

The Prison Officers' Pension Fund of New Jersey Annual Report of the Actuary

Actuarial Valuation
July 1, 2016



© 2017 Conduent Business Services, LLC. All rights reserved. Conduent™ and Conduent Design™ are trademarks of Conduent Business Services, LLC in the United States and/or other countries.

Other company trademarks are also acknowledged.

Document Version: \\ftwsdata002a\buckretirement\Client\N\00016 New Jersey Retirement Systems\2016\0001 Prison Officers (POPF)\Valuation Work\AVR\POPF 010517 AS_2016\ValuationReport 2016.docx



500 Plaza Drive
Secaucus, New Jersey 07096-1533

February 3, 2017

Board of Trustees
Prison Officers' Pension
Fund of New Jersey
Trenton, New Jersey

Members of the Board:

The law governing the operation of the Prison Officers' Pension Fund of New Jersey provides for annual actuarial valuations of the Fund. The results of the July 1, 2016 valuation are submitted in this report, which also includes a comparison with the preceding year's valuation.

The valuation shows the financial condition of the Fund as of July 1, 2016 and gives the basis for determining the required annual contribution for the plan year beginning July 1, 2016.

The valuation was prepared on the basis of the same assumptions as were employed for the previous valuation which include a 5.00% per annum rate of investment return.

The State of New Jersey's Division of Pensions and Benefits reported the individual data for members of the Prison Officers' Pension Fund of New Jersey as of the valuation date to the actuaries. While we did not verify the data at their source, we did perform tests for internal consistency and reasonableness. The amount of assets in the trust fund taken into account in the valuation was based on statements prepared for us by the Division of Pensions and Benefits. The accuracy of the results presented in this report is dependent on the accuracy of the data.

Reporting requirements of Statements No. 67 and No. 68 are effective as of June 30, 2014 and June 30, 2015 reporting dates, respectively. These requirements are addressed in separate reports.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. An analysis of the potential range of future results is beyond the scope of this valuation.

Use of this report for any other reason or by anyone other than the Board or staff of the State of New Jersey's Division of Pensions and Benefits may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. You should ask Conduent to review any statement you wish to make on the results contained in this report. Conduent will accept no liability for any such statement made without prior review by Conduent.

I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the Qualification Standards of the Academy to render the actuarial opinions contained herein. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions concerning it. The Table of Contents, which follows, highlights the Sections of the Report.

Respectfully submitted,

A handwritten signature in black ink that reads "Aaron Shapiro".

Aaron Shapiro, F.S.A., E.A., M.A.A.A.
Principal, Consulting Actuary
Conduent
AS/em

Table of Contents

Section I

Summary of Key Results	1
------------------------------	---

Section II

Employee Data	3
---------------------	---

Section III

Assets, Liabilities and Contributions	5
---	---

- A. Market Value of Assets as of June 30, 2016
- B. Reconciliation of Market Value of Assets from June 30, 2015 to June 30, 2016
- C. Development of Actuarial Value of Assets as of July 1, 2016
- D. Accrued Liabilities as of July 1, 2016
- E. Tracking of Unfunded Accrued Liability/(Surplus)
- F. Development of State Contribution
- G. Fund Projection

Section IV

Comments Concerning the Valuation	8
---	---

Appendix A

Brief Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes.....	10
---	----

Appendix B

Outline of Actuarial Assumptions and Methods	12
--	----

Appendix C

Tabulations Used as a Basis for the 2016 Valuation	13
Table 1 – Service Retirements	
Table 2 – Ordinary Disability Retirements	
Table 3 – Accidental Disability Retirements	
Table 4 – Active Members’ Death Benefits	
Table 5 – Retired Members’ Death Benefits	

Section I – Summary of Key Results

The Prison Officer's Pension Fund of New Jersey was established under Chapter 220 of the Laws of 1941 and permitted prison officer members of the then State Employees' Retirement System to transfer to the new Fund. Effective January 1, 1960, the Fund was closed to new employees. This report, prepared as of July 1, 2016, presents the results of the annual actuarial valuation to the Fund.

For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized on the following pages.

Valuation Date	July 1, 2016	July 1, 2015
<u>Participant Data</u>		
Active Members	0	0
Retired Members and Beneficiaries	90	98
Total Participants	90	98
Annual Compensation	\$ 0	\$ 0
Annual Retirement Allowances	\$ 579,478	\$ 651,881
<u>Assets</u>		
Market Value of Assets	\$ 6,111,233	\$ 6,704,568
Actuarial Value of Assets	\$ 6,111,233	\$ 6,704,568
<u>Contribution Amounts</u>		
Recommended		
Normal Contribution	\$ 0	\$ 0
Accrued Liability Contribution	0	0
Total Contribution	\$ 0	\$ 0

The major benefit and contribution provisions of the statute as reflected in the valuation are summarized in Appendix A. There were no changes from the provisions used in the previous valuation.

The actuarial assumption and methods used for valuing the Fund are summarized in Appendix B. There were no changes in actuarial assumption and methods used in the previous valuation.

The combination of the plan provisions, actuarial assumptions and member and beneficiary data is used to generate the overall required level of employer contributions. The required contribution is developed in Section III F.

The valuation also generates a balance sheet which summarizes in some detail the total present and prospective assets and liabilities of the Fund. A summary comparison of the balance sheets as of July 1, 2015 and July 1, 2016 is set forth in the following table.

Section I – Summary of Key Results (continued)

Table I

Comparative Balance Sheet

	2016	2015
<u>Assets</u>		
Actuarial value of assets of Fund	\$ 6,111,233	\$ 6,704,568
Unfunded accrued liability/(surplus)	<u>(2,650,134)</u>	<u>(2,815,044)</u>
Total Assets	\$ 3,461,099	\$ 3,889,524
<u>Accrued Liabilities</u>		
Present value of benefits to present beneficiaries payable from the Retirement Reserve Fund	\$ 3,461,099	\$ 3,889,524
Present value of benefits to present active members	<u>0</u>	<u>0</u>
Total Accrued Liabilities	\$ 3,461,099	\$ 3,889,524

Section II – Employee Data

The data employed for the valuation was furnished to the actuary by the Division of Pensions and Benefits. Appendix C contains summary tables which present the number and retirement allowances of members classified by age. The following summarizes and compares the Fund membership as of July 1, 2016 and July 1, 2015 by various categories.

Active Membership

There has been no active participants in the Plan since July 1, 1994.

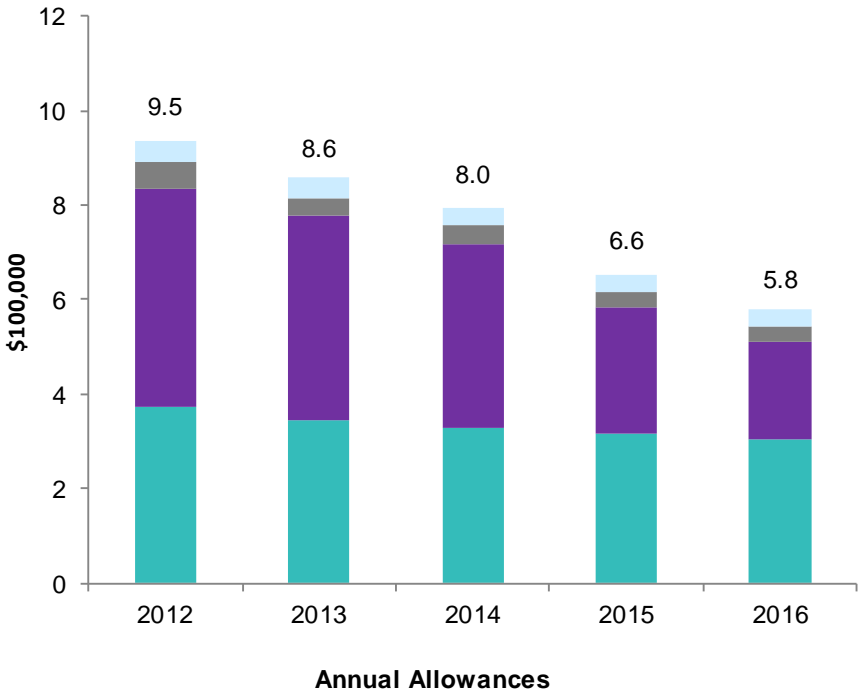
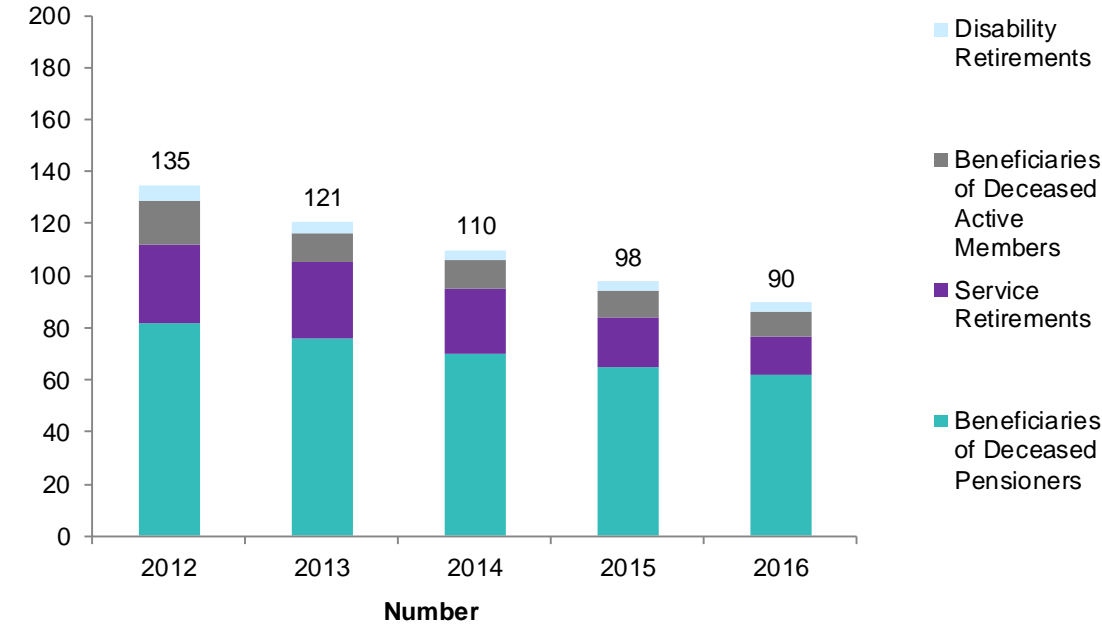
Retired Members and Beneficiaries

Group	2016		2015	
	Number	Annual Allowances	Number	Annual Allowances
Service Retirements	15	\$ 207,173	19	\$ 264,838
Ordinary Disability Retirements	2	\$ 15,356	2	\$ 15,356
Accidental Disability Retirements	2	\$ 19,649	2	\$ 19,649
Active Members' Death Benefits	9	\$ 33,164	10	\$ 35,001
Benefits	62	\$ 304,136	65	\$ 317,037

Graphic presentations of the statistical data on membership for the five preceding years are shown on the following pages.

The Prison Officers' Pension Fund Of New Jersey

Summary of Retired Participants



Section III - Assets, Liabilities and Contributions

A. Market Value of Assets as of June 30, 2016

1. Assets		
a. Cash	\$	206,780
b. Investment Holdings		5,958,633
c. Accrued Interest		10
d. Pension Adjustment Receivable		49,875
e. Total	\$	<u>6,215,298</u>
2. Liabilities		
a. Pension Payroll Payable	\$	28,931
b. Pension Adjustment Payroll Payable		57,395
c. Withholdings Payable		15,157
d. Administrative Expense Payable		1,899
e. Other Accounts Payable		683
f. Total	\$	<u>104,065</u>
3. Receivable	\$	0
4. Market Value of Assets as of June 30, 2016 = (1(e)) - (2(f)) + (3)	\$	<u>6,111,233</u>

B. Reconciliation of Market Value of Assets: June 30, 2015 to June 30, 2016

1. Market Value of Assets as of June 30, 2015	\$	6,704,568
2. Increases		
a. Members' Contributions @ 6%	\$	0
b. State Appropriations		0
c. Pension Adjustment		634,217
d. Investment Income		18,066
e. Total	\$	<u>652,283</u>
3. Decreases		
a. Retirement Allowances	\$	606,090
b. Benefit Expense – Pension Adjustment		634,217
c. Administrative Expenses		5,311
d. Total	\$	<u>1,245,618</u>
4. Receivable	\$	0
5. Market Value of Assets as of June 30, 2016 = (1) + (2(e)) - (3(d)) + (4)	\$	<u>6,111,233</u>

C. Development of Actuarial Value of Assets as of July 1, 2016

1. Actuarial Value of Assets (Retirement Reserve Fund)	\$	6,111,233
2. Pension Adjustment Fund: A(2)(b) - A(1)(d)		<u>7,520</u>
3. Total Ledger Assets	\$	6,118,753

Section III - Assets, Liabilities and Contributions (continued)

D. Accrued Liabilities as of July 1, 2016

1. Active Members		
a. Service Retirement	\$	0
b. Death Before Retirement		0
c. Death After Retirement		0
d. Total	\$	<u>0</u>
2. Service Retirees	\$	1,319,580
3. Disability Retirees	\$	191,057
4. Beneficiaries	\$	1,950,462
5. Total Accrued Liability = 1(d) + (2) + (3) + (4)	\$	3,461,099

E. Tracking of Unfunded Accrued Liability/(Surplus)

1. Unfunded Accrued Liability/(Net Surplus) as of July 1, 2015	\$	(2,815,044)
2. Interest on (1) at 5.00%		(140,752)
3. Contribution received		0
4. Interest on (3) at 5.00%		<u>0</u>
5. Expected Unfunded Accrued Liability/(Surplus) as of July 1, 2016 (1) + (2) - (3) - (4)	\$	(2,955,796)
6. Actual Unfunded Accrued Liability/(Surplus) as of July 1, 2016	\$	<u>(2,650,134)</u>
7. Actuarial Loss/(gain) = (6) - (5)	\$	305,662

Section III - Assets, Liabilities and Contributions (continued)

F. Development of State Contribution

1. Accrued Liability	\$	3,461,099
2. Actuarial Value of Assets	\$	<u>6,111,233</u>
3. Unfunded Accrued Liability/(Net Surplus) = (1) - (2)	\$	(2,650,134)
4. Amortization Years Remaining ¹		1
5. Total State Contribution as of July 1, 2017 = (3) x 1.05; not less than zero	\$	0

¹ The latest unfunded accrued liability payment schedule required the amortization of any plan gains or losses over the remainder of the 14-year period that began on July 1, 1989. Without additional guidance, we have assumed the immediate payment of any unfunded accrued liability

G. Fund Projection

The following is an estimate of the expected receipts and disbursements for the Fund over the next year. The projection is based on the assumptions set forth in Appendix B. All receipts and disbursements are assumed to occur mid-year.

Year	July 1 Fund Balance	State Appropriations	Member Contributions	Pension Payments	Interest
2016	\$ 6,111,233	\$ 0	\$ 0	\$ 556,449	\$ 291,820

Section IV - Comments Concerning the Valuation

A. Components of Actuarial Experience

The variation in liabilities and contributions reflects the Fund's actual experience during the year. The Fund experienced a net actuarial loss during the year that ended June 30, 2016.

The actuarial loss was primarily due to the investment return on actual Fund assets, which was less than expected. For valuation purposes, a 5.00% per annum rate of return on investments was assumed. The actual return on the Fund's actuarial value of assets was approximately 0.28% for the period July 1, 2015 through June 30, 2016. In addition, there was a liability loss.

The following outlines the effect of the primary actuarial experience components:

• Investment (Gain)/Loss	\$	302,063
• Other (Gain)/Loss, including mortality, changes in employee data		<u>3,599</u>
• Total Actuarial (Gain)/Loss	\$	305,662

B. Schedule of Assets and Liabilities

The following presents a ten-year schedule of the System's assets, liabilities and funded ratio. The System's assets and funded ratio are provided on a market value (including receivables) basis and actuarial value of assets (including receivables) basis.

Actuarial Valuation Date	Market Value of Assets (a)	Actuarial Value of Assets (b)	Actuarial Accrued Liability (c)	Funded Ratio	
				Market Value (a)/(c)	Actuarial Value (b)/(c)
6/30/2016	\$ 6,111,233	\$ 6,111,233	\$ 3,461,099	176.6%	176.6%
6/30/2015	\$ 6,704,568	\$ 6,704,568	\$ 3,889,524	172.4%	172.4%
6/30/2014	\$ 7,383,201	\$ 7,383,201	\$ 4,301,307	171.7%	171.7%
6/30/2013	\$ 8,171,920	\$ 8,171,920	\$ 4,748,938	172.1%	172.1%
6/30/2012	\$ 9,044,236	\$ 9,044,236	\$ 5,395,505	167.6%	167.6%
6/30/2011	\$ 9,997,650	\$ 9,997,650	\$ 5,096,792	196.2%	196.2%
6/30/2010	\$ 11,018,367	\$ 11,018,367	\$ 5,635,024	195.5%	195.5%
6/30/2009	\$ 11,986,919	\$ 11,986,919	\$ 6,136,441	195.3%	195.3%
6/30/2008	\$ 12,890,441	\$ 12,890,441	\$ 6,789,017	189.9%	189.9%
6/30/2007	\$ 13,499,361	\$ 13,499,361	\$ 7,378,386	183.0%	183.0%

C. Schedule of Employer Pension Contributions

The following table presents a ten-year schedule that provides information about the System's actuarially determined contribution and the percentage of the actuarially determined contribution recognized by the System as contributed.

Fiscal Year Ending June 30	Actuarially Determined Contribution (a)	Actual Pension Contribution (b)	Contribution Deficiency (a) - (b)	Percentage of Contribution Made	
				Annual (b)/(a)	Five-Year Average
2017	\$ 0	\$ 0	\$ 0	100.0%	100.0%
2016	\$ 0	\$ 0	\$ 0	100.0%	100.0%
2015	\$ 0	\$ 0	\$ 0	100.0%	100.0%
2014	\$ 0	\$ 0	\$ 0	100.0%	100.0%
2013	\$ 0	\$ 0	\$ 0	100.0%	100.0%
2012	\$ 0	\$ 0	\$ 0	100.0%	100.0%
2011	\$ 0	\$ 0	\$ 0	100.0%	100.0%
2010	\$ 0	\$ 0	\$ 0	100.0%	100.0%
2009	\$ 0	\$ 0	\$ 0	100.0%	100.0%
2008	\$ 0	\$ 0	\$ 0	100.0%	100.0%

Appendix A

Brief Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes

Eligibility for Membership

Employees of State penal institutions, employed prior to January 1, 1960 who did not transfer to the Police & Firemen's Retirement System in accordance with Chapter 205 of Public Law 1989. The System no longer accepts new members.

1. Definitions

Plan Year

The 12-month period beginning on July 1 and ending on June 30.

Service

A year is credited for each year an employee is a member of the retirement system.

Average Final Compensation (AFC)

Average annual compensation (or base salary) for 3 years of Service immediately preceding retirement. (Effective June 30, 1996, Chapter 113, P.L. 1997 provided that the amount of compensation used for employer and member contributions and benefits under the program cannot exceed the compensation limitation of Section 401(a)(17) of the Internal Revenue Code.)

Accumulated Deductions

The sum (without interest) of all required amounts deducted from the compensation of a member or contributed by him or on his behalf.

2. Benefits

Service Retirements

25 years of service, or age 55 and 20 years of service. The benefit is a life annuity equal to the greater of A., B., and C. below:

- A. 2% of AFC up to 30 years of service plus 1% for each year in excess of 30 and prior to age 65;
- B. 50% of final pay; and
- C. For a member with 25 years of service, 2% of AFC up to 30 years of service plus 1% for each year in excess of 30.

Vested Retirements

Eligible upon termination of employment. Benefits are summarized as follows:

Termination with 10 or more years of service: Benefit is a deferred life annuity equal to 2% of AFC for service up to 30 years plus 1% for service over 30 years.

Termination with less than 10 years of service: Refund of accumulated deductions.

Appendix A (continued)

Ordinary Disability Retirement

Permanent and total disability for causes other than as a direct result of a traumatic event occurring during the performance of regular or assigned duties. Benefit is an immediate life annuity equal to 1/2 of AFC.

Accidental Disability Retirement

Permanent and total disabled as a direct result of a traumatic event occurring while performing regular or assigned duties. Benefit is an immediate life annuity equal to 2/3 of AFC.

Death Benefits

Death of member of system. Spouse must be married to member prior to retirement, or at least five years before member's death. Benefit is an annuity equal to 25% of member's AFC plus an additional 15% (25%) for one (two or more) surviving dependent child (children). If there is no spouse or if the spouse dies or remarries, 20% (35%, 50%) of AFC to one (two, three or more) surviving child (children). If there is no surviving spouse or children, 25% (40%) of AFC to one (two) dependent parent(s). The provision for a survivor annuity payable to dependent parents does not apply in the death of a retired member of the system.

Minimum benefits: Minimum spousal annuity is \$1,600 per annum. If no other benefit is payable prior to retirement, the member's beneficiary shall receive the accumulated deductibles.

3. Employee Contributions

Each member contributes 6% of compensation.

Appendix B

Outline of Actuarial Assumptions and Methods

Valuation Interest Rate

5.0% per annum, compounded annually.

Deaths After Retirement

RP-2000 Combined Healthy Mortality Tables projected on a generational basis from the base year of 2000 to 2014 using Projection Scale BB as the base tables and the tables will be further projected beyond the valuation date using the Buck Modified 2014 projection scale. RP-2000 disabled retiree mortality table is used for the period after disability retirement for disability retirements. Representative values of the assumed annual rates of mortality are as follows:

Age	Service Pensioners and Beneficiaries*		Disability Pensioners	
	Men	Women	Men	Women
60	0.612%	0.439%	4.204%	2.184%
65	1.076	0.820	5.017	2.803
70	1.797	1.414	6.258	3.764
75	3.062	2.374	8.207	5.223
80	5.209	3.875	10.937	7.231
85	8.964	6.540	14.160	10.020
90	15.710	11.279	18.341	14.005

*Unadjusted for the Buck Modified 2014 projection scale.

Marriage

Husbands are assumed to be 3 years older than wives.

Valuation Method

The unfunded accrued liability (the difference between the present value of benefits and the valuation assets) was determined as of July 1, 1988 and was amortized over the 14-year period beginning July 1, 1989, and ending on July 1, 2002. Each year the amortization payments were adjusted to reflect any experience gains or losses that occurred during the previous plan year. All gains and losses were amortized over the remaining original amortization period. (Without any guidance, we have assumed that any unfunded accrued liability that develops after the July 1, 2001 valuation will be amortized over 1 year.)

Asset Valuation Method

Assets are valued at book value which is equivalent to market value.

Appendix C

Tabulations Used as a Basis for the 2016 Valuation

The following tables give the number and retirement allowances of retired members and beneficiaries classified by age as of July 1, 2016.

Table 1

The Number And Annual Retirement Allowances of Retired Members Distributed By Age As Of July 1, 2016

Service Retirements

Age	Men		Women	
	Number	Amount	Number	Amount
82	1	\$ 25,660		
84	2	26,865		
85	1	19,319		
86	3	52,666		
87	3	33,699		
88	2	19,804		
94	2	19,955		
97	1	9,205		
Total	15	\$ 207,173		

Table 2

The Number And Annual Retirement Allowances of Beneficiaries Distributed By Age As Of July 1, 2016

Ordinary Disability Retirements

Age	Men		Women	
	Number	Amount	Number	Amount
81	1	\$ 7,701		
84	1	7,655		
Total	2	\$ 15,356		

Table 3

The Number And Annual Retirement Allowances of Beneficiaries Distributed By Age As Of July 1, 2016

Accidental Disability Retirements

Age	Men		Women	
	Number	Amount	Number	Amount
88	1	\$ 7,258		
90	1	12,391		
Total	2	\$ 19,649		

Table 4

The Number And Annual Retirement Allowances of Beneficiaries Distributed By Age As Of July 1, 2016

Active Members' Death Benefits

Age	Men		Women	
	Number	Amount	Number	Amount
63			1	\$ 5,174
82	1	\$ 2,976		
83			1	7,622
84			1	3,535
86			1	2,798
87			1	5,431
88			1	2,428
91			2	3,200
Total	1	\$ 2,976	8	\$ 30,188

Table 5

The Number And Annual Retirement Allowances of Beneficiaries Distributed By Age As Of July 1, 2016

Retired Members' Death Benefits

Age	Men		Women	
	Number	Amount	Number	Amount
75			1	\$ 6,210
76			1	7,533
77			1	10,079
78			1	3,894
80			1	9,745
81			3	16,475
82			1	5,466
83			3	15,590
84			2	8,630
85			4	18,625
86			3	13,674
87			4	20,229
88			4	23,889
89			3	12,926
90			2	10,984
91			4	14,980
92			5	39,720
93			4	11,838
94			4	16,173
95			2	7,815
96			5	16,056
98			1	6,952
99			1	1,945
101			1	3,108
115			1	1,600
Total			62	\$ 304,136