



Office of the Superintendent of  
Financial Institutions Canada  
Office of the Chief Actuary

Bureau du surintendant des  
institutions financières Canada  
Bureau de l'actuaire en chef

# **ACTUARIAL REPORT**

on the

# **GOVERNMENT ANNUITIES**

**as at 31 March 2012**



OSFI  
BSIF

Canada 

## Table of Contents

	Page
<b>I. Executive Summary .....</b>	<b>4</b>
<b>II. Introduction.....</b>	<b>6</b>
<b>III. Data.....</b>	<b>7</b>
<b>IV. Methods and Assumptions .....</b>	<b>9</b>
<b>V. Results .....</b>	<b>10</b>
<b>VI. Experience.....</b>	<b>14</b>
<b>VII. Actuarial Opinion .....</b>	<b>15</b>
<b>Appendix 1 - Contract Types.....</b>	<b>16</b>
<b>Appendix 2 - Membership Data .....</b>	<b>18</b>
<b>Appendix 3 - Sources of Data .....</b>	<b>23</b>
<b>Appendix 4 - Mortality Tables.....</b>	<b>24</b>

## Tables

	<b>Page</b>
<b>Table 1</b>	<b>Results Overview..... 4</b>
<b>Table 2</b>	<b>Multipliers for Deferred Pension Amounts ..... 7</b>
<b>Table 3</b>	<b>Balance Sheet..... 10</b>
<b>Table 4</b>	<b>Reconciliation of Assets ..... 11</b>
<b>Table 5</b>	<b>Calculation of Interest ..... 12</b>
<b>Table 6</b>	<b>Development of Actuarial Liabilities ..... 13</b>
<b>Table 7</b>	<b>Gains (Losses)..... 14</b>
<b>Table 8</b>	<b>Membership Data - Contract Types 10-16: Vested Ordinary Life ..... 18</b>
<b>Table 9</b>	<b>Membership Data - Contract Types 20-29: Vested Guaranteed ..... 19</b>
<b>Table 10</b>	<b>Membership Data - Contract Types 30-37: Vested Joint &amp; Survivor ..... 20</b>
<b>Table 11</b>	<b>Membership Data - Contract Types 50 &amp; 80: Vested Certain ..... 20</b>
<b>Table 12</b>	<b>Membership Data - Contract Type 60: Vested Temporary..... 20</b>
<b>Table 13</b>	<b>Membership Data - Contract Types 70-79: Vested Reducing ..... 21</b>
<b>Table 14</b>	<b>Membership Data - Contract Types 10-16: Deferred Ordinary Life..... 21</b>
<b>Table 15</b>	<b>Membership Data - Contract Types 21-24: Deferred Guaranteed ..... 21</b>
<b>Table 16</b>	<b>Membership Data - Contract Type 35: Deferred Joint &amp; Survivor ..... 21</b>
<b>Table 17</b>	<b>Membership Reconciliation ..... 22</b>
<b>Table 18</b>	<b>Mortality Rates..... 24</b>
<b>Table 19</b>	<b>Life Expectancies ..... 25</b>

## I. Executive Summary

### A. Purpose of Report

In accordance with section 15 of the *Government Annuities Improvement Act* (“the Improvement Act”) an actuarial valuation was conducted as at 31 March 2012 for purposes of determining the actuarial liabilities and financial position of the Government Annuities Account (“the Account”). Section 15 of the Improvement Act also states that any surplus or deficit emerging as a result of the actuarial valuation shall be reported and, in the case of a surplus, credited to the Federal Government’s Consolidated Revenue Fund (CRF) and charged to the Account or, in the case of a deficit, charged to the Federal Government’s CRF and credited to the Account.

### B. Data, Method and Assumptions

Data on current retirees, beneficiaries, deferred members, premiums and benefit payments were provided by Human Resources and Skills Development Canada (HRSDC) and gathered through the electronic reports from the Government Annuities Secured Website. The Government Annuities Branch located in Bathurst administers the Annuities as well as the corresponding Website. The data are from a reliable source. We have performed summary tests on the data, and have found that they are accurate, reliable and sufficient for the purposes of the valuation. A description of contract types and a summary of the data are shown in Appendix 1 and Appendix 2 of this report. The actuarial liabilities are the present value of expected future benefits, determined in accordance with accepted actuarial practice. Section 3(4) of the *Government Annuities Regulations* (“the Regulations”) states that the actuarial liability should be determined using an interest rate of 7% per annum and the mortality rates of the Annuity Table for 1983, as modified by Projection Scale G.

### C. Results

The following table summarizes results of the actuarial valuation as at 31 March 2012.

**Table 1 Results Overview**

	<b>As at 31 March 2012</b>	
Assets		\$ 202,775,149
Liabilities		<u>\$ 201,610,590</u>
Surplus (Deficit)		\$ 1,164,559
	<b>Count</b>	<b>Average Annual Pension</b>
Vested Members	47,623	\$ 661
Deferred Members	762	\$ 1,374
Total	<u>48,385</u>	<u>\$ 672</u>

**D. Conclusion**

The surplus of \$ 1,164,559 will be credited to the Federal Government's CRF and charged to the Account. The next valuation will be performed as at 31 March 2013.

## II. Introduction

The Canadian *Government Annuities Act* of 1908 was one of the earliest significant pieces of social legislation in Canada. Its purpose was to encourage Canadians to prepare financially for their retirement. Government Annuities were purchased either by individuals or by employers as pension plans for their employees.

By the 1960's, other social benefit plans, such as Old Age Security (OAS) and the Canada Pension Plan were introduced and began gaining importance in providing Canadians with basic retirement income. The government's recognition that retired Canadians could now be served by other social security programs as well as the private sector brought about the decision to disband the Annuities sales force. In 1975, an Act of Parliament formally ended the sale of Government Annuities. Employers, however, could register new employees under group contracts until 1979. The Government Annuities are not sponsored by the Government – meaning the Government has no fiduciary liability. Its responsibilities are limited to provide and secure benefits in accordance with the contracts provisions.

The Annuities Branch continues to administer contracts under payment and those due to become payable, on behalf of clients from across Canada and around the world. The Account is not subject to any federal or provincial pension legislation, it is only subject to the *Government Annuities Act* and Regulations and the Improvement Act. The assets and liabilities are shown in the Federal Government's General Ledger. The assets are notional and are not subject to any investment policy or performance goals and objectives.

The Office of the Chief Actuary, Office of the Superintendent of Financial Institutions Canada, has the mandate of performing the annual actuarial valuation of the Account as of 31 March 2012. The purpose of the valuation is to establish the Account's liabilities, notional assets, and financial position, based on the statutory valuation assumptions.

### III. Data

#### A. Data Required

Since the actuarial valuation determines both the assets and the liabilities, full details on the members as well as on the cash flows that occurred within the year are needed.

#### B. Member Data

Basic data on pensioners, beneficiaries and deferred members are provided by HRSDC and are retrieved from the Government Annuities Secure Website maintained by the Annuities Branch in Bathurst. The site enables the production of reports which show the member data required to establish the liabilities: certificate number, member, spouse and beneficiaries' gender and dates of birth, annual pension amounts, and form of pension.

The required data reports are VY4741 for vested members (pensioners) and GY5642 for deferred members (members with deferred rights).

##### *Notes on VY4741 Vested Data*

Additional pension amounts data are required from Service Canada concerning the continuing pensions for joint and survivor contracts with percentages other than 50% or 100%, as well as for reducing annuities. VY4741 data does not show the accurate continuing pension amounts for annuities of type 29, 37, and 70-79.

Moreover, manual additions must be done, as the report does not include some members due to data validation issues. This limited number of members is extracted from the VY5141 report. There were 39 such members as at 31 March 2012.

##### *Notes on GY5642 Deferred Data*

Pursuant to the Improvement Act which granted annual accrual of contributions accounts at 7% from 1 April 1975, the following table shows the multipliers that must be applied to the annual original pension amounts:

**Table 2      Multipliers for Deferred Pension Amounts**

Premium Series	Original Interest Rate	Multiplier
4	4.0%	1.22
5	3.0%	1.32
6	3.5%	1.29
7	4.0%	1.22
8	5.0%	1.14

These multipliers reflect the increase between the original interest rate applicable on the contracts and 7%. As the deferred members data only show the pension amounts prior to the enhancements, these multipliers are used to update the annual pensions.

It can be seen that the methodology used to derive these multipliers granted higher increases to contracts with lower interest rates, and vice-versa. The objective sought at the time was to distribute the increases as equitably as possible.

A reconciliation of pension amounts and membership status with last year's membership has been performed. An extensive summary of membership data is shown in the Appendix 2 of this report.

### **C. Asset Data**

Income consists of premiums received, funds reclaimed from the CRF for previously untraceable annuitants, notional earned interest and any transfer needed to cover the actuarial deficit. Payments and other charges represent matured annuities, the commuted value of death benefits, premium refunds and withdrawals, and transfers of actuarial surpluses and unclaimed annuities, related to untraceable annuitants, to the CRF.

All reports used to determine the value of assets are provided by the HRDSC.

A list showing the names and short descriptions of the required reports is given in the Appendix 3 of this report.

The data used are considered to be sufficient and reliable for the purposes of the actuarial valuation.



## IV. Methods and Assumptions

### A. Liability Valuation Method

The actuarial liabilities are associated with two groups of members: vested and deferred. The vested group consists of the participants for whom the pensions are in payment as at 31 March 2012. The deferred group consists of members for whom payment of pensions will start in the future. The liabilities are the actuarial present value of future pension payments, the result of discounting the future expected benefits with interest and post-retirement mortality.

### B. Assumptions

The interest and post-retirement mortality assumptions are statutory, as stated in Sections 15 of the Improvement Act and 3(4) of the Regulations. Namely, the liabilities must be based on a rate of interest of 7% per annum and on the mortality rates of the Annuity Table for 1983, as modified by Projection Scale G, published in Transactions of the Society of Actuaries, Vol. XXXV (1983), at pages 882 and 883. SOR/97-495, s. 2.

Accordingly, the 1983 individual annuity mortality table (IAM83) is used for individual contracts and the 1983 group annuity mortality table (GAM83) is used for group contracts. Both tables are sex-distinct, and are projected for 15 years with Projection Scale G.

Extracts from these mortality tables can be found in the Appendix 4 of this report.

### C. Asset Valuation Method

Since Section 14 of the *Government Annuities Act* states that the moneys received or paid under this act form part of the CRF, the assets are notional. Each year, any difference with the liabilities calculated is either credited (in the case of a surplus) or charged (in the case of a deficit) to the CRF. Therefore, the assets value as at 1 April 2011 is set to be equal to the 31 March 2011 liabilities. The assets value as at 31 March 2012 is obtained by adding interest at 7% on the 1 April 2011 value and adjusting for cash inflows and outflows also at 7% annual interest rate.

## V. Results

### A. Balance Sheet

The following table presents a summary of the financial position of the Account for the 2012 and 2011 fiscal years:

**Table 3 Balance Sheet**

Fiscal Year	2011 – 2012	2010 – 2011
Prescribed Assets as at 1 April	\$ 221,340,103	\$ 243,456,436
Income less Payments and Other Charges	<u>(18,564,954)</u>	<u>(19,907,559)</u>
Assets as at 31 March	202,775,149	223,548,877
Liabilities as at 31 March	201,610,590	221,340,103
<b>Surplus (Deficit) Before Adjustment</b>	<b>\$ 1,164,559</b>	<b>\$ 2,208,774</b>

The surplus of \$ 1,164,559 will be credited to the Federal Government's CRF and charged to the Account. The next valuation will be performed as at 31 March 2013.

**Table 4 Reconciliation of Assets**

Fiscal Year	2011 – 2012	2010 – 2011
<b>Assets as at 1 April</b>	<b>\$ 221,340,103</b>	<b>\$ 243,456,436</b>
<u>INCOME</u>		
Interest to March 31	\$ 14,247,881	\$ 15,688,622
Premiums for Deferred Annuities	11,635	10,924
Unclaimed annuities recovered from CRF	122,670	28,637
Other Receipts <sup>1</sup>	<u>180,712</u>	<u>164,612</u>
<b>TOTAL</b>	<b>14,562,898</b>	<b>15,892,794</b>
<u>PAYMENTS AND OTHER CHARGES</u>		
Vested Regular Annuity Payments	32,818,226	35,473,774
Vested Commuted Values	178,011	212,529
Monies Refunded	68,963	54,510
Values Transferred to CRF (Vested & Deferred)	<u>62,652</u>	<u>59,540</u>
<b>TOTAL</b>	<b>33,127,852</b>	<b>35,800,353</b>
<b>INCOME LESS PAYMENTS AND OTHER CHARGES</b>	<b>\$ (18,564,954)</b>	<b>\$ (19,907,559)</b>
<b>Assets as at 31 March</b>	<b>\$ 202,775,149</b>	<b>\$ 223,548,877</b>

<sup>1</sup> Write-offs, cash summary (net of premiums), IS refunds and receivables.

**B. Calculation of Interest**

The following table outlines the calculation of notional 7% annual interest credited to the account as at 31 March of 2012 and 2011:

**Table 5 Calculation of Interest**

Fiscal Year	2011 – 2012	2010 - 2011
<u>VESTED MEMBERS</u>		
Interest on :		
Prescribed Assets as at 1 April of prior year	\$ 14,748,086	\$ 16,223,181
Maturities	210,722	155,603
CRF Recoveries	2,559	460
Other Receipts	5,759	6,095
Less interest on :		
Annuity Payments	(1,236,778)	(1,299,881)
Commuted Values	(6,645)	(6,936)
Transfers to CRF	0	0
<b>TOTAL VESTED</b>	<b>13,723,703</b>	<b>15,078,522</b>
<u>DEFERRED MEMBERS</u>		
Interest on :		
Prescribed Assets as at 1 April of prior year	745,721	818,769
Premiums	256	442
CRF Recoveries	2,277	449
Less interest on :		
Maturities	(210,722)	(155,603)
Refunds	(12,823)	(49,722)
Transfers to CRF	(531)	(4,235)
<b>TOTAL DEFERRED</b>	<b>524,178</b>	<b>610,100</b>
<b>TOTAL INTEREST</b>	<b>\$ 14,247,881</b>	<b>\$ 15,688,622</b>

**C. Development of Actuarial Liabilities**

The following table outlines the Account's actuarial liabilities by members' category as at 31 March of 2012 and 2011:

**Table 6 Development of Actuarial Liabilities**

Fiscal Year	Contract Type	2011 – 2012	2010 – 2011
<u>VESTED MEMBERS</u>			
Males, Ordinary Life	10 – 16	\$ 100,816,662	\$ 109,782,772
Females, Ordinary Life	10 – 16	42,667,719	46,031,896
Males, Guaranteed	21 – 29	22,827,792	26,225,526
Females, Guaranteed	21 – 29	8,341,080	8,670,397
Last Survivor	30 – 45	14,682,565	16,504,728
Reducing at OAS	70, 74, 78, 79	1,741,472	2,222,001
Annuities Certain	50, 80	943,154	1,170,074
Temporary Annuities	60	27,184	37,763
Suspended Payments		34,233	41,785
<b>VESTED TOTAL</b>		<b>192,081,861</b>	<b>210,686,942</b>
<u>DEFERRED MEMBERS</u>			
Males, Ordinary Life	10	143,168	176,244
Females, Ordinary Life	10	224,196	212,010
Males, Guaranteed	21 - 24	5,585,808	6,444,235
Females, Guaranteed	21 - 24	2,580,396	2,863,534
Last Survivor	35	26,429	24,857
Refunds in Process		19,473	17,626
Suspense Accounts	Account 721	949,259	914,656
<b>DEFERRED TOTAL</b>		<b>9,528,729</b>	<b>10,653,161</b>
<b>TOTAL ACTUARIAL LIABILITIES</b>		<b>\$ 201,610,590</b>	<b>\$ 221,340,103</b>

## VI. Experience

### A. Analysis of Experience

As there are no new contracts purchased under the *Government Annuities Act*, the main sources of experience gains or losses are mortality and retirements of existing vested and deferred members. Mortality gains or losses include changes in expected future payments due to the death or survival of annuitants and the difference between actual and expected benefit payments during the year. In previous valuations, the gains or losses inherent to benefit payments during the year were shown as a separate item. They are now allocated between vested and deferred members' mortality gains or losses.

The table below presents a reconciliation of the surplus between 31 March 2011 and 31 March 2012:

**Table 7 Gains (Losses)**

<b>Surplus as at 31 March 2011</b>		-
Premiums paid with interest	\$ 12,147	
Other receipts with interest	186,471	
Vested members mortality	1,023,917	
Deferred members - retirements, mortality, refunds	(89,208)	
Adjustment to suspense accounts (Account 721)	29,423	
Miscellaneous	1,809	
<b>Surplus as at 31 March 2012</b>		<b>\$ 1,164,559</b>

## VII. Actuarial Opinion

In our opinion, considering that this report is prepared pursuant to the *Government Annuities Act* and the *Government Annuities Improvement Act*:

- the data on which this report is based are sufficient and reliable for the purpose of the valuation;
- the assumptions used comply with legislative requirements and are, in aggregate, reasonable and appropriate;
- the methodology employed is appropriate and consistent with sound actuarial principles; and
- as at 31 March 2012, there is a surplus of \$ 1,164,559 which shall be credited to the Federal Government's Consolidated Revenue Fund and charged to the Government Annuities Account.

This report has been prepared, and our opinions given, in accordance with accepted actuarial practice in Canada.



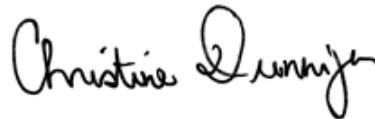
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Michel Millette  
Senior Actuary  
Fellow of the Canadian Institute of Actuaries  
Office of the Chief Actuary, OSFI



---

Mathieu Désy  
Actuary  
Fellow of the Canadian Institute of Actuaries  
Office of the Chief Actuary, OSFI



---

Christine Dunnigan  
Actuarial Officer  
Fellow of the Canadian Institute of Actuaries  
Office of the Chief Actuary, OSFI

Ottawa, Canada  
13 June 2012

## Appendix 1 - Contract Types

The following describes the annuities provisions as specified by the contracts:

**Ordinary Life:** At maturity, this annuity is payable for as long as the annuitant lives, but at death the annuity ceases immediately and there are no death benefits.

**Guaranteed:** The annuity under this contract is payable for life but it is guaranteed for a minimum period of 5, 10, 15 or 20 years.

**Contingent Survivor:** This annuity is based on two lives. The annuity is payable to the principal annuitant for as long as he or she lives. At death, the annuity is payable to the survivor until his or her death.

**Joint and Last Survivor:** This contract differs from the Contingent Survivor contract in that the annuity instalments are payable to both parties. After the death of one partner, the annuity is made payable to the survivor as long as he or she lives.

**Reducing Option:** The Reducing Option is an arrangement whereby the level of the annuity purchased is paid at an increased amount from age 50 (or later) to age 65. At age 65, the annuity decreases by the amount of Old Age Security in effect at the date of maturity. The annuity is payable for life, with death benefits available for the duration of the guaranteed period, if there is one.

The following describes the contract types:

### Single Life - No Guarantee (10 – 16)

10. Ordinary
11. Guarantee expired: on valuation change of 21 – 27
12. From last or contingent survivor: 30, 33, 35, 37
13. From last survivor guarantee expired: on first death of 31
14. From reducing ordinary: on reduction of 70
15. From reducing guaranteed: on reduction of 78 and 79, on valuation change of 28 and 29 or from 71-76 where reduction and end of guarantee coincide
16. From Reducing Survivor: 32, 33, 36, 37

### Single Life with Guarantee (20 – 29)

21. Guaranteed 5 years
22. Guaranteed 10 years
23. Guaranteed 15 years
24. Guaranteed 20 years
29. From 71-75 after reduction still within guarantee



**Joint Lives No Guarantee (30 – 37)**

- 30. Ordinary Last Survivor (100%)
- 31. Last Survivor guarantee expired (100%)
- 35. Contingent Survivor (100%)
- 36. Contingent Survivor reducing by one half at death of Principal Annuitant (50%)
- 37. Contingent Survivor reducing by any other amount at death of Principal Annuitant

**Annuities Certain (50 & 80)**

- 50. Certain level amount (Includes from 80 after reduction)
- 80. Certain, reducing

**Temporary Annuities (60)**

- 60. Temporary

**Reducing Annuities (70- 79)**

- 70. Ordinary, reducing
- 71. Guaranteed 5 years, reducing
- 72. Guaranteed 10 years, reducing
- 73. Guaranteed 15 years, reducing
- 74. Guaranteed 20 years, reducing
- 79. From 71-74, guarantee expired before reduction

## Appendix 2 - Membership Data

### A. Vested members

**Table 8 Membership Data - Contract Types 10-16: Vested Ordinary Life**

<b>AGE</b>		<b>MALES</b>	<b>FEMALES</b>	<b>TOTAL</b>
40-49	Average Pension	630	554	580
	Number	1	2	3
	Average Age	49.0	49.0	49.0
50-59	Average Pension	603	697	657
	Number	42	58	100
	Average Age	56.2	56.5	56.4
60-69	Average Pension	650	601	623
	Number	353	423	776
	Average Age	66.0	65.9	65.9
70-79	Average Pension	575	540	566
	Number	7,168	2,326	9,494
	Average Age	76.1	75.7	76.0
80-89	Average Pension	691	546	651
	Number	16,120	6,155	22,275
	Average Age	84.3	84.8	84.4
90-100	Average Pension	715	534	635
	Number	4,426	3,524	7,950
	Average Age	92.5	93.2	92.8
100 +	Average Pension	691	639	654
	Number	43	106	149
	Average Age	102.3	102.4	102.4
<b>Total Average Pension</b>		665	545	628
<b>Total Number</b>		28,153	12,594	40,747
<b>Total Average Age</b>		83.2	84.8	83.7

**Table 9 Membership Data - Contract Types 20-29: Vested Guaranteed**

<b>AGE</b>		<b>MALES</b>	<b>FEMALES</b>	<b>TOTAL</b>
40-49	Average Pension	-	2,359	2,359
	Number	-	1	1
	Average Age	-	49.0	49.0
	Average guarantee	-	0.3	0.3
50-59	Average Pension	2,065	1,953	2,017
	Number	36	27	63
	Average Age	56.0	55.4	55.7
	Average guarantee	9.5	13.1	11.1
60-69	Average Pension	1,093	1,095	1,094
	Number	756	361	1,117
	Average Age	66.9	66.0	66.6
	Average guarantee	7.9	8.0	7.9
70-79	Average Pension	903	952	910
	Number	1,708	312	2,020
	Average Age	74.3	73.7	74.2
	Average guarantee	3.8	4.3	3.9
80-89	Average Pension	951	865	929
	Number	176	61	237
	Average Age	82.1	82.3	82.2
	Average guarantee	2.0	2.3	2.1
<b>Total Average Pension</b>		976	1,050	992
<b>Total Number</b>		2,676	762	3,438
<b>Average Age</b>		72.5	70.0	71.9
<b>Average guarantee</b>		4.9	6.2	5.2

**Table 10 Membership Data - Contract Types 30-37: Vested Joint & Survivor**

AGE		MALES	FEMALES	TOTAL
60-69	Average Pension	619	324	597
	Number	25	2	27
	Average Age	66.8	68.5	66.9
	Average Spouse Age	63.9	70.0	64.3
	Average Continuing Percentage	94%	100%	95%
70-79	Average Pension	502	276	496
	Number	1,261	39	1,300
	Average Age	75.6	75.3	75.6
	Average Spouse Age	73.1	76.3	73.2
	Average Continuing Percentage	73%	68%	73%
80-89	Average Pension	726	496	723
	Number	1,422	18	1,440
	Average Age	83.5	83.3	83.5
	Average Spouse Age	80.3	83.7	80.3
	Average Continuing Percentage	76%	71%	76%
90+	Average Pension	818	-	818
	Number	180	-	180
	Average Age	91.5	-	91.5
	Average Spouse Age	87.7	-	87.7
	Average Continuing Percentage	80%	-	80%
<b>Total Average Pension</b>		633	345	627
<b>Total Number</b>		2,888	59	2,947
<b>Average Total Age</b>		80.4	77.5	80.4
<b>Average Total Spouse Age</b>		77.5	78.4	77.5
<b>Average Continuing Percentage</b>		75%	70%	75%

**Table 11 Membership Data - Contract Types 50 & 80: Vested Certain**

Average Pension	918
Number	377
Average Certain Period	3.0

**Table 12 Membership Data - Contract Type 60: Vested Temporary**

	MALES	FEMALES	TOTAL
Average Pension	452	521	481
Average Age	61.2	62.0	61.5
Average Period	3.8	3.0	3.5
Number	12	9	21

**Table 13 Membership Data - Contract Types 70-79: Vested Reducing**

	<b>MALES</b>	<b>FEMALES</b>	<b>TOTAL</b>
Average Pension	2,938	2,900	2,919
Average Reduced Pension	1,198	1,287	1,244
Average Age	61.2	61.5	61.3
Number	45	48	93

**B. Deferred Members**

**Table 14 Membership Data - Contract Types 10-16: Deferred Ordinary Life**

	<b>MALES</b>	<b>FEMALES</b>	<b>TOTAL</b>
Average Pension	981	1,442	1,170
Average Age	63.3	62.5	63.0
Number	26	18	44

**Table 15 Membership Data - Contract Types 21-24: Deferred Guaranteed**

	<b>MALES</b>	<b>FEMALES</b>	<b>TOTAL</b>
Average Pension	1,468	1,225	1,386
Average Age	60.0	58.7	59.6
Number	474	243	717

**Table 16 Membership Data - Contract Type 35: Deferred Joint & Survivor**

	<b>MALES</b>	<b>FEMALES</b>	<b>TOTAL</b>
Average Pension	2,160	-	2,160
Average Age	65.0	-	65.0
Number	1	-	1

## C. Membership Reconciliation

**Table 17 Membership Reconciliation**

<b>VESTED</b>							
<b>Contract Types</b>	<b>10-16</b>	<b>20-29</b>	<b>30-37</b>	<b>50&amp;80</b>	<b>60</b>	<b>70-79</b>	<b>Total</b>
31.03.2011 Count	43,732	4,007	3,193	459	27	124	<b>51,542</b>
Maturities	10	105	2	0	1	5	<b>123</b>
Transfers from/to Other Contract Types	828	(611)	(226)	45	0	(36)	<b>0</b>
Deaths or Expired Annuities <sup>1</sup>	(3,826)	(60)	(22)	(126)	(7)	0	<b>(4,041)</b>
Net CRF Transfers	0	(3)	0	(1)	0	0	<b>(4)</b>
Data Additions	3	0	0	0	0	0	<b>3</b>
<b>31.03.2012 Count</b>	<b>40,747</b>	<b>3,438</b>	<b>2,947</b>	<b>377</b>	<b>21</b>	<b>93</b>	<b>47,623</b>
<b>DEFERRED</b>							
31.03.2011 Count							<b>928</b>
Maturities							(123)
Deaths and Refunds							(32)
Net CRF Transfers							(11)
<b>31.03.2012 Count</b>							<b>762</b>

<sup>1</sup> The 4,041 Deaths or Expired Annuities are composed of 2,630 group certificates and 1,411 individual contracts.

## **Appendix 3 - Sources of Data**

### **Reports Required**

The following are the reports used in order to perform the Government Annuities Account valuation. The main reports are provided by the HRSDC.

### **Membership Data**

VY4741P1: Basic Vested Data

VY5141: Vested Annuitants to be added manually (Records to be completed using report VY4742P1)

GY5642: Basic Deferred Data

Service Canada also provides us with accurate pension amounts for plans 16, 37, 70-79, and 29, and additional data for plans 50 and 80. This data consist of pension amounts, reduced pension amounts where applicable, date of reduction and date of final payment. Even though the total actuarial liability is taken directly from VY5141 for plans 50 and 80, it must be individually calculated for purposes of gains and losses analysis.

### **Asset Data**

VM3942: Vested Benefit payments and maturities by period

GY5646, GM4741, and GM4742: Data related to refunds

Premiums paid are provided by Annuity Accounting Division of the HRSDC.

The monthly VM3942 reports are extracted to reconcile Annuity Accounting Division's benefits payments. Ultimately Annuity Accounting Division's figures are used for balance sheet purposes. The monthly GM4741 and GM4742 reports must be extracted both for group and individual contracts.

### **Other Data**

HRSDC also provides balances for suspense accounts (GY5644 and GR3442), refunds in progress (GY5941) and suspended payments (VY5443).

## Appendix 4 - Mortality Tables

### Projection of Mortality

The mortality assumption is statutory, as stated in Sections 15 of the Improvement Act and 3(4) of the Regulations. Mortality rates are to follow the Annuity Table for 1983, as modified by Projection Scale G published in Transactions of the Society of Actuaries, Vol. XXXV (1983), at pages 882 and 883. SOR/97-495, s. 2.

Accordingly, the IAM83 table is used for individual contracts and the GAM83 table is used for group contracts. Both tables are used on sex-distinct basis and are projected for 15 years with Projection Scale G.

The following table shows the mortality rates as well as Projection scale G for selected ages:

**Table 18 Mortality Rates**

AGE	GAM83 ORIGINAL		IAM83 ORIGINAL		PROJECTION SCALE G		GAM83 PROJECTED		IAM83 PROJECTED	
	MALES	FEMALES	MALES	FEMALES	MALES	FEMALES	MALES	FEMALES	MALES	FEMALES
10	0.000293	0.000096	0.000382	0.000141	0.007500	0.012000	0.000262	0.000080	0.000341	0.000118
15	0.000325	0.000140	0.000435	0.000188	0.002200	0.007000	0.000314	0.000126	0.000421	0.000169
20	0.000377	0.000189	0.000505	0.000260	0.001400	0.005000	0.000369	0.000175	0.000494	0.000241
25	0.000464	0.000253	0.000622	0.000349	0.001000	0.006500	0.000457	0.000229	0.000613	0.000316
30	0.000607	0.000342	0.000759	0.000441	0.004900	0.010500	0.000564	0.000292	0.000705	0.000376
35	0.000860	0.000476	0.000917	0.000545	0.015000	0.018500	0.000686	0.000360	0.000731	0.000412
40	0.001238	0.000665	0.001341	0.000742	0.020000	0.022500	0.000914	0.000473	0.000990	0.000527
45	0.002183	0.001010	0.002399	0.001122	0.018500	0.021000	0.001650	0.000735	0.001813	0.000816
50	0.003909	0.001647	0.004057	0.001830	0.017500	0.020000	0.003000	0.001216	0.003113	0.001352
55	0.006131	0.002541	0.005994	0.002891	0.016000	0.018500	0.004813	0.001920	0.004706	0.002185
60	0.009158	0.004241	0.008338	0.004467	0.015000	0.017500	0.007300	0.003254	0.006647	0.003428
65	0.015592	0.007064	0.012851	0.007336	0.015000	0.017500	0.012429	0.005420	0.010244	0.005629
70	0.027530	0.012385	0.021371	0.011697	0.013500	0.017500	0.022452	0.009504	0.017429	0.008976
75	0.044597	0.023992	0.035046	0.020127	0.012500	0.016000	0.036929	0.018836	0.029020	0.015802
80	0.074070	0.042945	0.057026	0.036395	0.012500	0.015000	0.061334	0.034234	0.047220	0.029013
85	0.114836	0.069918	0.090987	0.065518	0.012500	0.015000	0.095090	0.055736	0.075342	0.052228
90	0.166307	0.111750	0.134887	0.113605	0.011000	0.013500	0.140882	0.091139	0.114265	0.092652
95	0.234086	0.182419	0.191214	0.174228	0.010000	0.012500	0.201328	0.151052	0.164455	0.144269
100	0.319185	0.295187	0.270906	0.239215	0.004000	0.005000	0.300561	0.273806	0.255099	0.221888
105	0.469531	0.487816	0.405278	0.353414	0.000000	0.000000	0.469531	0.487816	0.405278	0.353414
110	1.000000	1.000000	0.634814	0.584462	0.000000	0.000000	1.000000	1.000000	0.634814	0.584462



## Life Expectancies

The following table shows life expectancies under the above-stated mortality assumption for selected ages:

**Table 19 Life Expectancies**

AGE	GROUP		INDIVIDUAL	
	MALES	FEMALES	MALES	FEMALES
15	65.4	71.8	67.1	72.2
20	60.5	66.8	62.2	67.3
25	55.6	61.9	57.4	62.4
30	50.7	57.0	52.5	57.5
35	45.9	52.1	47.7	52.6
40	41.0	47.2	42.9	47.7
45	36.2	42.3	38.1	42.8
50	31.6	37.5	33.5	38.0
55	27.1	32.7	29.1	33.3
60	22.8	28.1	24.8	28.7
65	18.7	23.6	20.7	24.3
70	15.0	19.3	16.9	20.0
75	11.8	15.3	13.5	16.0
80	9.1	11.9	10.5	12.4
85	7.0	9.1	8.1	9.3
90	5.3	6.6	6.2	6.9
95	4.0	4.6	4.6	5.1
100	2.8	2.9	3.2	3.6
105	1.9	1.9	2.2	2.5
110	1.0	1.0	1.5	1.6