority of members will be qualifying for a retirement benefit based on their pensionable service.

It is assumed that the retirement assumption set in the report on the Pension Plan for the Public Service of Canada as at 31 March 2008, which has been derived on the basis of age and service, is, in the absence of any other reliable information, the best proxy for the retirement assumption of the Reserve Force pension plan, since:

- The majority of Reserve Force members would qualify for benefits that are, by definition, similar to those provided under the Public Service pension plan (PSPP);
- There are similarities between Reserve Force and Public Service members, at comparable age and service, in respect of the incentives to retire that are, to a certain extent, dependent on the financial situation which is, especially for older new employees, directly related to the accumulated level of retirement savings prior to the participation in the pension plan. Indeed, it is assumed that the incentives to retire would be similar for both a new public servant that may start participating in the PSPP at an older age and a long-term Reserve Force member that starts participating in the new Reserve Force pension plan. As at 31 March 2008, the average pensionable service to the credit of members of the Reserve Force is 0.9 year while the average enrolment period is 7.4 years.



The following tables provide sample rates of pensionable retirement.

Table 12 Sample of Assumed Rates of Retirement
(Per 1,000 individuals)

Completed Years of Pensionable Service	Age - Male			Age - Female		
	49	54	59	49	54	59
5	21	44	142	28	44	115
10	15	27	157	14	31	153
15	8	18	169	11	27	197
25	7	13	245	13	28	322
30	15	232	307	19	281	342
35	35	577	417	35	530	307

4. Disability Retirement

The disability incidence rate assumption is the same as the disability incidence rate 3A assumption used to produce the Actuarial Report on the Pension Plan for the Canadian Forces – Regular Force as at 31 March 2008.

Table 13 Sample of Assumed Rates of Pensionable Disability
(Per 1,000 individuals)

Age	Male	Female
25	0.2	0.7
35	0.3	1.7
45	0.4	3.6
55	2.1	6.8
59	3.6	8.2

5. Withdrawal

Withdrawal means ceasing to be a member of the Reserve Force for reasons other than death or retirement with an immediate annuity or an annual allowance.

For the same reasons described in section 3 above, it is assumed that the withdrawal rates that would best suit the Reserve Force pension plan will be those reported in the Actuarial Report on the Pension Plan for the Public Service of Canada as at 31 March 2008. However, the withdrawal rates for members with completed years of pensionable service of less than five years were modified based on the Reserve Force experience covering plan years 2007 and 2008.

All the terminating participants with more than two years of pensionable service are assumed to elect a transfer value rather than a deferred annuity.



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Table 14 Sample of Assumed Withdrawal Rates
(Per 1,000 individuals)

Completed Years of Pensionable Service	Male	Female
0	202	188
1	115	141
2	71	106
3	43	89
4	36	80
5	31	59
6	28	41
7	25	29
8	22	22
9	20	20
10	18	18
15	11	11
20+	9	9

6. Mortality

The mortality rate assumption used is the same as the assumption used to produce the Actuarial Report on the Pension Plan for the Canadian Forces – Regular Force as at 31 March 2008.

Table 15 Sample of Assumed Rates of Mortality
(Per 1,000 individuals)

Age	Participants and Retirement Pensioners			Disability (3A) Pensioners			Surviving Spouses	
	Male		Female	Male		Female	Male	Female
	Officer	Other Rank		Officer	Other Rank			
30	0.5	0.8	0.4	0.7	3.7	0.5	1.1	0.2
40	0.6	0.9	0.5	1.2	4.6	1.1	1.5	0.5
50	1.3	2.7	1.3	7.2	6.4	2.8	3.4	2.4
60	3.9	9.1	3.9	16.6	17.3	7.5	9.6	5.6
70	15.2	26.1	12.4	31.4	43.5	18.9	25.5	13.6
80	58.8	69.1	37.4	70.8	86.8	49.8	66.0	32.0
90	148.7	156.7	112.2	146.6	160.6	130.9	167.5	103.3
100	315.1	328.6	287.3	312.6	288.4	287.2	340.1	331.9
110	500.0	500.0	492.4	500.0	500.0	492.4	500.0	500.0

7. Family Composition

The assumptions regarding spouse survivors are the same as the assumptions used to produce the Actuarial Report on the Pension Plan for the Canadian Forces – Regular Force as at 31 March 2008.



Table 16 Assumptions for Survivor Spouse Allowances¹

Age	Male		Female	
	Probability of an Eligible Spouse at Death of Participant	Spouse Age Difference	Probability of an Eligible Spouse at Death of Participant	Spouse Age Difference
30	0.63	(1)	0.49	1
40	0.75	(1)	0.51	2
50	0.80	(2)	0.52	1
60	0.80	(3)	0.52	0
70	0.74	(3)	0.49	(1)
80	0.62	(4)	0.43	(1)
90	0.40	(6)	0.26	(5)
100	0.16	(9)	0.01	-

The assumptions regarding child survivors are the same as the assumptions used to produce the Actuarial Report on the Pension Plan for the Canadian Forces – Regular Force as at 31 March 2008.

To determine the value of pensions payable to eligible children, the rates of pension termination are assumed to be zero prior to age 17 and 16% per annum thereafter until expiry of the benefit on the 25th birthday.

Table 17 Assumptions for Survivor Children Allowances¹

Age Last Birthday at Death	Male		Female	
	Average Number of Children	Average Age of Children	Average Number of Children	Average Age of Children
30	0.7	5	0.7	5
40	1.0	11	0.8	13
50	0.7	16	0.3	17
60	0.1	18	0.0	-
70	0.0	-	0.0	-

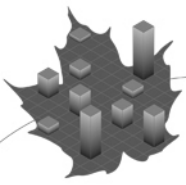
C. Other Assumptions

1. Wage Measure

Under Part I.1 the retirement benefit is based on the career average of the updated earnings. Past earnings are updated using the wage measure as defined in the schedule of the Reserve Force pension plan Regulations. The Regulations also prescribe the wage measures for calendar year 2007 and later as the greater of:

- the standard basic rate of pay for a period of duty or training of six hours or more before any retroactive adjustment — that was prescribed or established under the *National Defence Act* to be paid, on October 1 of the preceding year, to a member at the rank of Corporal (class A), and

¹ Survivor pensions are not payable if the deceased member has less than two years of pensionable service.



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- the wage measure of the previous year.

Table 18 shows the wage measure for calendar years prior to 2010.

Table 18 Wage Measure

<u>Calendar Year</u>	<u>Rate of Pay (\$)</u>	<u>Calendar Year</u>	<u>Rate of Pay (\$)</u>
2009	121.42	1984	38.25
2008	116.70	1983	36.25
2007	113.70	1982	33.25
2006	113.70	1981	29.25
2005	104.18	1980	25.75
2004	104.18	1979	25.75
2003	101.64	1978	24.50
2002	97.72	1977	21.00
2001	89.52	1976	21.00
2000	89.52	1975	17.37
1999	83.42	1974	12.20
1998	80.82	1973	12.20
1997	61.68	1972	12.10
1996	60.36	1971	10.50
1995	60.36	1970	10.10
1994	60.36	1969	7.17
1993	60.36	1968	7.17
1992	58.60	1967	7.17
1991	58.60	1966	7.17
1990	54.50	1965	6.50
1989	50.80	1964	6.50
1988	47.27	1963	6.50
1987	43.90	1962	6.23
1986	41.50	1961	6.23
1985	40.00	1960	5.67

2. Pension Benefits Division/Optional Survivor Benefit/Leave Without Pay

The division of pension benefits has almost no effect on the valuation results because the liability is reduced, on average, by approximately the amount paid to the credit of the former spouse. Consequently, no future pension benefits division was assumed in estimating the current service cost and liability. However, past pension benefits divisions were fully reflected in the liability. Two other provisions, namely the optional survivor benefit and the suspension of membership while on leave without pay, were also treated like pension benefits division for the same reason.

3. Minimum Post-Retirement Death Benefit

This valuation does not take into account the minimum death benefit described in Note 17 of Appendix 1 – D, with respect of deaths occurring after retirement. The resulting understatement of the accrued liability and current service cost is not material



since the majority of the relatively few pensioners who die in the early years of retirement leave an eligible survivor.

4. Administrative Expenses

An analysis of total administrative expenses charged to the Reserve Force Pension Fund since its inception was performed for this valuation. After consulting with DND on the expected trend for administrative expenses over the next five years, the assumption has been set to 1.25% of total pensionable payroll.

Representatives of DND are expecting the annual administrative expenses charged to the Reserve Force Pension Fund to be around 0.4% of total pensionable payroll starting with plan year 2014.

5. Financing of Elected Prior Service

The government credits to the Reserve Force Pension Fund in respect of elected prior service have not been finalized. An analysis of the financial relationship between the participants contributions required in respect of prior service election and the liabilities setup due to the elected service was performed. This analysis has revealed that to properly fund the service election, the government would need to match participants contributions. Therefore this valuation assumed that the government would match participants contributions for elected prior service.

6. Outstanding Terminations

The information provided by DND does not allow us to make an appropriate estimate of the amounts paid from 1 April 2008 onward for terminations that occurred prior to that date. Payments owing to former participants as at 31 March 2008 were ignored in this valuation. A more in-depth analysis will be conducted in the next valuation report scheduled for 31 March 2011.

7. Disability Incidence Rates for Pensioners Under Age 60

Both deferred pensioners and pensioners receiving an annual allowance while under age 60 were assumed to have a 0% disability rate. The resulting understatement of liability and current service cost is negligible.

8. Recovery Rates for Disability Pensioners

No recoveries are assumed for disability pensioners. The resulting overstatement of liability and current service cost is negligible.

9. Sex of Surviving Spouses

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



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Appendix 6 – Detailed Information on Membership Data

Table 19 Male Officers
Number and Average Annual Earnings¹ as at 31 March 2008

Age ²	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	All Years of Service ²
15-19	134								134
	\$7,113								\$7,113
20-24	937								937
	\$11,864								\$11,864
25-29	927	2	1						930
	\$17,445	\$35,133	\$59,815						\$17,529
30-34	728	1	1						730
	\$16,571	\$41,428	\$69,902						\$16,678
35-39	769	1							770
	\$17,515	\$74,871							\$17,590
40-44	653		2						655
	\$19,302		\$63,182						\$19,436
45-49	624								624
	\$17,921								\$17,921
50-54	555							2	557
	\$17,356							\$20,354	\$17,367
55-59	361				3		1	2	367
	\$17,942		\$		\$3,375		\$7,880	\$22,393	\$17,820
>59 ³	180		1	2			1		184
	\$9,711		\$13,586	\$1,667			\$6,004		\$9,625
All Ages	5,868	4	5	2	3	0	2	4	5,888
	\$16,261	\$46,641	\$53,933	\$1,667	\$3,375	\$	\$6,942	\$21,373	\$16,302

	31 March 2008
Average age ² :	35.7 years
Average pensionable service ² :	1.3 years
Annualized pensionable payroll ¹ :	\$87,359,120
Annualized total earnings ¹ :	\$95,987,841

¹ As defined in Note 1 of Appendix 1-D.

² Expressed in completed years calculated at the beginning of the plan year.

³ As at 31 March 2008 these members are treated as pensioners.



Table 20 Male Other Ranks
Number and Average Annual Earnings¹ as at 31 March 2008

Age ²	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	All Years of Service ²
15-19	4,938								4,938
	\$9,510								\$9,510
20-24	5,776	4							5,780
	\$17,246	\$30,286							\$17,255
25-29	2,774	6	1						2,781
	\$19,293	\$31,775	\$2,935						\$19,314
30-34	1,359	1	2						1,362
	\$17,735	\$36,228	\$4,748						\$17,730
35-39	1,072								1,072
	\$17,900								\$17,900
40-44	663	1		1					665
	\$18,617	\$42,427		\$3,682					\$18,630
45-49	491					1			492
	\$18,042					\$1,028			\$18,008
50-54	307				1			1	309
	\$16,469				\$4,356			\$6,165	\$16,397
55-59	128								128
	\$12,515								\$12,515
>59 ³	34								34
	\$3,152								\$3,152
All Ages	17,542	12	3	1	1	1	0	1	17,561
	\$15,469	\$32,538	\$4,144	\$3,682	\$4,356	\$1,028	\$	\$6,165	\$15,476

	31 March 2008
Average age ² :	26.0 years
Average pensionable service ² :	1.0 years
Annualized pensionable payroll ¹ :	\$225,928,530
Annualized total earnings ¹ :	\$271,767,844

¹ As defined in Note 1 of Appendix 1-D.

² Expressed in completed years calculated at the beginning of the plan year.

³ As at 31 March 2008 these members are treated as pensioners.



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Table 21 Female Officers
Number and Average Annual Earnings¹ as at 31 March 2008

Age ²	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	All Years of Service ²
15-19	65								65
	\$6,254								\$6,254
20-24	613								613
	\$8,510								\$8,510
25-29	601	1							602
	\$10,739	\$18,310							\$10,751
30-34	367								367
	\$16,869								\$16,869
35-39	288								288
	\$18,516								\$18,516
40-44	234			1					235
	\$16,778			\$82,459					\$17,058
45-49	231								231
	\$13,168								\$13,168
50-54	172					1	1		174
	\$14,204					\$89,967	\$6,757		\$14,597
55-59	81								81
	\$12,713								\$12,713
>59 ³	36								36
	\$15,022								\$15,022
All Ages	2,688	1	0	1	0	1	1	0	2,692
	\$12,865	\$18,310	\$	\$82,459	\$	\$89,967	\$6,757	\$	\$12,919

<u>31 March 2008</u>	
Average age ² :	33.8 years
Average pensionable service ² :	1.2 years
Annualized pensionable payroll ¹ :	\$30,777,159
Annualized total earnings ¹ :	\$34,778,995

¹ As defined in Note 1 of Appendix 1-D.

² Expressed in completed years calculated at the beginning of the plan year.

³ As at 31 March 2008 these members are treated as pensioners.



Table 22 Female Other Ranks
Number and Average Annual Earnings¹ as at 31 March 2008

Age ²	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	All Years of Service ²
15-19	760								760
	\$10,166								\$10,166
20-24	1,219	1							1,220
	\$17,638	\$46,429							\$17,661
25-29	731	7							738
	\$18,881	\$26,869							\$18,957
30-34	394								394
	\$18,757								\$18,757
35-39	274	1							275
	\$21,848	\$47,579							\$21,941
40-44	187								187
	\$21,274								\$21,274
45-49	150	1							151
	\$24,164	\$47,579							\$24,319
50-54	80								80
	\$19,689								\$19,689
55-59	16								16
	\$21,885								\$21,885
All Ages	3,811	10	0	0	0	0	0	0	3,821
	\$17,301	\$32,967	\$	\$	\$	\$	\$	\$	\$17,342

	31 March 2008
Average age ² :	27.4 years
Average pensionable service ² :	1.1 years
Annualized pensionable payroll ¹ :	\$55,953,063
Annualized total earnings ¹ :	\$66,263,053

¹ As defined in Note 1 of Appendix 1-D.

² Expressed in completed years calculated at the beginning of the plan year.



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Table 23 Male Retirement Pensioners
Number, Total Annual Pension¹ and Total Annual Allowance² as at 31 March 2008

Age ³	Registered Plan			
	Number (#)	Pension Without Indexing (\$)	Pension With Indexation (\$)	Spouse Allowance (\$)
50-54	1	7,182	-	4,237
55-59	1	9,656	-	4,901
60-64	8	-	99,667	49,832
65-69	2	-	4,089	1,635
All Ages	12	16,838	103,756	60,605

	31 March 2008
Average age	60.1 years
Average age at retirement	59.9 years
Total annual pensions payable	\$120,594

Table 24 Female Retirement Pensioners
Number, Total Annual Pension¹ and Total Annual Allowance² as at 31 March 2008

Age ³	Registered Plan			
	Number (#)	Pension Without Indexing (\$)	Pension With Indexation (\$)	Spouse Allowance (\$)
55-59	1	23,891	-	12,891
60-64	1	-	15,988	7,994
All Ages	2	23,891	15,988	20,885

	31 March 2008
Average age	59.5 years
Average age at retirement	59.0 years
Total annual pensions payable	\$39,879

¹ Include deferred annuity to age 60, annual allowance adjustments, PBDA reductions and bridge benefits whether or not they are in effect at the valuation date.

² The amounts of spouse allowance are contingent on there being an eligible spouse.

³ Expressed in completed years calculated at the beginning of the plan year.



Appendix 7 – Acknowledgements

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.

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