

Employees Retirement System of the
State of Rhode Island

ANNUAL REPORT
OF THE
RETIREMENT BOARD

For the Fiscal Year Ended
June 30, 1958

Including a report by the actuary
on an actuarial survey

EMPLOYEES' RETIREMENT SYSTEM OF THE
STATE OF RHODE ISLAND

ANNUAL REPORT
of the
RETIREMENT BOARD

FOR THE FISCAL YEAR ENDED
JUNE 30, 1958

INCLUDING A REPORT ON AN ACTU-
ARIAL SURVEY OF THE OPERATING
EXPERIENCE OF THE SYSTEM AND
AN ACTUARIAL VALUATION.

January 23, 1959

To his Excellency
The Honorable Christopher Del Sesto
Governor, State of Rhode Island
and Providence Plantations
Providence, Rhode Island

Sir:

I take pleasure in submitting herewith,
for transmittal to the General Assembly, the
Annual Report of the Retirement Board of the
Employees' Retirement System of the State of
Rhode Island for the fiscal year ended June 30,
1958.

Respectfully submitted,

Raymond H. Hawksley
Chairman

January 23, 1959

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Annual Report of the Retirement Board of the
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1958.

Respectfully submitted,

Raymond H. Hawksley
Chairman

RETIREMENT BOARD
(as constituted June 30, 1958)

HON. RAYMOND H. HAWKSLEY, CHAIRMAN
General Treasurer

JOSEPH M. BOISVERT
Woonsocket

HON. GEORGE D. GREENHALGH
Chairman, Finance Committee
The Senate

HON. JOHN J. WRENN
Chairman, Finance Committee
House of Representatives

JAMES C. COLTON
Director of Administration

MORTIMER W. NEWTON
Director of Business Regulation

MICHAEL F. WALSH
Commissioner of Education

JAMES E. CONLON
Sup't. South Kingstown School Department

CHARLES W. HILL
Assistant Controller

JOSEPH B. LEWIS
Secretary

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FINANCIAL AND STATISTICAL FACTS

<u>Financial</u>	<u>Fiscal Year Ended June 30</u>	
	<u>1958</u>	<u>1957</u>
Reserves at End of Year	\$30,484,647.00	\$26,290,125.00
Investments	30,355,463.00	25,721,261.35
Total Income for Year	6,747,556.00	5,569,484.26
Member Contributions	2,891,879.00	2,348,342.64
State Contributions	2,094,950.00	1,744,750.00
Contributions by Cities and Towns	801,970.00	713,700.00
Total Expenditures	2,553,033.00	2,227,198.84
Pension and Benefit Payments	2,115,926.00	1,773,251.17
Refunds to Withdrawing Members	437,107.00	430,811.25

Statistical

Number of Members at End of Year:

Male	6,819	6,355
Female	7,768	7,299

Number of Members on Retirement
at End of Year:

Male	293	278
Female	631	575

Number of Retirements During Year	113	147
Deaths Among Retirants During Year	42	48
Deaths Among Members	94	58
Number of Withdrawal Benefits (refunds)	920	1,183

Employees' Retirement System of the
State of Rhode Island

ANNUAL REPORT OF THE RETIREMENT BOARD
FOR THE FISCAL YEAR ENDED JUNE 30, 1958

The Retirement Board of the Employees' Retirement System of the State of Rhode Island presents herewith its annual report for the fiscal year ended June 30, 1958.

This report sets forth the financial condition of the system at June 30, 1958, and the results of operations for the fiscal year ended on that date. The report also contains statistical data reflecting the operating experience of the system and a report by the actuary on an actuarial survey of the operating experience of the system.

MEMBERSHIP STATISTICS

<u>State Employees</u>	<u>Male</u>	<u>Female</u>	<u>Combined</u>
Number at July 1, 1957	4,819	3,309	8,128
Entrants during the year	<u>709</u>	<u>582</u>	<u>1,291</u>
Totals	<u>5,528</u>	<u>3,891</u>	<u>9,419</u>
Less, Separations -			
Deaths	55	19	74
Withdrawals with refund	293	333	626
Retirements	<u>16</u>	<u>13</u>	<u>29</u>
Number at June 30, 1958	<u><u>5,164</u></u>	<u><u>3,526</u></u>	<u><u>8,690</u></u>

	<u>Male</u>	<u>Female</u>	<u>Combined</u>
<u>Teacher-members</u>			
Number at July 1, 1957	1,536	3,990	5,526
Entrants during the year	<u>184</u>	<u>571</u>	<u>755</u>
Totals	<u>1,720</u>	<u>4,561</u>	<u>6,281</u>
Less, Separations -	6	14	20
Deaths	46	248	294
Withdrawals with refund	<u>13</u>	<u>57</u>	<u>70</u>
Retirements			
Number at June 30, 1958	<u>1,655</u>	<u>4,242</u>	<u>5,897</u>

BENEFICIARIES

	<u>Male</u>	<u>Female</u>	<u>Combined</u>
<u>State Employees</u>			
Number at July 1, 1957	200	125	325
Add - Allowances during year	<u>19</u>	<u>18</u>	<u>37</u>
Totals	219	143	362
Deduct - Terminations by death	<u>17</u>	<u>7</u>	<u>24</u>
Number at June 30, 1958	<u>202</u>	<u>136</u>	<u>338</u>
<u>Teacher-members</u>			
Number at July 1, 1957	78	450	528
Add - Allowances during year	<u>14</u>	<u>62</u>	<u>76</u>
Totals	92	512	604
Deduct - Terminations by death	<u>1</u>	<u>17</u>	<u>18</u>
Number at June 30, 1958	<u>91</u>	<u>495</u>	<u>586</u>

RESULTS OF OPERATIONS

Total income for the year was \$6,747,555.00. Expenditures for pension and benefit payments and refunds amounted to \$2,553,033.00. Net income, being the excess of income over expenditures was \$4,194,522.00, resulting in an increase in reserves in that amount. This compares with a net income for the preceding fiscal year of \$3,342,285.00.

Reserves at June 30, 1958, totalled \$30,484,647.00. This compares with the amount of \$26,290,125.00 at the close of the preceding year. A comparison of the members' contribution credits and contingent reserves for the two years is as follows:

	J U N E 3 0 t h	
	<u>1958</u>	<u>1957</u>
Contribution credits -		
State employees	\$8,934,442.00	\$7,822,868.00
Teachers	7,005,794.00	5,923,327.00
Contingent reserve -		
State employees	\$10,400,398.00	\$8,782,643.00
Teachers	4,127,350.00	3,719,817.00

While the foregoing figures reflect progress in the building up of the reserves of the system, the rate of increase

Summary of Changes in Investments

Balance, Investments owned June 30, 1957	\$25,721,261.35
<u>Add: Purchases during current year</u>	<u>4,825,951.65</u>
	\$30,547,213.00
<u>Deduct: Redemptions and sales during current year</u>	<u>191,750.00</u>
Balance, Investments owned June 30, 1958	<u>\$30,355,463.00</u>

Purchases, Redemptions and Sales of Investments During the Year

<u>Type of Investment</u>	<u>Par Value (or cost) Purchases</u>	<u>Per cent of total</u>	<u>Par Value (or cost) Sales & Redemptions</u>	<u>Per cent of total</u>
United States Government	\$ ---	-- %	\$ 30,000.00	15.6%
International Bank for Reconstruction and Development Bonds	100,000.00	2.1	---	--
State of Rhode Island	206,000.00	4.3	---	--
Cities & Towns in Rhode Island	249,000.00	5.2	3,000.00	1.6
Canadian Securities	---	--	20,000.00	10.4
Corporate Bonds - Public Utility, Railroad & Industrial	1,300,000.00	26.9	102,000.00	53.2
Corporate Stocks	1,616,440.55	33.5	36,750.00	19.2
Bank Stocks (at cost)	<u>1,354,511.10</u>	<u>28.0</u>	<u>---</u>	<u>--</u>
Totals	<u>\$4,825,951.65</u>	<u>100.0%</u>	<u>\$191,750.00</u>	<u>100.0%</u>

in reserves, in the case of teacher-members, has not been sufficient to meet the requirements on their account. The increase in contributions by and on behalf of these members, effective July 1, 1958, should bring about a more adequate increase in reserves to meet the expected payments to them in future years.

INVESTMENTS

<u>Type of Investment</u>	<u>Par Value (or Cost)</u>	<u>Per Cent of Total</u>	<u>Per cent of Total Year ago</u>
United States Government	\$14,582,500.00	48.0%	56.8%
International Bank for Reconstruction and Development Bonds	500,000.00	1.6	1.6
State of Rhode Island	470,000.00	1.5	1.0
Cities and Towns in Rhode Island	2,204,000.00	7.3	7.6
Canadian Securities	---	--	0.1
Corporate Bonds - Public Utility, Railroad and Industrial	5,575,000.00	18.4	17.0
Corporate Stocks	3,173,220.50	10.5	6.2
Bank Stocks (at cost)	3,850,742.50	12.7	9.7
Total at June 30, 1958	<u>\$30,355,463.00</u>	<u>100.0%</u>	<u>100.0%</u>

A marked change in the distribution of investments has occurred during recent years. The proportion of United States Government Bonds has been steadily reduced until at June 30, 1958 it stands at 48.0%. Corporate securities, including bonds and stocks, comprise 41.6% of the account. Investments in State and municipal securities, including the International Bank for Reconstruction and Development, are equal to 10.4% of the total security holdings.

A better balance has been established for the investment account between the various types of eligible securities. At the same time, the average yield on investments has been substantially increased.

APPROPRIATIONS

Appropriations by the General Assembly for the fiscal year ended June 30, 1959, with the amounts for the preceding year given for comparison, were as follows:

	<u>1959</u> <u>Fiscal Year</u>	<u>1958</u> <u>Fiscal Year</u>
State Employees	\$1,633,200.00	\$1,314,000.00
Teachers	938,850.00	750,000.00

The appropriation on account of State employees represents 5% of the payroll of the members of the system for the applicable year.

The appropriation for the teacher-members is equal to one-half of the requirements on account of these members. In the case of public school teachers, the State and the cities and towns share equally in the cost of financing pensions.

REVISION OF RATES OF CONTRIBUTION

On December 6, 1957, the Board received a report from the actuary on a redetermination of rates of contribution for the financing of the retirement system covering the period of 10 years dating from July 1, 1957. Such a calculation is required by law to be made every 10 years. The year 1957 represented the tenth anniversary of the operation of the system under its present provisions as to benefits and financing.

In his report, the actuary reviewed the procedures followed in his projection of contributions and benefits for the period of 10 years dating from July 1, 1957 and discussed the pertinent factors involved in such projection, including mortality, turnover, retirements, salary increments and death benefit payments. He presented statistics for the ten years of operations ending June 30, 1957, illustrating the trend in membership, both as to active employees and annuitants, and pension and death benefit payments.

In the light of the past experience and taking into account the underlying trend as disclosed by his projected calculations, the actuary submitted the following recommendations for changes in contribution rates:

1. An increase of $1/2$ of 1% of salaries as to State employees.
2. An increase of 2% of salaries as to teacher-members.

The Board concurred in these recommendations and authorized that the State's contribution rate for State employees be increased from $4-1/2\%$ to 5% of salaries. In the case of teacher-members, the Board authorized an increase in the rate of contribution by teachers from 5% to 6% of salary, and in the rate of employers' contributions (shared equally by the State and by the cities and towns) from 6% to 7% of salaries.

The increase in contributions on account of State employees became operative as of July 1, 1957; the increase on account of teacher-members began as of July 1, 1958, by the approval of appropriate legislation referred to elsewhere in this report.

LEGISLATION

Several bills were enacted at the 1958 session of the General Assembly. These bills are briefly described.

Chapter 79. The rate of contribution on the part of teacher-members was increased from 5% to 6% of salary effective July 1, 1958.

Chapter 208. Any person who has served as the head of the department of education in the State and in the public schools of Rhode Island for a period of at least 36 years, shall be entitled to receive a retirement annuity at age 60 or over equal to 60% of the salary in effect at the date of termination of service.

ACTUARIAL SURVEY

As required by law, an actuarial survey of the operating experience of the system was completed by the actuary as of June 30, 1958, covering the period of 5 years ended on that date.

The purpose of such survey is to study the system's experience and verify the mortality, turnover, salary, interest and other factors that are basic in the valuation of the assets

and liabilities made each year. By such periodic survey, any marked variations in experience from that assumed in the actuarial tables used in the annual valuation can be adjusted in the actuarial tables used in such valuation. Thus, an accurate statement of the financial condition of the system from a technical standpoint may be presented at the end of each fiscal year.

The report of the actuary on this survey is presented in the latter part of this annual report of the Board, together with the results of the annual valuation. Appropriate comments are made relative to the system's experience and the progress made in operations.

CONCLUDING COMMENTS

The system is fulfilling its objectives and provides a satisfactory measure of retirement, disability and death benefit coverage for employees of the State and for public school teachers.

By affirmative action, under the method prescribed by the federal law, a substantial majority of the State employees are now covered by the old-age, survivors, and disability insurance system of the Federal Social Security Act. The State of Rhode Island has joined the several States that have ex-

tended the provisions of the federal program to its employees without any diminution of benefits of the retirement system. Teachers of the cities and towns have not availed themselves of social security coverage and have only the benefits of the retirement system.

This dual program for State employees will call for increasing contributions on the part of the State and the employees in future years with the State assuming the major part of the future cost increases. Under these circumstances, in view of the obligations imposed on the State, liberalizing proposals aimed at increasing benefits or expanding qualifying conditions should be discouraged. The dual program gives the State employees an adequate measure of security for superannuation, death and disability under plans that compare most favorably with similar plans in effect for other public employees, particularly employees of State governments.

Retirement Board
Employees' Retirement System of the
State of Rhode Island

Chairman

Secretary

Employees' Retirement System of the
State of Rhode Island

FINANCIAL BALANCE SHEET - JUNE 30, 1958

A S S E T S

Cash	\$ 129,184.00
Investments	<u>30,355,463.00</u>
<u>Total Assets</u>	<u>\$30,484,647.00</u>

R E S E R V E S

Reserve for Special Pension Increases	\$ 16,661.32
Annuity Savings Reserve:	
State Employees	8,934,442.54
Teachers	<u>7,005,794.41</u>
Contingent Reserve:	
State Employees	10,400,398.71
Teachers	<u>4,127,350.02</u>
<u>Total Reserves</u>	<u>\$30,484,647.00</u>

Employees' Retirement System of the
State of Rhode Island

Statement of Cash Receipts and Disbursements
for the Fiscal Year ended June 30, 1958

Cash Balance July 1, 1957 \$ 568,864.00

Receipts:

State Contributions -		
Employees	\$1,342,200.00	
Teachers	752,750.00	
Cities and Towns Contributions -		
Teachers	801,970.00	
Member Contributions -		
Employees	1,520,503.00	
Teachers	1,371,376.00	
Income on Investments	975,566.00	
Refunds	7.00	
Transfer - Special Account	622.00	
Investments (Matured)	5,645.00	
Investments Sold	<u>191,750.00</u>	
<u>Total Receipts</u>		<u>6,962,389.00</u>
<u>Total Available</u>		<u>\$7,531,253.00</u>

Disbursements:

Refunds due to resignations -		
State Employees	\$ 298,860.00	
Teachers	138,247.00	
Pensions Paid -		
State Employees	566,100.00	
Teachers	1,526,609.00	
Pension Increases	23,217.00	
Purchase of Investments	4,825,952.00	
Accrued Interest on		
Investments Purchased	7,990.00	
Premium or Discount on		
Investments Purchased (Net)	13,743.00	
Discount on Investments Sold	<u>1,351.00</u>	
<u>Total Disbursements</u>		<u>7,402,069.00</u>
Cash Balance June 30, 1958		<u>\$ 129,184.00</u>

Employees' Retirement System of the
State of Rhode Island

INVESTMENTS OWNED - JUNE 30, 1958

DESCRIPTION	RATE	MATURITIES	PAR VALUE (BONDS) OR COST (STOCKS)
United States of America:			
Savings Bonds, Series B	2-3/4%	4/ 1/80	\$3,450,000
Savings Bonds, Series G	2-1/2	9/ 1/59	100,000
Savings Bonds, Series G	2-1/2	7/ 1/60	750,000
Savings Bonds, Series G	2-1/2	12/ 1/61	100,000
Savings Bonds, Series G	2-1/2	2/ 1/62	100,000
Savings Bonds, Series G	2-1/2	10/ 1/62	1,000,000
Savings Bonds, Series G	2-1/2	1/ 1/64	100,000
Savings Bonds, Series G	2-1/2	3/15/70	195,000
Savings Bonds, Series G	2-1/2	7/ 1/66	100,000
Savings Bonds, Series K	2.76	3/15/59-57	30,000
Treasury Bonds	2-3/8	11/15/61	130,000
Treasury Bonds	2-1/2	12/ 1/68-63	100,000
Treasury Bonds	2-1/2	12/15/68-63	2,750,000
Treasury Bonds	2-1/2	12/15/69-64	100,000
Treasury Bonds	2-1/2	3/15/71-66	250,000
Treasury Bonds	2-1/2	6/15/72-67	2,550,000
Treasury Bonds	2-1/2	9/15/72-67	97,500
Treasury Bonds	2-1/2	12/15/72-67	700,000
Treasury Bonds	2-3/4	12/15/65-60	90,000
Treasury Bonds	3-1/4	6/15/83-78	1,825,000
			\$14,517,500
The Twelve Federal Land Banks:			
Consolidated Federal Farm Loan	2-1/4	5/ 1/59	\$ 15,000
Consolidated Federal Farm Loan	2-1/2	6/ 1/60	50,000
			65,000
State of Rhode Island:			
Blackstone Valley Sewer District Loan of 1952:			
Series B	2-1/2	5/ 1/86	\$ 50,000
Series C	2-3/4	8/ 1/83	120,000
Series D	4	9/ 1/75	100,000
Highway Improvement Loan of 1955:			
Series A	3-1/4	3/ 1/84	50,000
Series B	3-1/4	3/ 1/85	100,000
Penal and Charitable Institutions	4	3/ 1/77	10,000
State Office Building - Registered	4	6/ 1/77	12,000
Third Courthouse Loan	4	3/20/81	22,000
Washington Bridge Loan	4	5/ 1/77	6,000
Forward			470,000
			\$15,052,500

INVESTMENTS OWNED - JUNE 30, 1958 - continued

DESCRIPTION	RATE	MATURITIES	PAR VALUE (BONDS) OR COST (STOCKS)
Forwarded			\$15,052,500
City of Central Falls:			
Refunding	2-3/4%	6/ 1/66-67	\$ 13,000
Refunding	2.90	6/ 1/73-74	7,000
Refunding	3.90	8/ 1/71	35,000
School	2-1/4	7/ 1/68	10,000
			65,000
City of Cranston:			
Construction and Equipment	1-3/4	7/ 1/63	\$ 10,000
School, Series A	2-1/2	6/ 1/76	45,000
School, Series E	2.70	2/15/78-79	68,000
School, Series C	2.90	11/15/76-78	70,000
School, Series B	3.60	7/ 1/69-76	65,000
Sewerage, Series E	1-3/4	10/ 1/80-81	5,000
Sewerage, Series H	1.80	3/ 1/76	10,000
Sewerage, Series D	2	6/ 1/78	4,000
Sewerage, Series I	2-1/2	6/ 1/76	15,000
			292,000
Town of Cumberland:			
School	3-1/2	5/15/77-79	\$ 90,000
School	4.60	10/15/71-72	45,000
Water Supply Installation	1.90	1/ 1/76	3,000
Water	3-1/2	5/15/77-79	60,000
			198,000
Town of East Providence:			
Elementary School	3.75	2/ 1/78	\$ 15,000
School Building	2.20	3/ 1/72	25,000
School Building	2-1/2	7/ 1/70	25,000
School Building	3-1/2	4/ 1/69	7,000
Sewer Trunk Extension	2-1/2	7/ 1/70-76	48,000
Sewer	2.70	2/ 1/67	95,000
Sewer	3-1/2	4/ 1/65-69	145,000
Street and Drainage	2.70	2/ 1/67	5,000
Street and Drainage	3.75	2/ 1/76-78	45,000
			410,000
Town of Glocester:			
School Construction and Extension	2.70	8/ 1/67-69	30,000
Town of Hopkinton:			
School Building and Equipment	2-3/4	12/ 1/82-84	20,000
Town of Jamestown:			
School Construction	3	12/ 1/72-74	30,000
Forward			\$16,097,500

INVESTMENTS OWNED - JUNE 30, 1958 - continued

DESCRIPTION	RATE	MATURITIES	PAR VALUE (BONDS) OR COST (STOCKS)
Forwarded			\$16,097,50
Town of Johnston: Sanitary District Sewer School	3-1/2% 2.90	9/ 1/87 9/ 1/65-74	\$ 50,000 107,000
Town of Lincoln: Elementary School Build- ing and Equipment Junior High School Building and Equipment	3-1/2 2.35	3/ 1/76 3/ 1/67	\$ 30,000 15,000
Town of Narragansett: Beach Development Beach Repair School Construction	3 2.70 3.70	4/ 1/59-63 1/ 1/77-80 5/ 1/82	\$ 21,000 48,000 34,000
City of Newport: Sewer and Anti- Pollution Water Works	3.70 2-1/4	7/ 1/76 3/ 1/68-70	\$ 15,000 9,000
Town of North Kingstown: Land Purchase and School Building School	3.50 2.75	4/ 1/76 2/ 1/65	\$ 60,000 15,000
Town of North Providence: Funding Funding Funding Highway Reconstruction Sewer Sewer Sewer	3 3 3-1/2 3-1/2 3 3 3-1/2	7/ 1/62-72 6/ 1/72-73 7/ 1/75 7/ 1/63-76 9/ 1/67 6/ 1/72-74 7/ 1/63	\$ 32,000 10,000 15,000 75,000 35,000 15,000 5,000
City of Pawtucket: Park Refunding Water	2-1/4 2-3/4 2-5/8	7/ 1/60-61 6/ 1/68 9/ 1/67	\$ 20,000 3,000 5,000
Town of Portsmouth: Fire District Water	4-1/4	5/ 1/76-79	65,000
Forward			\$16,781,500

INVESTMENTS OWNED - JUNE 30, 1958 - continued

DESCRIPTION	RATE	MATURITIES	PAR VALUE (BONDS) OR COST (STOCKS)
Forwarded			\$16,781,500
City of Providence: Fire Department Modernization Highway Construction Sewer Construction Water Supply Water Supply	2 % 2 2 4 4-1/4	1/ 1/74 1/ 1/74 1/ 1/74 1/ 3/68 2/ 1/64	\$ 20,000 4,000 16,000 35,000 46,000
Town of Richmond: School	4	4/ 1/59-62	4,000
Town of Smithfield: School	2-3/4	6/ 1/67-76	50,000
City of Warwick: Highway School School School Water	2.40 2.70 3.10 3-1/4 4-1/2	10/ 1/73-74 12/ 1/84-86 12/ 1/68 10/ 1/79 10/ 1/72-73	\$ 35,000 30,000 2,000 5,000 24,000
Town of Westerly: School	4.20	9/ 1/69-70	50,000
Town of West Warwick: School Sewer Sewer Sewer	2-3/4 2-1/2 2.70 2-3/4	11/ 1/58 7/ 1/58-71 7/ 1/78-79 2/ 1/63	\$ 3,000 28,000 30,000 15,000
City of Woonsocket: Junior High School Sewer Water	4-1/4 4-1/2 4-1/4	4/15/71-77 6/ 1/72-74 6/ 1/66	\$ 48,000 25,000 5,000
American Telephone & Telegraph Co.: Debentures Debentures Debentures Debentures	3-3/8 3-7/8 4-3/8 5	12/ 1/73 7/ 1/90 4/ 1/85 11/ 1/83	\$ 200,000 100,000 200,000 50,000
Appalachian Electric Power Co.: First Mortgage First Mortgage First Mortgage	3-1/4 4 4-5/8	12/ 1/70 5/ 1/88 3/ 1/87	\$ 20,000 100,000 25,000
Forward			\$17,951,500

INVESTMENTS OWNED - JUNE 30, 1958 - continued

DESCRIPTION	RATE	MATURITIES	PAR VALUE (BONDS) OR COST (STOCKS)	
Forwarded				\$17,951,50
Atchison, Topeka and Santa Fe: General Mortgage	4 %	10/ 1/95		10,00
Baltimore & Ohio Railroad Company: First Consolidated Mortgage, Series B	4	9/ 1/80		50,00
Beacon Associates, Inc.: Sinking Fund Subordinated Debentures	5-3/4	1/ 1/70		100,00
Bethlehem Steel Corporation: Consolidated Mortgage, Sinking Fund, Series K	3	1/ 1/79		100,00
Boston & Maine Railroad Co.: Equipment Trust	6	3/ 1/67		25,00
G. I. T. Financial Corp.: Temporary Debentures	3-5/8	9/ 1/70	\$ 100,000	
Debentures	4-1/4	10/ 1/71	100,000	200,00
Central Maine Power Co.: First and General Mortgage	3-3/8	4/ 1/85	\$ 50,000	
First and General Mortgage	3-1/2	10/ 1/70	18,000	68,00
Chesapeake and Ohio Railway Co.: Equipment Trust	2-7/8	12/ 1/61	\$ 50,000	
Equipment Trust	3	2/20/60-70	100,000	
Refunding and Improvement Mortgage, Series E	3-1/2	8/ 1/96	9,000	
Refunding and Improvement Mortgage, Series H	3-7/8	12/ 1/73	94,000	253,00
Chicago and Union Station: First Mortgage, Series F	3-1/8	7/ 1/63		10,00
Chicago Burlington & Quincy Railroad Co.: First and Refunding Mortgage	2-7/8	8/ 1/70		50,00
Forward				\$18,817,500

INVESTMENTS OWNED - JUNE 30, 1958 - continued

DESCRIPTION	RATE	MATURITIES	PAR VALUE (BONDS) OR COST (STOCKS)	
Forwarded				\$18,817,500
Chicago, Milwaukee, St. Paul & Pacific Railroad Co.: Equipment Trust, Series UU	3-3/8%	7/ 1/59		100,000
Columbia Gas System, Inc.: Debentures, Series E	3-5/8	9/ 1/80		100,000
Commonwealth Edison Company: Sinking Fund Debentures	3-1/8	10/ 1/2004		75,000
Consolidated Edison Company: First Refunding Mortgage	5	10/ 1/87		50,000
Continental Oil Co.: Sinking Fund Debentures	3	11/ 1/84		100,000
Detroit Edison Company: Refunding Mortgage	3-1/4	5/15/80		100,000
Douglas Aircraft Co., Inc.: Convertible Subordinate Debentures	4	2/ 1/77		10,000
Duke Power Company: First Mortgage Refunding	3	1/ 1/75		100,000
Duquesne Light Company: First Mortgage	3-1/8	7/ 1/84		50,000
Florida Light and Power Co.: First Mortgage	3-1/8	6/ 1/78		100,000
General Electric Company: Debentures	3-1/2	5/ 1/76		100,000
General Motors Acceptance Corp.: Debentures	3-1/2	3/15/72	\$ 150,000	
Debentures	3-5/8	9/ 1/75	100,000	
Debentures	4	3/ 1/79	100,000	
Debentures	5	8/15/77	25,000	375,000
Forward				\$20,077,500

INVESTMENTS OWNED - JUNE 30, 1958 - continued

DESCRIPTION	RATE	MATURITIES	PAR VALUE (BONDS) OR COST (STOCKS)	
Forwarded				\$20,077,500
General Telephone Co. of California First Mortgage	4-1/2%	9/ 1/86	\$ 50,000	
First Mortgage	5	6/ 1/87	<u>50,000</u>	100,000
Gulf, Mobile, and Ohio Railroad Co.; Equipment Trust, Series G	3-1/8	3/ 1/62		10,000
Illinois Bell Telephone Co. First Mortgage, Ser.C	3-1/8	4/ 1/84	\$ 45,000	
First Mortgage	4-1/4	3/ 1/88	<u>50,000</u>	95,000
International Bank for Reconstruction and Development: Bonds	3-1/2	10/15/71	\$400,000	
Bonds	4-1/4	1/ 15/79	<u>100,000</u>	500,000
Long Island Lighting Co First Mortgage Ser.H	3-3/8	11/ 1/85		50,000
Mount Hope Bridge Auth. Bridge Revenue	2.60	12/ 1/69		150,000
Narragansett Electric Co. First Mortgage Ser A	3	9/ 1/74	\$ 8,000	
First Mortgage Ser E	3-1/2	3/ 1/86	<u>200,000</u>	208,000
National Tea Company Sinking Fund Debentures	5	8/ 1/77		40,000
New Jersey Bell Telephone Debentures	3-1/4	5/ 1/84	\$100,000	
Debentures	4-7/8	9/ 1/93	<u>50,000</u>	150,000
New York Central Railroad Equipment Trust	3-5/8	9/15/59-60	\$100,000	
Second Equipment Trust of 1952	3-1/8	5/15/63	<u>3,000</u>	103,000
Forward				<u>\$21,483,500</u>

INVESTMENTS OWNED - JUNE 30, 1958 - continued

DESCRIPTION	RATE	MATURITIES	PAR VALUE (BONDS) OR COST (STOCKS)	
Forwarded				\$21,483,500
New York, New Haven, & Hartford Railroad Co.; Equipment Trust, Series A	3-3/4%	1/ 1/63-66		70,000
New York Telephone & Telegraph Co.; Refunding Mortgage Series H	3	10/15/89		100,000
Niagara Mohawk Power Company: General Mortgage	3-7/8	6/ 1/88		200,000
Northern Pacific Railway Co Equipment Trust	3-1/8	2/16/69		100,000
Pacific Gas & Electric Co.; First and Refunding Mortgage, Series Z	3-3/8	12/1 /88	\$ 50,000	
First and Refunding Mortgage	4-1/2	12/1 /86	<u>50,000</u>	100,000
Pacific Telephone & Telegraph Co.: Debentures	3-1/8	11/15/89	\$ 50,000	
Debentures	3-5/8	8/15/91	50,000	
Debentures	4-3/8	8/15/88	<u>100,000</u>	200,000
Pennsylvania Electric Co.: First Mortgage	3-1/8	3/ 1/84		90,000
Pennsylvania Railroad Co.: General Mortgage Series A	4-1/2	6/ 1/65		12,000
Philadelphia Electric Co. First Refunding Mortgage	3-1/8	4/ 1/85		50,000
Phillips Petroleum Co.: Sinking Fund Debentures	2-3/4	2/ 1/64		27,000
Proctor & Gamble Corp.: Debenture	3-7/8	9/ 1/81		25,000
Forward				<u>\$22,457,500</u>

INVESTMENTS OWNED - JUNE 30, 1958 - continued

DESCRIPTION	RATE	MATURITIES	PAR VALUE (BONDS) OR COST (STOCKS)
Forwarded			\$22,457,500
Public Service Company of New Hampshire: First Mortgage, Series H	3-1/4%	11/ 1/84	75,000
Public Service Electric & Gas Co.: Debenture	4-5/8	3/ 1/77	50,000
Seaboard Air Line Railroad Co.: Equipment Trust, Series P	2-7/8	11/ 1/69	\$ 50,000
Equipment Trust, Series K	3	11/15/65	<u>10,000</u>
Sears, Roebuck Acceptance Corporation: Debentures	5	7/15/82	50,000
Southern Bell Telephone & Telegraph Company: Debentures	5	6/ 1/86	50,000
Southern California Gas Company: First Mortgage, Ser. C	5-1/8	7/ 1/83	60,000
Southern Pacific Company Equipment Trust, Ser. NN	2-5/8	4/ 1/68	\$ 10,000
Equipment Trust, Ser. RR	3-1/8	9/ 1/68	<u>50,000</u>
Southern Railway Company: Equipment Trust, Ser. TT	3	8/ 1/63	10,000
Southwestern Public Service Company: First Mortgage	3.35	2/1/81	50,000
Standard Oil Company of New Jersey: Debentures	2-3/8	5/15/71	100,000
Tennessee Gas Transmission Co.: First Mortgage Pipe Line	3-7/8	2/ 1/76	\$ 50,000
First Mortgage Pipe Line Forward	4-3/4	11/ 1/76	<u>73,000</u>
			<u>123,000</u>
			\$23,145,500

INVESTMENTS OWNED - JUNE 30, 1958 - continued

DESCRIPTION	RATE	MATURITIES	PAR VALUE (BONDS) OR COST (STOCKS)
Forwarded			\$23,145,500
The Texas Company: Debentures	3-5/8%	5/1/ 83	25,000
Texas, New Mexico Railway Co.: Equipment Trust, Series A	2-3/4	5/1/ 61	10,000
Wabash Railroad Company: Equipment Trust, Series D	2-3/4	1/1/ 63	\$ 10,000
Equipment Trust, Series G	3	4/1/ 67	<u>50,000</u>
Washington Water Power Co.: First Mortgage	3-1/2	6/1/ 64	16,000
Wisconsin Public Service Corp.: First Mortgage	3-1/4	10/1/ 84	50,000
Wisconsin Telephone Company: Debentures	4-1/2	7/1/ 92	25,000
Blackstone Valley Gas & Electric Co.: 5.6% Preferred - 1,000 shares			101,820
Boston Edison Company - 4.25% Cumulative Preferred - 500 Shares			50,813
Brockton Edison Company 6.40% Preferred - 1,000 Shares			109,000
Narragansett Electric Company - 4-1/2% Cumulative Preferred - 2,200 Shares			106,700
Southern California Edison Co. - 4.24% Cumulative Preferred - 2,000 Shares			51,100
4.78% Cumulative Preferred - 1,500 Shares			38,325
Forward			<u>38,325</u>
			\$23,789,258

INVESTMENTS OWNED - JUNE 30, 1958 - continued

<u>DESCRIPTION</u>	<u>PAR VALUE (BONDS) OR COST (STOCKS)</u>
Forwarded	\$23,789,258
Affiliated Fund, Inc. - 41,200 shares	251,031
Bank of America - 6,200 shares	232,554
Bankers Trust Company of New York - 1,600 shares	90,357
Boston Fund, Inc. - 21,900 shares	354,129
Chase Manhattan Bank - New York - 3,100 shares	141,675
Chemical Corn Exchange Bank Co., New York - 2,100 shares	85,969
Continental-Illinois National Bank & Trust Company of Chicago 3,400 shares	270,096
Diversified Investment Fund, Inc. - 21,700 shares	200,995
First City National Bank, Houston - 653 shares	29,954
First National Bank of Boston - 2,100 shares	133,559
First National City Bank of New York - 2,100 shares	107,617
First Pennsylvania Banking & Trust Company - 500 shares	21,450
Franklin National Bank - New York - 1,000 shares	25,250
Fundamental Investors, Inc. - 29,500 shares	461,896
General Motors Corporation - 3,000 shares Forward	94,444
	<u>\$26,290,234</u>

INVESTMENTS OWNED - JUNE 30, 1958 - continued

<u>DESCRIPTION</u>	<u>PAR VALUE (BONDS) OR COST (STOCKS)</u>
Forwarded	\$26,290,234
Gorham Manufacturing Co. - 2,000 shares	52,000
Guaranty Trust Company of New York - 6,100 shares	405,849
The Hanover Bank - New York 1,200 shares	41,679
Incorporated Income Fund - 19,300 shares	152,568
Incorporated Investors - 29,000 shares	252,244
Industrial National Bank of Providence - 18,700 shares	499,274
Iowa Electric Light & Power Co. - 1,700 shares	49,300
Irving Trust Company - New York - 7,200 shares	197,657
Manufacturers Trust Co. - New York - 2,000 shares	82,712
Marine Midland Corporation - 300 shares	5,696
Massachusetts Investors Trust - 19,400 shares	219,691
Merchants National Bank of Boston - 1,500 shares	65,000
National Shawmut Bank of Boston 2,100 shares	99,312
National Steel Corporation 500 shares	33,500
New York Trust Company New York - 400 shares Forward	23,125
	<u>\$28,469,841</u>

INVESTMENTS OWNED - JUNE 30, 1958 - continued

<u>DESCRIPTION</u>	<u>PAR VALUE (BONDS OR COST (STOCKS))</u>
Forwarded	\$28,469,841
The Outlet Company - 500 shares	42,915
The Philadelphia National Bank - 1,000 shares	38,250
Plantations Bank of Rhode Island - 2,400 shares	152,474
The George Putnam Fund of Boston - 4,300 shares	50,052
Rhode Island Hospital Trust Company - 11,050 shares	922,663
Second Bank - State Street Trust Co.- 1,800 shares	113,635
Shawmut Association - 1,000 shares	23,750
Socony Mobil Oil Company, Inc. - 1,000 shares	49,105
Standard Oil Company of New Jersey - 1,900 shares	108,811
Transamerica Corp. - 500 shares	20,750
U.S. Trust Company of New York - 1,000 shares	70,631
Wellington Fund, Inc.- 18,500 shares	252,086
Western Massachusetts Companies - 1,000 shares	40,500
<u>TOTAL INVESTMENTS</u> -----	<u>\$30,355,463</u>

REPORT ON AN ACTUARIAL SURVEY AND VALUATION
OF THE EMPLOYEES' RETIREMENT SYSTEM OF THE
STATE OF RHODE ISLAND AS OF JUNE 30, 1958

There are presented herewith the results of an actuarial survey of the operating experience of the Employees' Retirement System of the State of Rhode Island covering the period of five years from July 1, 1953 to June 30, 1958, and an actuarial valuation of its assets and liabilities as of June 30, 1958.

This survey and valuation was made pursuant to the provisions of Section 3 of the Act governing the System prescribing the duties of the Actuary, which reads as follows:

"In the five-year period, beginning with the year 1937, and in every 5-year period thereafter, the actuary shall make an actuarial investigation into the mortality, service and compensation experience of the members and beneficiaries of the retirement system, and shall make a valuation of the assets and liabilities of the system, and, taking into account the result of such investigation and valuation, the retirement board shall (a) adopt for the retirement system such mortality, service and other tables as shall be deemed necessary; and (b) certify the rates of contribution payable by the State of Rhode Island to carry out the provisions of this chapter."

The previous actuarial survey of the System, pursuant to this directive, was made as of June 30, 1953 and covered the period of seven years ending on that date.

PURPOSE

The primary purpose of this study is to present basic actuarial information concerning the operations of the System reflecting its experience and on the basis thereof establish its true financial condition. Such information includes data on past and current financial and statistical experience, and actuarial normal and total costs.

From the most restricted point of view, a retirement system might be said to provide benefits only for service retirement. In a broad sense, however, the general usage of the term connotes other types of benefits, of a collateral character, such as provisions for disability and death.

BASIS OF SURVEY

The provisions of the plan of operation forming the basis of this survey, including benefits for retirement, disability and death, and the method of financing these provisions, prescribed by the Act governing the System, are summarized in the appendix.

In any survey of the operating experience of a retirement system and in the establishment of its financial condition, it must be borne in mind that cost of benefits depends not only

upon the specific provisions themselves but also upon the constitution and characteristics of the particular group of members covered by the System. A given set of benefit provisions may involve higher or lower costs for one group of participants than for another.

The cost factor, however, is not the only one to be considered in maintaining a retirement system on an effective and practical basis. For example, the cost of a system which provides benefits only to those who remain continuously in service until retirement age may be lower for a group of persons having high rates of turn-over as compared with the cost for a group having low turn-over rates or whose participants entered service at the middle or older ages.

Hence, the basic assumptions to be used in the actuarial analysis of the System must reflect the peculiar characteristics of the group of participants comprising the system. To give full effect to those principles, a survey was made of the experience among the participants with respect to the several basic factors entering into cost calculations and other considerations. Thus, the actuarial functions used in computing costs of benefits and reserve requirements closely reflect the basic characteristics of the membership and the operating conditions of the service.

Basic Factors

The financial condition of a retirement system is established by the valuation of its assets and liabilities. Such a valuation is predicated upon certain basic factors such as conditions for retirement, rates of death, rates of separation from service, rates of disability, rates of retirement and rates of mortality among annuitants. These factors are applied to determine the cost of the retirement allowances and other benefits provided under the plan of operation.

The factor of age has an important bearing upon cost considerations. For example, a young entrant into the service will require larger total contributions than an older entrant because the younger entrant will be able to earn a larger retirement benefit. On the other hand, an employee in service at the date of inception of the System who is of an advanced age may require an immediate outlay of moneys to provide for his retirement, as contrasted with a younger employee in service for whom no contributions may be necessary because of the possibility that this employee may withdraw from service or die while in the service before reaching retirement age.

The age of retirement must also be considered in cost calculations. A low retirement age results in larger costs not only because of longer life expectancy but also because by early re-

tirement such employees avoid the risk of health impairment that usually results from physical exertion at the advanced ages.

The factor of sex is also of importance because of the diverse physiological and economic conditions governing the two different sexes. Thus, marriage is a contributing factor in the rate of withdrawal from service of female employees. That women live longer than men is apparent from a study of mortality rates. Retirement annuities for women, therefore, require a larger outlay of moneys, not only because of their increased longevity but also because, on the average, women retire at earlier ages than men.

All of these factors are basic and interactive in a valuation of a retirement system. For example, a change in the death or withdrawal rates on active members will affect the present value of the retirement benefits unless the change is counterbalanced by the operation of other factors. Costs of retirement and other benefits, therefore, are dependent upon these forces.

Mortality

The rate of mortality experienced among members of a retirement system affects its financial operations in two diverse ways. If the number of deaths is lower than contemplated by the mortality standard in use, certain gains to the system accrue

because a smaller amount of death benefits are payable. On the other hand, if more members survive at the age fixed for retirement than was anticipated, more pensions have to be paid and the result is higher pension cost. The increase in pension cost is greater than the saving in death benefit payments.

With respect to members already retired, if the rates of mortality are less than the expected according to the mortality table used to measure mortality among annuitants, a deficit results which must be met by larger contributions to the system. Conversely, if the rate of death among the annuitants is greater than the expected according to the assumed mortality table, a gain to the system occurs and a surplus is created. This surplus may be used as an additional reserve to meet future contingencies or applied as a credit on future contributions.

Turnover

Another important factor affecting current pension cost is employee turnover. While one of the objectives of a retirement system is to reduce employee turnover, and this is generally achieved in operations, there is usually a number of employees who leave the service with relatively short periods of employment and forfeit their accrued pension credits by accepting a refund of their contributions. On the other hand, the provision for the vesting of pension credit which has been provided in re-

tirement plans during recent years has made it possible for some employees to leave the service and retain their rights in a future pension expectance. The factor of turnover is basic in the calculation of costs and liabilities of a retirement system. Annual valuations and periodic actuarial investigations are prescribed in order that a continuous check of the factor of turnover may be maintained. Thus, changes in the basic assumptions can be made without too long a delay if it appears that the results of operating experience dictate such changes.

Disability

The operating experience of a retirement system with disability incidents is subject to wide variations depending upon the types of provisions made and the character and degree of administration of disability claims. The policies of the governmental agency have a considerable bearing upon the number of disability claims to be processed by a retirement system and the payments to be made. Members disabled for the particular duties of their previously assigned position are frequently able to perform useful service in another capacity. If they are given other employment, the burden on account of disability claims is reduced. As a general rule, however, this is not done and the members are forced to apply for disability benefits.

For these and other reasons, established disability tables cannot be applied to the operations of a particular system with any degree of dependability as a measure of the number of disability incidents and the amount of claims to be paid. Where such tables are applied, they must be carefully reviewed and checked periodically in order that the forecast of costs and obligations that they reflect takes into account all present and prospective factors of both internal and external character influencing the incidence of claims for disability benefits and their continued payment.

Employment

The policies maintained by the employer relative to the employment of personnel must be carefully studied and evaluated as to their effect on the current operations of the system. These policies frequently affect the number of persons entering its service, the age and salary distribution of the new entrants, the rates of separation from service or rates of disability. Any major revisions in employment or fiscal policies of the governmental agency, therefore, may have an immediate or future effect on the course of operations of the retirement system and its financial status.

In an actuarial investigation, these possibilities must be considered. If any of these factors are of sufficient scope

to warrant adjustments or revisions in the financing provisions of the retirement system or in the qualifying conditions relating to the several benefits comprising the benefit schedule or rates of benefit, the necessary changes must be made. Such changes are imperative if the underlying plan governing the retirement system is to be maintained on a basis that will meet most effectively, in accordance with technical requirements, the peculiar needs of the governmental agency.

Interest

The factor of interest is also basic in the operation of a retirement system. All calculations of costs and liabilities are predicated upon the theory that the reserves of the system will be continuously invested in income-bearing securities at an assumed rate. Mortality tables used in the computation of annuities and reserves reflect an interest factor. Interest income accounts for a substantial part of the revenue of the system. Without this income, contribution rates necessary to meet these costs would be considerably higher.

The effect on cost of the income from invested assets is quite pronounced. Earnings on investments have a direct bearing on the amounts to be contributed to the retirement system. The larger the earnings, the smaller are the contribution requirements from the employees or employer, or both. Earnings on

invested reserves result in large savings in cost. The amount of these earnings depends upon two factors, namely: (1) the rate of income on investments, and (2) the length of service rendered by those qualifying for pension benefits. Assuming a fixed return of 3% per year and regular monthly contributions to the system, the interest earnings after a period of 30 years would be equal to 38.2 per cent of the total accumulated sum consisting of principal and interest, and after 25 years, to 32.7 per cent of such sum.

To illustrate further, an investment made over a period of 25 years at 3 per cent will produce 28 per cent more income than one made at 2-1/2 per cent for the same period. Likewise, an investment made at 3-1/2 per cent for 25 years would produce 25 per cent more income than one made at 3 per cent for the same period of time.

Earnable compensation

Since the retirement annuities payable by the system are based upon the average rate of compensation for the five highest consecutive years within the last ten years of service, it is necessary for the correct calculation of costs and liabilities that future increases in compensation be taken into account. The accrued liabilities of the system at any given date, repre-

senting the present value of future pension expectancies, must reflect increases due to changes in compensation that will occur prior to the time when the annuities become payable. Generally a salary scale is prepared showing the rates of compensation that will be in effect at various ages until the prescribed minimum ages of retirement, on the assumption that as a member progresses in service towards retirement, his compensation will be continuously increased in accordance with the rates assumed in the salary scale.

In cost determinations, the salary scale is generally applied in terms of an average salary relationship between the present age of the member and the assumed average age of retirement. For example, if the salary scale rate at age 20 for a male member is \$2,287 and at age 60 \$4,518, it is assumed that the member now 20 years of age will at age 60 be earning $4518/2287$ ths of his rate of salary at age 20.

The relationship between ages may be unaffected in a salary scale by an over-all increase in salary for the employees on a fixed percentage basis uniformly applied. However, the total pension cost for the system in terms of a dollar amount would be increased because pension cost generally follows the trend in salaries particularly if the retirement annuities are predicated upon salaries or if employer contributions are made upon the basis of employees' earnings. But under a fixed percentage rate of increase uniformly for all employees, salary scale relationships

between ages may remain at substantial parity and the salary scale may continue to be used effectively even though rates of salary have increased.

FINANCING

Retirement Costs

The cost of retirement system benefits should be allocated to the period in which these costs are incurred. This is in accordance with principle. Pension cost is properly a part of personnel service expense for the year in which it has accrued. It should, therefore, be allocated to the time within which the service creating such cost is performed. This method of allocating to each year's service the deferred contingent retirement liability reflects cost accounting practice. If an employer delays making contributions to the system until the employee retires, the cost of the benefits earned by the employee cannot be related to the retired employee's services.

To measure the cost of a retirement system by the current rate of pension payments, or to evaluate the effect of an increase in payments by the amount to be paid, misstates the real costs that will be incurred over a long period of years. The deferred character of the pension obligation, therefore, should be taken into account if the cost is to be properly allocated to the year

in which it is incurred. Failure to do this, understates the real costs and creates unwarranted claims for additional benefits or increases in payments.

The financing of a retirement system according to the accrual principle discussed above constitutes a method of budgeting for retirement costs. This method gives effect to the theory that contributions by an employer are a part of compensation for services rendered, the payment of which is deferred until the employees fulfill the prescribed age and service conditions. Such method results in a continuous flow of revenues to the system, and places retirement costs on a current basis, in the salary budget where they properly belong. It makes it convenient for the employer to meet this cost and provide for it in his overall budget. It makes it necessary to take into account the additional cost to be incurred on account of retirement benefits in the employment of new personnel. It establishes a rigid control over proposals for liberalizing amendments since the cost effect thereof, over the long term, must be made known at the time these proposals are initiated. Finally, it results in greater stability for the retirement system under cyclical economic conditions and insures the continued operation of the retirement system on a sound financial basis.

Contributions

Any discussion of financing a retirement system gives rise to the method by which funds are to be accumulated by the system to meet its accruing liabilities. Various methods exist for the accumulation of these funds.

In practically every retirement system, benefit payments are in a steady and persistent upward trend for a great many years. Several factors account for this condition, namely: (1) the continuing increase in the proportion of aged persons in the membership of the system; (2) an increase in membership due to the expansion of governmental functions and activities; (3) a larger proportion of younger individuals than older persons at the time the system was established; and (4) relating benefit payments in some situations to the length of time for which contributions are made, thus producing smaller benefit payments during the early years of the system.

If the method of financing the system and meeting these benefit payments is according to a level rate of contribution, distributed between the employees and employer in such proportions as may be agreed upon, income of the system from contributions during its early years of operations should exceed benefit payments. If the level rate of contribution has been correctly computed, the income from contributions in later years should fall

below benefit payments. The deficiency in income arising in future years would be made up by interest earnings on the accumulated reserve from excess income during the early years of operation. Thus the system would be considered in actuarial balance, with all benefit payments being covered by income from contributions and interest earnings.

Some methods of financing provide for a lower rate of contribution in the early years of operations with increases in future years according to a pre-determined rate schedule. Such a method is used in financing federal social security. Still another method is to fix the employee's rate of contribution at a level amount, with a graded contribution schedule for the employer's share of the cost of the system. The size of the accumulated reserve under such methods would depend upon the gradation of the contribution schedule. Any number of variations exist with respect to the method of financing a retirement system in order that it may become actuarially self-supporting.

The Function of Reserves

A reserve established by an accepted method of financing is considered essential to the actuarial soundness of a retirement system. The maintenance of a reserve is a guarantee of the payment of accrued pension benefits.

Although a public employee retirement system is presumed to be permanent and solvent because the full faith and credit of the governmental unit maintaining the system is pledged to carry out the obligations of the system, the maintenance of reserves is not of itself a definite criterion of the ability of the system to fulfill its obligations. These reserves, however, serve a useful function and do have a real meaning to the extent that they represent an accumulation of income for the purpose of meeting future demands on the retirement system. Benefit payments by a system, as has been mentioned, increase steadily and persistently for a great many years. If effect is not given to the potential liabilities that are currently accruing, a deferment of costs to future years and future taxpayers occurs which may become of substantial proportions and may conceivably affect the ability of the retirement system to eventually meet its maturing obligations.

Reserves in a retirement system, therefore, are essential to its proper operation and for meeting future payments by the system. The maintenance of adequate reserves serves to establish financial stability for the system and results in confidence in the system on the part of its participants.

Actuarial Soundness

In any discussion of financing a retirement system, the terms "actuarially sound" or "actuarial soundness" are frequently

used. The terms relate to the ability of a retirement system to pay out the benefits that are promised. A proposal for a change in the amount of benefits or in the qualifying conditions therefor may be considered to be actuarially sound if the cost thereof is fully provided for according to a recognized method of actuarial funding.

Many definitions of actuarial soundness exist. One definition is that the retirement system is actuarially sound if sufficient assets are on hand to provide for all future benefits for those currently on the pension roll without consideration of the accrued pension credits of the participants in active service. Another definition is that a system is actuarially sound if the accumulated assets are sufficient to meet all accrued benefits, including those for retired members and active members. This latter definition contemplates full funding. Still another definition which is somewhat less stringent is that a system is actuarially sound if the accrued liabilities for both retired members and active members are balanced by the amount of the present and prospective assets of the system.

Irrespective of the concept of actuarial soundness that may be applied, a thorough actuarial analysis must be made of a retirement system periodically to establish its financial condition and its future cost burden, and to ascertain its progress and

operating experience. In this way, any unfavorable factors may be ascertained and remedial steps instituted for the purpose of insuring the proper operation of the system in fulfillment of its objectives.

STATISTICAL DATA

Statistics were compiled for this study by Joseph B. Lewis, Secretary, and supplied to us in proper form in accordance with our specifications. These statistics were classified and tabulated by us for purposes of this survey. Detailed tables reflecting this statistical data are presented in the appendix. The following is a summary of these statistics.

STATE EMPLOYEES

	<u>Male</u>	<u>Female</u>
Number at June 30, 1958	5,164	3,526
Per cent of total	59.4%	40.6%
Aggregate salaries	\$20,182,130.00	\$11,479,413.00
Average salary	\$3,908.00	\$3,256.00
Average age	46.6	42.6
Average service	8.4	7.7
<u>New entrants</u>		
July 1, 1953 to June 30, 1958	3,377	2,944
Per cent of total	52.6%	47.4%
Average age at entry	36.4	26.0
<u>Membership at July 1, 1953</u>		
Number	3,942	2,596
Per cent of total	60.3%	39.7%
Average age	48.0	40.9

STATE EMPLOYEES - continued

<u>Terminations -</u> <u>July 1, 1953 to June 30, 1958</u>	<u>Male</u>	<u>Female</u>
By death	238	64
Per cent of total	78.8%	21.2%
Average age at death	59.3	54.2

<u>Terminations -</u> <u>July 1, 1953 to June 30, 1958</u>		
By retirement	114	78
Per cent of total	59.4%	40.6%
Average age at retirement	69.7	68.1
By withdrawal with refund	1,803	1,872
Per cent of total	50.0%	50.0%
Average age at withdrawal	39.3	32.0

Beneficiaries

Service retirements

	<u>Male</u>	<u>Female</u>
Number at June 30, 1958	141	105
Per cent of total	57.3%	42.7%
Annual payments	\$184,500.00	\$118,916.00
Average annual payment	\$1,309.00	\$1,133.00
Average age at June 30, 1958	73.5	71.2

Other Beneficiaries

	<u>Number</u>	<u>Annual Payments</u>	<u>Average Annuity</u>	<u>Average age June 30, 1958</u>
<u>(a) Ordinary Disability Annuity -</u>				
Male	6	\$ 9,020.18	\$1,503.36	68.0
Female	7	4,954.98	707.85	63.3
<u>(b) Accidental Disability Annuity -</u>				
Male	1	\$ 351.36	\$ 351.36	72.0
Female	2	2,524.44	1,262.22	65.0
<u>(c) Ordinary Disability Annuity - Option 1 -</u>				
Male	1	\$ 643.97	643.97	63.0
Female	1	645.41	645.41	66.0
<u>(d) Accidental Death Benefit - Beneficiaries -</u>				
Female	4	\$ 1,736.84	\$ 434.21	59.0

STATE EMPLOYEES - Other Beneficiaries - continued

	Number	Annual Payments	Average Annuity	Average June 30, 1958
<u>(e) Beneficiary Annuity - Option 2 -</u>				
Male	10	\$18,980.30	\$1,898.03	70.4
Female	4	6,711.01	1,677.75	69.5
<u>(f) Cash Refund Annuity - Option 1 -</u>				
Male	27	\$30,140.64	\$1,116.32	78.6
Female	12	14,160.98	1,180.08	75.9
<u>(g) Joint and Last Survivor Annuity - Option 2 -</u>				
Male	8	\$12,505.91	\$1,563.24	76/75
Female	1	1,601.16	1,601.16	74/68
<u>(h) Joint and Last Survivor Annuity - Option 3 -</u>				
Male	8	\$17,029.49	\$2,128.69	72/65

Terminations among service retirements - July 1, 1953 to June 30, 1958

	Male	Female
By death	49	31
Per cent of total	61.3%	38.7%
Average age at death	75.7	73.9

TEACHERS

	Male	Female
Number at June 30, 1958	1,655	4,242
Per cent of total	28.1%	71.9%
Aggregate salaries	\$8,156,058.00	\$20,403,297.00
Average salary	\$4,928.00	\$4,810.00
Average age	40.9	48.5
Average service	11.1	14.4
<u>New Entrants</u>		
July 1, 1953 to June 30, 1958	725	2,190
Per cent of total	26.2%	73.8%
Average age at entry	31.2	32.5
<u>Membership at July 1, 1953</u>		
Number	1,195	3,486
Per cent of total	25.5%	74.5%
Average age	42.6	45.3

TEACHERS - continued

	Male	Female
<u>Terminations - July 1, 1953 to June 30, 1958</u>		
By death	16	60
Per cent of total	21.1%	78.9%
Average age at death	48.8	53.9
<u>Terminations - July 1, 1953 to June 30, 1958</u>		
By retirement	45	271
Per cent of total	14.2%	85.8%
Average age at retirement	66.7	66.9
By withdrawal with refund	204	1,103
Per cent of total	15.6%	84.4%
Average age at withdrawal	35.1	32.7

Beneficiaries

Service retirements

	Male	Female
Number at June 30, 1958	67	457
Per cent of total	12.8%	87.2%
Annual payments	\$179,934.00	\$1,142,926.00
Average annual payment	\$2,686.00	\$2,501.00
Average age at June 30, 1958	70.0	71.6

Other Beneficiaries

	Number	Annual Payments	Average Annuity	Average Age June 30, 1958
<u>(a) Ordinary Disability Annuities -</u>				
Male	6	\$ 9,205.62	\$1,534.27	56.2
Female	28	44,484.62	1,588.74	59.8
<u>(b) Accidental Disability Annuities -</u>				
Female	1	\$2,666.67	\$2,666.67	43.0
<u>(c) Cash Refund Annuity - Option 1 -</u>				
Female	5	\$11,680.15	\$2,336.03	73.0

Other Beneficiaries - continued

	<u>Number</u>	<u>Annual Payments</u>	<u>Average Annuity</u>	<u>Average June 30</u>
<u>(d) Joint and Last Survivor Annuity - Option 2-</u>				
Male	9	\$16,455.97	\$1,828.44	69/65
Female	3	3,900.93	1,300.31	68/57
<u>(e) Joint and Last Survivor Annuity - Option 3 -</u>				
Male	9	\$25,753.52	\$2,861.50	71/65
Female	1	1,626.67	1,626.67	67/69

Terminations among service retirements -
July 1, 1953 to June 30, 1958

	<u>Male</u>	<u>Female</u>
By death	13	66
Per cent of total	16.5%	83.5%
Average age at death	71.8	71.7

ACTUARIAL SURVEY

An actuarial survey was made of the mortality and service experience of the system covering the period from July 1, 1953 to June 30, 1958.

Life and service tables were prepared reflecting the operating experience for the aforesaid period. These are reproduced as a part of this report. A life and service table records the

operating experience with respect to such factors as death, separations from service without right to a retirement annuity, and retirements for service and disability. These factors are derived from the experience of the past and are adjusted to give effect to the probable operating experience in future years.

Thus, the actuarial functions produced by the life and service table reflect as closely as possible expected future trends and conditions. An actuarial valuation resulting from the application of these functions records the financial condition of the system at a given date giving effect as fully as possible to developments that may occur in future years in the operation of the system in respect to the several basic factors.

In the process of arriving at the final or refined rates of separation from service, graphic charts were prepared to which were transcribed the actual rates of separation caused by these factors as tabulated from the original statistical data relating to the experience among the group of employees covered by this survey. With the use of these graphs, the rates established in the original tabulations were adjusted and refined by the elimination of extreme fluctuations from the indicated primary trend. The graduated rates produced from a reading of these graphs were then used in the preparation of the life and service tables.

TABLE A
STATE EMPLOYEES
LIFE AND SERVICE TABLE FOR AGES 16 TO 60

M A L E

Age	Annual Rates of		Number in Service	Number of	
	Withdrawal	Death		Withdrawals	Deaths
			1,000,000	307,637	892
16	.307637	.000892	691,471	205,572	627
17	.297297	.000907	485,272	139,252	448
18	.286957	.000924	345,572	95,544	326
19	.276482	.000944			
20	.266008	.000966	249,702	66,423	241
21	.255533	.000991	183,038	46,772	181
22	.246385	.001020	136,085	33,529	139
23	.237238	.001053	102,417	24,297	108
24	.228090	.001090	78,012	17,794	85
25	.218942	.001133	60,133	13,166	68
26	.192135	.001180	46,899	9,011	55
27	.172340	.001234	37,833	6,520	47
28	.156047	.001295	31,266	4,895	41
29	.139754	.001362	26,430	3,694	36
30	.122431	.001437	22,700	2,779	33
31	.111592	.001521	19,888	2,305	30
32	.100221	.001614	17,553	1,759	28
33	.088850	.001717	15,766	1,401	27
34	.078767	.001910	14,338	1,129	27
35	.075156	.002112	13,182	991	28
36	.071544	.002322	12,163	870	28
37	.067933	.002542	11,265	765	29
38	.064322	.002795	10,471	674	29
39	.060710	.003059	9,768	593	30
40	.057099	.003336			
41	.053558	.003817	9,145	522	31
42	.050765	.004299	8,592	460	33
43	.048564	.004797	8,099	411	35
44	.046364	.005309	7,653	372	37
			7,244	336	38
45	.044163	.005839			
46	.041962	.006387	6,870	303	40
47	.041638	.007086	6,527	274	42
48	.041313	.007789	6,211	259	44
49	.040989	.008518	5,908	244	46
			5,618	230	48

TABLE A - continued
STATE EMPLOYEES

LIFE AND SERVICE TABLE FOR AGES 16 TO 60

M A L E

Age	Annual Rates of		Number in Service	Number of	
	Withdrawal	Death		Withdrawals	Deaths
50	.040664	.009269	5,340	217	49
51	.040340	.010077	5,074	205	51
52	.040021	.010905	4,818	193	53
53	.039702	.011732	4,572	182	54
54	.039384	.012637	4,336	171	55
55	.039065	.013548	4,110	161	56
56	.038746	.014530	3,894	151	57
57	.038528	.015556	3,686	142	57
58	.038311	.016624	3,487	134	58
59	.038093	.017741	3,295	126	58
60	--	--	3,111	--	--

TABLE B
STATE EMPLOYEES
LIFE AND SERVICE TABLE FOR AGES 16 TO 60

F E M A L E

Age	Annual Rates of		Number in Service	Number of	
	Withdrawal	Death		Withdrawal	Deaths
			1,000,000	286,000	879
16	.286000	.000879	713,121	201,535	635
17	.282610	.000891	510,951	142,668	462
18	.279220	.000904	367,821	101,456	351
19	.275830	.000955			
			266,014	72,473	274
20	.272441	.001031	193,267	51,999	215
21	.269051	.001115	141,053	37,472	171
22	.265661	.001210	103,410	27,121	137
23	.262271	.001321	76,152	19,714	114
24	.258881	.001500			
			56,324	14,342	95
25	.254637	.001679	41,887	10,121	78
26	.241636	.001859	31,688	6,525	65
27	.205912	.002039	25,098	4,447	56
28	.177187	.002215	20,595	3,118	46
29	.151408	.002220			
			17,431	2,395	39
30	.137397	.002226	14,997	1,850	33
31	.123386	.002231	13,115	1,434	29
32	.109375	.002236	11,652	1,214	26
33	.104151	.002241	10,412	1,030	23
34	.098927	.002247			
			9,359	870	21
35	.092918	.002252	8,468	736	19
36	.086909	.002257	7,713	624	19
37	.080899	.002504	7,070	529	19
38	.074890	.002750	6,522	442	20
39	.067834	.002997			
			6,060	402	20
40	.066311	.003243	5,638	365	19
41	.064788	.003327	5,254	332	18
42	.063265	.003441	4,904	303	18
43	.061742	.003619	4,583	276	17
44	.060219	.003808			
			4,290	252	17
45	.058696	.004010	4,021	234	17
46	.058288	.004223	3,770	218	17
47	.057879	.004450	3,535	203	17
48	.057471	.004692	3,315	189	17
49	.057063	.004949			16

TABLE B - continued

STATE EMPLOYEES

LIFE AND SERVICE TABLE FOR AGES 16 TO 60

F E M A L E

Age	Annual Rates of		Number in Service	Number of	
	Withdrawal	Death		Withdrawal	Deaths
50	.056654	.005223	3,110	176	16
51	.056246	.005515	2,918	164	16
52	.055837	.006495	2,738	153	18
53	.055429	.007495	2,567	142	19
54	.055021	.008727	2,406	132	21
55	.054612	.010449	2,253	123	24
56	.054204	.010986	2,106	114	23
57	.053431	.011523	1,969	105	23
58	.052657	.012061	1,841	97	22
59	.051884	.012598	1,722	89	22
60	--	--	1,611	--	--

TABLE C
STATE EMPLOYEES
LIFE AND RETIREMENT TABLE FOR AGES 60 TO 70

M A L E

Age	Annual Rates of Death	Retirement	Number in Service	Deaths	Number of Retirements
60	.038486	.005245	1,000,000	38,486	5,245
61	.040212	.006799	956,269	38,453	6,502
62	.041937	.008169	911,314	38,218	7,445
63	.043661	.010026	865,651	37,795	8,679
64	.045387	.011883	819,177	37,180	9,734
65	.047180	.017667	772,263	36,435	13,644
66	.048974	.023451	722,184	35,368	16,936
67	.050767	.029232	669,880	34,008	19,582
68	.052561	.035019	616,290	32,393	21,582
69	.054354	.044121	562,315	30,564	24,810
70	--	1.000000	506,941	--	506,941

F E M A L E

Age	Annual Rates of Death	Retirement	Number in Service	Deaths	Number of Retirements
60	.031118	.006757	1,000,000	31,118	6,757
61	.032072	.011713	962,125	30,857	11,269
62	.033237	.014634	919,999	30,578	13,463
63	.034401	.016544	875,958	30,134	14,492
64	.035565	.021834	831,332	29,566	18,151
65	.036685	.034121	783,615	28,747	26,738
66	.037805	.045307	728,130	27,527	32,989
67	.040115	.060836	667,614	26,781	40,615
68	.041439	.073024	600,218	24,872	43,830
69	.042762	.085213	531,516	22,729	45,292
70	--	1.000000	463,395	--	463,395

TABLE D
STATE EMPLOYEES

M A L E

LIFE TABLE FOR AGES 70 AND OVER

Age	Rate of Death	Number of Retirants	Number of Deaths
70	.076577	1,000,000	76,577
71	.078078	923,423	72,099
72	.079580	851,324	67,748
73	.081081	783,576	63,533
74	.082512	720,043	59,412
75	.083943	660,631	55,455
76	.085373	605,176	51,666
77	.086804	553,510	48,047
78	.088235	505,463	44,600
79	.089916	460,863	41,439
80	.091596	419,424	38,418
81	.093493	381,006	35,621
82	.097841	345,385	33,793
83	.102434	311,592	31,918
84	.107288	279,674	30,006
85	.112419	249,668	28,067
86	.129500	221,601	28,697
87	.153846	192,904	29,678
88	.186813	163,226	30,493
89	.219780	132,733	29,172
90	.252747	103,561	26,175
91	.285714	77,386	22,110
92	.333333	55,276	18,425
93	.379285	36,851	13,977
94	.425236	22,874	9,727
95	.471190	13,147	6,195
96	.487276	6,952	3,388
97	.542279	3,564	1,933
98	.610442	1,631	996
99	.690722	635	439
100	.800000	196	157
101	.833333	39	32
102	1.000000	7	7

TABLE E
STATE EMPLOYEES
LIFE TABLE FOR AGES 70 AND OVER

F E M A L E

<u>Age</u>	<u>Rate of Death</u>	<u>Number of Retirants</u>	<u>Number of Deaths</u>
		1,000,000	66,593
70	.066593	933,407	67,564
71	.068384	865,843	60,761
72	.070175	805,082	62,628
73	.077791	742,454	63,411
74	.085407		
75	.093023	679,043	63,167
76	.106395	615,876	65,526
77	.119767	550,350	65,914
78	.133139	484,436	64,497
79	.146512	419,939	61,526
80	.159884	358,413	57,305
81	.173256	301,108	52,169
82	.186628	248,939	46,459
83	.200000	202,480	40,496
84	.225000	161,984	36,446
85	.250000	125,538	31,385
86	.276000	94,153	25,986
87	.302600	68,167	20,627
88	.328900	47,540	15,636
89	.355200	31,904	11,332
90	.381500		
91	.407800	20,572	7,848
92	.434100	12,724	5,189
93	.460400	7,535	3,271
94	.486700	4,264	1,963
		2,301	1,120
95	.513000		
96	.542279	1,181	606
97	.610442	575	312
98	.690722	263	161
99	.800000	102	70
		32	26
100	.833333		
101	1.000000	6	5
		1	1

TABLE A
TEACHERS
LIFE AND SERVICE TABLE FOR AGES 21 TO 60

M A L E

<u>Age</u>	<u>Annual Rates of</u>		<u>Number in Service</u>	<u>Number of Withdrawals</u>	<u>Number of Deaths</u>
	<u>Withdrawal</u>	<u>Death</u>			
			1,000,000	96,833	2,454
21	.096833	.002454	900,713	83,972	2,287
22	.093228	.002539	814,454	72,994	2,138
23	.089623	.002625	739,322	63,595	2,004
24	.086018	.002710			
25	.082413	.002796	673,727	55,524	1,884
26	.078808	.002881	616,319	48,571	1,776
27	.075203	.002967	565,972	42,563	1,679
28	.071598	.003052	521,730	37,355	1,592
29	.067993	.003138	482,783	32,826	1,515
30	.064397	.003223	448,442	28,878	1,445
31	.060800	.003309	418,119	25,422	1,384
32	.053009	.003394	392,313	20,796	1,332
33	.045217	.003480	370,185	16,739	1,288
34	.039032	.003565	352,158	13,745	1,255
35	.032847	.003651	337,158	11,075	1,231
36	.031227	.003736	324,852	10,144	1,214
37	.029598	.003822	313,494	9,279	1,198
38	.028093	.003907	303,017	8,513	1,184
39	.026589	.004015	293,320	7,799	1,178
40	.025084	.004217	284,343	7,132	1,199
41	.023580	.004432	276,012	6,508	1,223
42	.022075	.004659	268,281	5,922	1,250
43	.020619	.004902	261,109	5,384	1,280
44	.018109	.005159	254,445	4,608	1,313
45	.014228	.005429	248,524	3,536	1,349
46	.014010	.005727	243,639	3,413	1,395
47	.013792	.006040	237,831	3,280	1,436
48	.013574	.006373	233,115	3,164	1,486
49	.013356	.006745	228,465	3,051	1,541

TABLE A - continued

TEACHERS - M A L E

LIFE AND SERVICE TABLE FOR AGES 21 TO 60

Age	Annual Rates of Withdrawal	Annual Rates of Death	Number in Service	Number of Withdrawals	Number of Deaths
50	.013138	.007140	223,873	2,941	1,598
51	.012920	.007563	219,334	2,834	1,659
52	.012739	.008014	214,841	2,737	1,722
53	.012559	.008522	210,382	2,642	1,793
54	.012378	.009233	205,947	2,549	1,902
55	.012198	.010168	201,496	2,458	2,049
56	.012017	.011140	196,989	2,367	2,194
57	.011837	.012154	192,428	2,278	2,339
58	.011656	.014012	187,811	2,189	2,632
59	.011475	.015918	182,990	2,100	2,913
60	--	--	177,977	--	--

TABLE B

TEACHERS

LIFE AND SERVICE TABLE FOR AGES 20 TO 60

F E M A L E

Age	Annual Rates of Withdrawal	Annual Rates of Death	Number in Service	Number of Withdrawals	Number of Deaths
20	.200000	.001795	1,000,000	200,000	1,795
21	.198084	.001862	798,205	158,112	1,486
22	.196167	.001929	638,607	125,274	1,232
23	.194251	.001996	512,101	99,476	1,022
24	.192334	.002064	411,613	79,165	850
25	.190418	.002131	331,588	63,140	708
26	.184307	.002198	267,741	49,347	588
27	.178195	.002265	217,806	38,812	493
28	.171582	.002332	178,501	30,628	416
29	.164969	.002399	147,457	24,326	354
30	.140000	.002464	122,777	17,189	303
31	.124562	.002533	105,285	13,115	267
32	.109124	.002600	91,903	10,029	239
33	.093685	.002667	81,635	7,648	218
34	.078247	.002734	73,769	5,772	202
35	.062874	.002801	67,795	4,263	190
36	.048611	.002868	63,342	3,079	182
37	.035488	.002935	60,081	2,132	176
38	.029727	.003003	57,773	1,717	173
39	.027812	.003070	55,883	1,554	172
40	.025897	.003137	54,157	1,403	170
41	.023982	.003210	52,584	1,261	169
42	.022067	.003371	51,154	1,129	172
43	.020152	.003540	49,853	1,005	176
44	.018236	.003721	48,672	888	181
45	.016321	.003914	47,603	777	186
46	.014406	.004165	46,640	672	194
47	.012491	.004428	45,774	572	203
48	.010576	.004707	44,999	476	212
49	.008661	.004901	44,311	384	217

TABLE B - continued

TEACHERS

LIFE AND SERVICE TABLE FOR AGES 20 TO 60

F E M A L E

<u>Age</u>	<u>Annual Rates of Withdrawal</u>	<u>Annual Rates of Death</u>	<u>Number in Service</u>	<u>Number of Withdrawals</u>	<u>Number of Deaths</u>
50	.008326	.005312	43,710	364	232
51	.007992	.005641	43,114	345	243
52	.007657	.005991	42,526	326	255
53	.007323	.006359	41,945	307	267
54	.006988	.006753	41,369	289	279
55	.006606	.007194	40,801	270	294
56	.006277	.007613	40,237	253	306
57	.005948	.008086	39,678	236	321
58	.005619	.008589	39,121	220	336
59	.005290	.009124	38,565	204	352
60	--	--	38,009	--	--

TABLE C

TEACHERS

LIFE AND RETIREMENT TABLE FOR AGES 60 TO 70

M A L E

<u>Age</u>	<u>Annual Rates of Death</u>	<u>Rates of Retirement</u>	<u>Number in Service</u>	<u>Number of Deaths</u>	<u>Number of Retirements</u>
60	.021249	.040404	1,000,000	21,249	40,404
61	.022697	.049028	938,347	21,298	46,005
62	.024146	.057851	871,044	21,032	50,391
63	.025595	.070592	799,621	20,466	56,447
64	.027043	.083333	722,708	19,544	60,225
65	.028578	.090000	642,949	18,374	57,865
66	.030327	.096667	566,700	17,186	54,781
67	.032132	.103333	494,733	15,897	51,122
68	.033999	.110000	427,714	14,542	47,049
69	.035931	.116667	366,123	13,155	42,714
70	--	1.000000	310,254	--	310,254

F E M A L E

<u>Age</u>	<u>Annual Rates of Death</u>	<u>Rates of Retirement</u>	<u>Number in Service</u>	<u>Number of Deaths</u>	<u>Number of Retirements</u>
60	.010801	.029891	1,000,000	10,801	29,891
61	.011701	.039801	959,308	11,225	38,181
62	.012328	.053512	909,902	11,217	48,691
63	.012984	.063651	849,994	10,363	54,103
64	.013875	.073790	785,528	10,899	57,964
65	.014801	.083930	716,665	10,607	60,150
66	.015764	.094069	645,908	10,176	60,760
67	.016707	.104208	574,972	9,606	59,917
68	.017694	.112745	505,449	8,943	56,987
69	.018725	.151976	439,519	8,230	66,796
70	--	1.000000	364,493	--	364,493

TABLE D

TEACHERS

LIFE TABLE FOR AGES 70 AND OVER

M A L E

<u>Age</u>	<u>Rate of Death</u>	<u>Number of Retirants</u>	<u>Number of Deaths</u>
		1,000,000	36,488
70	.036488	963,512	36,963
71	.038363	926,549	37,396
72	.040360	889,153	37,777
73	.042486	851,376	38,099
74	.044750		
75	.053565	813,277	43,563
76	.062541	769,714	48,139
77	.073333	721,575	52,915
78	.086667	668,660	57,951
79	.100000	610,709	61,071
80	.113182	549,638	62,209
81	.126364	487,429	61,593
82	.139546	425,836	59,424
83	.152727	366,412	55,961
84	.165910	310,451	51,507
85	.179092	258,944	46,375
86	.192274	212,569	40,871
87	.205456	171,698	35,276
88	.218637	136,422	29,827
89	.231819	106,595	24,711
90	.245000	81,884	20,062
91	.276000	61,822	17,063
92	.307000	44,759	13,741
93	.338000	31,018	10,484
94	.369000	20,534	7,577
95	.400000	12,957	5,183
96	.430500	7,774	3,347
97	.461000	4,427	2,041
98	.491500	2,386	1,173
99	.529000	1,213	642
100	.566500		
101	.604000	571	323
102	.641500	248	150
103	.690000	98	63
104	.800000	35	24
105	1.000000	11	9
		2	2

TABLE E

TEACHERS

LIFE TABLE FOR AGES 70 AND OVER

F E M A L E

<u>Age</u>	<u>Rate of Death</u>	<u>Number of Retirants</u>	<u>Number of Deaths</u>
		1,000,000	24,216
70	.024216	975,784	25,002
71	.025622	950,782	25,778
72	.027112	925,004	26,726
73	.028893	898,278	30,700
74	.034176		
75	.039564	867,578	34,325
76	.045150	833,253	37,621
77	.052931	795,632	42,114
78	.060712	753,518	45,748
79	.068493	707,770	48,477
80	.076565	659,293	50,479
81	.084638	608,814	51,529
82	.092710	557,285	51,666
83	.100783	505,619	50,958
84	.108855	454,661	49,492
85	.116928	405,169	47,376
86	.125000	357,793	44,724
87	.133375	313,069	41,756
88	.141750	271,313	38,459
89	.150125	232,854	34,957
90	.158500	197,897	31,367
91	.186800	166,530	31,108
92	.215100	135,422	29,129
93	.243400	106,293	25,872
94	.271700	80,421	21,850
95	.300000	58,571	17,571
96	.329000	41,000	13,489
97	.358000	27,511	9,849
98	.387000	17,662	6,835
99	.416000	10,827	4,504
100	.445000	6,323	2,814
101	.520000	3,509	1,825
102	.595000	1,684	1,002
103	.690000	682	471
104	.800000	211	169
105	.833333	42	35
106	1.000000	7	7

Separations from service without right to retirement benefit

The experience among the members of the system with respect to separations from the system by the acceptance of refunds was tabulated and analyzed. In the refinement of these statistics for the preparation of actuarial functions, effect was given to the conditions of the service prevailing at this time and to possible variations in future years.

The following are the rates for certain select ages that were used in the valuation of the assets and liabilities, the results of which are presented in this report.

Rates of separation with the acceptance of refund benefits per 1,000 members

Age	State Employees		Teacher Members	
	Male	Female	Male	Female
20	177.0	181.6	83.3	174.6
25	145.9	169.7	73.7	88.6
30	80.2	91.6	33.4	33.8
35	50.1	61.9	16.6	30.7
40	38.1	40.4	0.9	20.0
45	29.5	39.1	0.5	8.4
50	27.1	37.8	0.3	0.3
55	26.1	36.4	0.2	0.1

The foregoing rates are below the rates developed in the preparation of the life and service tables based upon the oper-

ating experience of the system during the last five years. This adjustment was necessary for the purpose of providing for any possible decrease in rates of separation that may occur in the future.

Mortality among active members

The following table illustrates the rates of death experienced among the members in active service in comparison with the rates shown by other mortality tables reflecting the most recent mortality compilations.

Rates of death per 1,000 members

Age	State Employees		1937 Standard Annuity Mortality Table		United States Life Table 1949-1951 (Whites)		Commissioners 1958 Standard Ordinary Mortality Table
	Present	Survey	Male	Female	Male	Female	
	Male	Female					
20	0.97	1.03	1.33	1.26	1.62	0.73	1.79
25	1.13	1.68	1.56	1.33	1.71	0.88	1.93
30	1.44	2.23	2.07	1.56	1.82	1.15	2.13
35	2.11	2.25	2.98	2.07	2.48	1.61	2.51
40	3.34	3.24	4.36	2.98	3.91	2.42	3.53
45	5.84	4.01	6.36	4.36	6.37	3.73	5.35
50	9.27	5.22	9.29	6.36	10.12	5.61	8.32
55	13.55	10.45	13.55	9.29	14.53	7.84	13.00

Rates of death per 1,000 members

Teachers

Age	Present Survey		1937 Standard Annuity Mortality Table		United States Life Table 1949-1951 (Whites)		Commissioners 1958 Standard Ordinary Mortality Table
	Male	Female	Male	Female	Male	Female	
20	--	1.80	1.33	1.26	1.62	0.73	1.79
25	2.80	2.13	1.56	1.33	1.71	0.88	1.93
30	3.22	2.46	2.07	1.56	1.82	1.15	2.13
35	3.65	2.80	2.98	2.07	2.48	1.61	2.51
40	4.22	3.14	4.36	2.98	3.91	2.42	3.53
45	5.43	3.91	6.36	4.36	6.37	3.73	5.35
50	7.14	5.31	9.29	6.36	10.12	5.61	8.32
55	10.17	7.19	13.55	9.29	14.53	7.84	13.00

The mortality table used in measuring deaths among active members, for purposes of the actuarial valuation this year, was the 1937 Standard Annuity Mortality Table, and 3% interest, rated back five years for female lives.

Mortality among service retirees

Mortality experience among service retirees from July 1, 1953 to June 30, 1958 is illustrated by the following statistics:

Rates of death per 1,000 retired members

State Employees

Age	Present Survey		Annuity Table for 1949 Ultimate		1937 Standard Annuity Mortality Table		1955 American Annuity Table	
	Male	Female	Male	Female	Male	Female	Male	Female
60	38.5	31.1	15.7	7.5	19.8	13.6	12.0	7.1
63	43.7	34.4	19.7	10.1	24.7	17.0	16.5	9.7
65	47.2	36.7	23.1	12.4	28.8	19.8	20.2	12.0
68	52.6	41.4	29.6	17.0	36.0	24.7	26.9	16.5
70	76.6	66.6	35.1	21.0	41.8	28.8	32.4	20.2
75	83.9	93.0	54.5	35.8	60.5	41.8	50.4	32.4
80	91.6	160.0	85.5	61.4	87.2	60.5	76.8	50.4

Rates of death per 1,000 retired members

Teachers

Age	Present Survey		Annuity Table for 1949 Ultimate		1937 Standard Annuity Mortality Table		1955 American Annuity Table	
	Male	Female	Male	Female	Male	Female	Male	Female
60	21.2	10.8	15.7	7.5	19.8	13.6	12.0	7.1
63	25.6	13.0	19.7	10.1	24.7	17.0	16.5	9.7
65	28.6	14.8	23.1	12.4	28.8	19.8	20.2	12.0
68	34.0	17.7	29.6	17.0	36.0	24.7	26.9	16.5
70	36.5	24.2	35.1	21.0	41.8	28.8	32.4	20.2
75	53.6	39.6	54.5	35.8	60.5	41.8	50.4	32.4
80	113.2	76.6	85.5	61.4	87.2	60.5	76.8	50.4

The mortality table used in measuring deaths among retired members was the 1937 Standard Annuity Mortality Table and 3% interest, rated back five years for female lives.

Disability experience

The system provides a total and permanent disability benefit as a part of its benefit schedule. This benefit is payable to any member having at least ten years of total service who sustains a mental or physical disability due to causes other than disability incurred while in the performance of duty.

Ordinary Disability Claims

<u>Year Ended June 30</u>	<u>State Employees</u>	<u>Teachers</u>
1954	1	5
1955	1	7
1956	1	2
1957	2	--
1958	<u>2</u>	<u>4</u>
	<u>7</u>	<u>18</u>

Approximately 32% of the State employees and 43% of teachers have 10 years of service or more and are eligible for this benefit. On the basis of the number of members exposed to this risk, the expectancy of disability incidents for State employees should be about 19 claims and in the case of teachers 22 claims. It will be noted that the number of ordinary disability claims has been below the expectancy, with the greatest variation in the case of the State employees.

Accidental disability benefit

The experience with the accidental disability benefit has been exceedingly favorable. Only a few claims have been incurred and the rate of incidence is considerably below the expected according to the standards used in measuring these risks.

Ordinary death benefit

The ordinary death benefit provided by the system is analogous to group life insurance, except that there is no conversion privilege for the continuance of insurance coverage in the case of employees leaving the service. The benefit is equal to: (1) the member's total contributions; and (2) an amount from State contributions equal to \$200.00 per year of credited service subject to a minimum payment under item (2) of \$500.00 and a maximum payment of \$5,000.00.

Upon death while in receipt of a service retirement allowance, if no optional benefit has been elected, a death benefit is payable consisting of the excess of the member's total contributions, as of the date of retirement, over the total amounts received in the form of retirement allowance payments. The minimum payment in such a case is equal to five monthly annuity payments or \$300.00, whichever is greater.

The amount of insurance in force in connection with the death benefit is as follows:

State Employees -	
Male	\$9,107,900.00
Female	5,735,600.00
Teachers -	
Male	3,793,000.00
Female	<u>11,542,500.00</u>
Total	<u>\$30,179,000.00</u>

Accidental death benefit

The number of accidental death benefit claims has been few. The experience of the system with respect to this benefit has been very favorable. In fact, the total number of such claims now in force is only four, involving only former State employees.

Interest earnings

The trend in the rate of interest earnings on investments has been persistently upward during recent years and has been considerably above the rate of 3% per annum applied in our valuation of the system. The following table presents figures which are illustrative of this experience:

<u>Fiscal Year Ended June 30th</u>	<u>Average rate of interest income</u>
1954	2.71%
1955	2.77
1956	2.93
1957	3.20
1958	3.45

The rate of interest to be applied to the computation of reserves and liabilities should reflect the average that may be expected to be realized over a long period of years under the established investment authority. Any rate higher than such anticipated level will effect a deficiency in the reserves and liabilities which cumulatively may prove burdensome at some future time. Conversely, any rate which is lower than such anticipated average rate of earnings will result in the maintenance of liabilities and reserves above a reasonable valuation.

In a public retirement system, such a condition is unwarranted and unnecessary. The operating experience of past years and the prospective earnings during the foreseeable future on investments of the type to which the system is restricted support the use of a 3% rate of interest. Additional experience during the next several years may dictate an increase in this rate.

ACTUARIAL VALUATION

A retirement system represents a long term operation which involves a steady and persistent increase in benefit payments. The system experiences a small outlay during its early years but the expenditures increase steadily until considerably higher levels of disbursements are reached as the system expands its operations. An actuarial valuation is made for the purpose of computing the liabilities under the prescribed benefit schedule and ascertaining how these liabilities will be met by the expected revenues under the prescribed method of financing.

As previously stated, this valuation is made with the use of the actuarial functions produced in the survey of the operating experience of the system in prior years. In establishing these functions, it is assumed that the operations of the system in respect to such factors as rates of mortality among active and retired members, rates of separation with refunds, salary increments and investment earnings, will be duplicated in future years. It is the responsibility of the actuary to properly evaluate the results of the past and possibly modify his findings with the view of establishing functions for future valuations which will realistically reflect the assumed experience under conditions that may be expected to exist in future years.

Long range valuations or cost estimates, regardless how determined, cannot be precise no matter how accurately they may

have been calculated. There are bound to be differences between actual experience in operations over the long term and in the assumptions made with respect to the several actuarial factors used as a basis in such determinations. Nevertheless, valuations and cost determinations must be made in order that an indication may be had regarding the accrued and accruing financial obligations under the retirement system and to illustrate cost trends. This is especially important in retirement systems where, either because of the character of the membership or the types of benefit provisions, costs will increase materially in future years as compared with the small expenditures incurred during the early years of the system's existence.

Types of valuations

Two different methods are used in making an actuarial valuation. One consists of projecting the income and disbursements for a period of years taking into account in such projection membership trends, separations, mortality and other relevant factors bearing upon the future course of operations of the retirement system. The second method is to set up the assets and liabilities of the system as of a given date, both accrued and prospective. From the latter method future contribution rates are computed which may prove sufficient to discharge the benefit liabilities over the expected working lifetime of the members.

Each of these two methods has certain advantages and disadvantages. The principal feature of the projection method is that a graphic and more understandable presentation of what may happen in the future is possible. The second method involves the preparation of a balance sheet and is easier to apply because of the fewer assumptions made as to the probable future experience.

Under either method, costs are figured into perpetuity because of the assumption of a continuous flow of new members into the system to replace those who have retired, died or have otherwise become separated from service, and of probable increases in total membership. The balance sheet method is probably more difficult to understand because it includes the presentation of a technical financial statement reflecting actuarial techniques. That method generally provokes the comment that the figures embodied therein are only actuarial costs and do not represent real costs. This viewpoint is erroneous because the figures constitute actual costs and liabilities, actuarially determined.

It must be assumed that the system will continue in existence at least until it has discharged in full its obligations to all members thereof, both retired and active, disregarding for the moment prospective future entrants. The incorrect interpretation of the actuarial balance sheet probably arises from the fact that the ultimate cost figures and the accumulated assets of the system, as compared to current benefit payments, are so much larger than the amounts of benefits currently being paid.

An actuarial valuation of the system has been completed as of June 30, 1958, according to the balance sheet method and the results are presented in the succeeding pages.

VALUATION BALANCE SHEET

A valuation balance sheet, embodying the results of the computation of reserves and liabilities, is presented in the succeeding pages. The technique used in the preparation of this statement is similar to that followed by accountants in the preparation of a financial balance sheet, except that a valuation balance sheet is broader in scope. It includes, in addition to the current liabilities, the actuary's evaluation of the accrued and prospective liabilities, and the present and prospective assets, actuarially determined.

A sound financial condition exists from the actuarial standpoint when assets are on hand equal to the difference between (1) the total of all accrued and prospective liabilities, and (2) the present value of future contributions to be received by the system. This is known as the actuarial reserve.

The valuation balance sheet, showing the financial condition of the system at June 30, 1958, is presented in the following pages.

VALUATION BALANCE SHEET - JUNE 30, 1958

A S S E T S

PRESENT ASSETS

Net present assets	\$30,484,647.00	
Less, releases of member contributions on account of refunds and death benefits	<u>9,104,529.00</u>	\$ 21,380,118.00

DEFERRED ASSETS

Obligation of the members and the employer for retirement and disability annuities covering service of members for the remainder of their active working lifetime subsequent to June 30, 1958 -		
State Employees -		
Members	\$ 5,781,255.00	
State	<u>11,397,758.00</u>	17,179,013.00
Teachers -		
Members	\$ 5,645,724.00	
State	5,417,568.00	
Cities and towns	<u>5,417,567.00</u>	16,480,859.00

DEFERRED OBLIGATION OF THE STATE OF RHODE ISLAND AND CITIES AND TOWNS

Accrued Unfunded Liability - Present value of annuities and benefits in force, and accrued liabilities for retirement annuities and disability annuities on account of service prior to July 1, 1958, after credit for available present assets		<u>52,833,480.00</u>
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TOTAL ASSETS \$107,873,470.00

VALUATION BALANCE SHEET - JUNE 30, 1958

L I A B I L I T I E S

ACCRUED LIABILITIES

Reserve requirements
for annuities and
benefits in force -

State Employees
Teachers

\$ 3,901,544.00
14,885,097.00

\$ 18,786,641.00

Present value of accrued re-
quirements for retirement
annuities, disability annu-
ities and death benefits at
June 30, 1958 -

State Employees -

Male
Female

\$14,384,780.00
6,881,455.00

21,266,235.00

Teachers -

Male
Female

\$ 6,463,662.00
27,697,060.00

34,160,722.00

PROSPECTIVE LIABILITIES

Present value of retirement
annuities and disability
annuities on account of
service to be rendered
after June 30, 1958 -

State Employees
Teachers

\$17,179,013.00
16,480,859.00

33,659,872.00

TOTAL LIABILITIES

\$107,873,470.00

Interpretation of Valuation
Balance Sheet

The foregoing statement sets forth the financial condition of the system from a technical standpoint. The accrued unfunded liability of \$52,833,480.00 constitutes an indebtedness of the State and the cities and towns to the pensioners and active members which is to be met by future contributions under the prescribed method of financing.

The retirement law provides for the employer to make a contribution each year at a rate per cent of payroll fixed by the retirement board upon the basis of a ten-year projection of expenditures and member contributions. This method of financing is essentially partial funding and has resulted in the gradual building up of the reserves of the system. A new projection was made last year and upon the basis of that projection new rates were fixed for the ensuing 10-year period. These rates should result in continued accretions to the reserves.

This method of partial funding should serve to cushion in future years the effect of increasingly larger payments by the system as the pension roll attains materially higher levels with the expansion of the system's operations.

CONCLUDING COMMENTS

An interest rate of 3% per annum has been assumed in our valuation. This may tend towards a slight overstatement of the calculated reserves and liabilities in relation to the present rate of interest earnings on invested assets and the rate to be expected during the foreseeable future. An interest rate for valuation purposes must reflect the expected income over a long period of years under the established investment authority. Until it is demonstrated over a considerable period of time that interest income will average a higher rate than 3%, the use of that rate is justified.

The system is developing satisfactorily and is fulfilling its objectives in an adequate measure. Its benefit schedule is well suited to the needs of the employees comprising its membership. Rates of benefit and qualifying conditions compare most favorably with similar provisions in effect for State government employees and teachers of other States.


By the recent addition for State employees of the old-age and survivors' insurance provisions of the Federal Social Security Act, on an elective basis, the benefit schedule was extended to include survivors' benefits and other protections afforded by that program. This new addition to the benefit schedule will mean increasing obligations for the State under the graduated

schedule of contributions prescribed by social security. Further obligations may be imposed in future years on the participants in the social security system, meaning the employees and the State, if proposals for the expansion of that program to include other phases of employee welfare are adopted. We may look forward, therefore, to considerably higher costs for pensions and benefits in the future.

On a funded basis, which is the only correct method of expressing pension cost, the obligation of the State under the system exceeds 11% of payroll which includes amortization requirements on the unfunded accrued liability. Adding the cost of social security results in a total cost figure which is of fairly large proportion. Under the circumstances, therefore, proposals for increased benefits or more liberal qualifying conditions should be resisted if costs are to be kept within reasonable limitations.

The administration of the system, under the directives and policies of the Retirement Board, is maintaining a high standard of efficiency. The procedures in force reflect a conscientious and constructive approach to all problems arising in operations.

Respectfully submitted,


A. A. Weinberg
Actuary

A P P E N D I X

Summary of Benefit and Contribution
Provisions

Statistical Tables

Employees' Retirement System of the
State of Rhode Island

SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

In force June 30, 1958

B E N E F I T S

Service retirement allowance

Retirement is optional with a member upon attainment of the age of 60 years, provided he has at least 10 years of credited service. Any member completing 30 years of service may retire under age 60 on a reduced allowance which is the actuarial equivalent of the amount payable at age 60.

In the case of a member withdrawing from service prior to the attainment of age 60, the right to a retirement benefit vests in the member if his service credit is 10 years or more. The retirement allowance will become available to the member upon attainment of age 60, provided he has not taken a refund of his contributions.

Retirement of a member is compulsory on the first day of the calendar month next following that in which he attained age 70, unless the member requests permission to continue in service, in which case the retirement board may permit his continuation in service beyond such age for periods of one year.

The service retirement allowance is equal to $1\frac{2}{3}\%$ of average compensation^{1/}, multiplied by the number of years of total service, not to exceed 45 years, subject to a maximum of 75% of the rate of compensation at the date of retirement.

Options

A member, upon or after attainment of age 60, and the completion of 10 years of service, has certain specific options whereby he may receive a lesser amount of service re-

^{1/} Average compensation means the average annual compensation earnable by a member during the five consecutive years within his total service when such average was the highest.

tirement allowance for himself in order to provide, on an actuarial equivalent basis, an annuity for a designated beneficiary to become payable upon his death, whether death occurs while in service or thereafter while on retirement.

Non-occupational disability benefit

This benefit is available to any member having at least 10 years of credited service. The benefit is equal to 90% of the amount of the service retirement allowance covering the period of total credited service of the member.

A member qualifying for this benefit but not having completed 15 years of service, is entitled to receive the benefit prescribed for 15 years of service. If the member first entered service after the age of 45 years, his benefit is limited to 90% of the rate of service retirement allowance for which he would qualify if he remained in service until the age of 60 years and retired at such age.

Occupational disability benefit

A member becoming disabled as the direct result of the performance of duty, is entitled to a benefit equal to 66-2/3% of his rate of compensation at the date of becoming eligible for this benefit.

Non-occupational death benefit

Upon death of a member while in service, from any cause other than occupational disability, his designated beneficiary or the estate of the member is entitled to receive a refund of his accumulated contributions, without interest, together with an amount provided from State contributions equal to \$200.00 for each year of total service of the member. The payment from State contributions is subject to a minimum amount of \$500.00 and a maximum of \$5,000.00.

If the period of service of the member has been less than one year, the minimum benefit of \$500.00 is reduced by the difference between the amount of accumulated contributions that the member would have had at the end of one year of service had he continued to render service, and the amount of accumulated contributions actually credited at the date of death.

Members of the General Assembly may continue coverage under this benefit after withdrawal from the General Assembly by making an annual contribution of \$15.00.

Occupational death benefit

Upon death of a member due to occupational causes, his accumulated contributions, including interest, are payable to such person as the member shall have designated, or if no such designation shall have been made or if the beneficiary is not alive, payment is to be made to the estate of the member.

In addition to the above payment, the surviving widow is entitled to a benefit equal to 50% of the member's salary at date of death. If no widow survives, or upon death of the widow, or if the widow remarries before any child of the member has attained age 18, the 50% benefit is payable to the surviving child or children, until their attainment of age 18, or prior death. If there be no widow or minor child or children, the benefit is payable to a dependent father or mother for life.

Death benefit after retirement

Upon death of a retired member who did not elect any of the optional provisions of the Act, his beneficiary is entitled to a refund of the excess, if any, of the total member contributions at date of retirement, without interest, over the total retirement benefits paid to him. The minimum payment in such a case is an amount equal to five monthly installments of the retirement allowance, or the sum of \$300.00, whichever is the greater.

Refunds

A member, upon withdrawal from the State service, may receive a refund of his contributions to the System equal to the full amount of his contributions, plus interest on the amounts contributed by the member prior to July 1, 1947. No interest is payable on refunds representing amounts contributed by a member after July 1, 1947.

C O N T R I B U T I O N S

By members

Members of the System are required to contribute at the rate of 5% of salary, which rate is uniform for all employees, both male and female.

By the State of Rhode Island

The State of Rhode Island is obligated to make regular contributions to meet the cost of the various benefits after applying the amounts contributed by the members. These contributions are made by means of regular annual appropriations.

The contributions by the State for any fiscal year are to consist of an amount equal to the computed average annual expenditures for the various purposes of the System, for the period of ten years next succeeding the fiscal year in question after applying against these expenditures the amounts to be contributed by the members. A uniform rate is to be maintained under this method of determination for a period of ten years from July 1, 1947.

EXTENSION TO SCHOOL TEACHERS - MODIFICATIONS

Effective July 1, 1949, the System was extended to include teachers of the State schools and teachers of the several cities and towns of the State of Rhode Island.

All provisions of the System relating to State employees apply with equal force to such teachers. Prior service credit is extended to teachers covering the period prior to July 1, 1949.

Contributions for leaves of absence during any year may be made for the purpose of receiving pension credit under stated conditions. Credit for teaching service in any of the public schools of the United States, outside of this State,

and in any private school or institution not operated for profit is allowed, not exceeding a total of 10 years, upon payment of certain contributions. Such credit is available, however, only if the outside service was rendered more than 10 years before retirement.

The minimum service retirement allowance in the case of a teacher having rendered at least 35 years of service is \$1,000.00 per year. The minimum was increased in 1952 under a formula which provided an additional amount of not less than \$200.00 per year.

Any teacher having at least 20 years of credited service is assured of a minimum ordinary disability allowance (non-occupational) of \$800.00 per year. This amount was increased in 1952 under a formula which provided an additional payment of not less than \$200.00 per year.

All teachers are required to make contributions at a uniform rate of 5% of salary, regardless of age or sex. The cities and towns share with the State, on an equal basis, the remainder of the cost of financing the benefits payable to teachers of the cities and towns, after applying the amounts contributed by the teachers.

TABLE 1

Number of Members - STATE EMPLOYEES - and Total Salaries at June 30, 1958 - Classified by Age

MALE

Age June 30, 1958	Number of Members	Aggregate Annual Salary Rate	Age June 30, 1958	Number of Members	Aggregate Annual Salary Rate
16	1	\$ 2,184.00	50	136	
17	5	11,770.00	51	148	
18	17	34,289.00	52	144	\$ 564,289.00
19	23	49,900.00	53	148	625,234.00
			54	156	618,057.00
20	38	86,908.00			639,986.00
21	49	117,095.00	55	142	691,185.00
22	59	155,755.00	56	116	
23	69	178,482.00	57	130	612,686.00
24	69	189,294.00	58	154	476,780.00
			59	118	547,465.00
25	66	186,895.00			615,364.00
26	67	191,425.00	60	152	477,963.00
27	65	205,461.00	61	108	
28	95	307,116.00	62	109	598,389.00
29	74	238,464.00	63	96	416,810.00
			64	100	429,052.00
30	76	259,914.00			391,638.00
31	91	306,192.00	65	80	420,404.00
32	98	371,807.00	66	74	
33	94	364,929.00	67	50	348,295.00
34	104	408,183.00	68	44	314,206.00
			69	33	202,031.00
35	95	356,817.00			209,157.00
36	103	385,579.00	70	28	128,149.00
37	87	362,384.00	71	21	
38	113	448,307.00	72	11	118,502.00
39	94	363,744.00	73	12	98,203.00
			74	19	49,194.00
40	85	354,219.00			42,405.00
41	107	463,574.00	75	10	72,429.00
42	110	421,338.00	76	12	
43	103	434,885.00	77	6	29,325.00
44	101	423,014.00	78	9	46,935.00
			79	4	34,330.00
45	116	473,550.00			38,925.00
46	122	523,224.00	80	8	20,339.00
47	130	525,785.00	81	3	
48	116	521,184.00	82	1	29,051.00
49	136	528,237.00	83	1	13,396.00
			84	1	1,380.00
			85	2	300.00
				1	4,933.00
				*	3,439.00
					<u>5164</u>
					<u>\$20,182,130.00</u>

TABLE 2

Number of Members - STATE EMPLOYEES - and Total Salaries at June 30, 1958 - Classified by Age

F E M A L E

Age June 30, 1958	Number of Members	Aggregate Annual Salaries	Age June 30, 1958	Number of Members	Aggregate Annual Salaries
	8	\$ 17,556.00	50		
	27	56,815.00	51	83	\$ 277,616.00
	65	134,104.00	52	87	299,663.00
17			53	83	308,954.00
18			54	82	290,952.00
19				76	260,797.00
	96	207,890.00	55	84	279,464.00
20	74	182,236.00	56	90	343,359.00
21	86	226,286.00	57	66	230,229.00
22	79	211,489.00	58	77	276,569.00
23	65	177,065.00	59	55	187,228.00
24			60	64	229,340.00
	65	169,408.00	61	50	176,173.00
25	61	174,922.00	62	51	185,044.00
26	64	197,102.00	63	54	188,433.00
27	67	199,596.00	64	35	129,891.00
28	63	199,294.00			
29			65	37	147,739.00
	52	164,474.00	66	35	125,652.00
30	64	206,304.00	67	24	101,891.00
31	63	194,269.00	68	15	61,101.00
32	60	195,487.00	69	12	58,002.00
33	57	173,521.00			
34			70	16	65,981.00
	59	184,036.00	71	13	47,699.00
35	71	225,148.00	72	13	46,573.00
36	78	244,730.00	73	7	23,585.00
37	78	234,917.00	74	4	17,361.00
38	62	206,199.00			
39			75	6	30,444.00
	86	321,790.00	76	5	21,517.00
40	82	268,151.00	77	4	16,847.00
41	85	275,860.00	78	2	7,679.00
42	87	307,818.00	79	1	4,004.00
43	87	248,486.00			
44	78		80	<u>1</u>	<u>3,439.00</u>
	87	313,670.00			
45	76	262,094.00			
46	80	273,432.00			
47	86	296,046.00			
48	83	285,992.00			
49			TOTALS	<u>3,526</u>	<u>\$11,479,413.00</u>

TABLE 3

Number of Members - STATE EMPLOYEES -
at June 30, 1958 Classified by Length of Service

M A L E

<u>Length of Service</u>	<u>Number of Members</u>	<u>Aggregate Annual Salaries</u>	<u>Length of Service</u>	<u>Number of Members</u>	<u>Aggregate Annual Salaries</u>
1	640	\$ 2,047,132.00	30	11	\$
2	531	1,442,134.00	31	18	59,491.00
3	433	1,581,891.00	32	18	107,101.00
4	460	1,598,900.00	33	8	121,604.00
5	348	1,254,254.00	34	9	45,518.00
6	293	1,033,255.00	35	1	61,746.00
7	256	942,590.00	36	3	4,844.00
8	202	776,036.00	37	7	12,590.00
9	260	1,014,299.00	38	6	50,153.00
10	170	712,416.00	39	3	35,403.00
11	267	1,304,244.00	40	6	21,968.00
12	139	606,239.00	41	1	32,803.00
13	71	331,099.00	42	--	3,973.00
14	91	378,031.00	43	1	--
15	103	446,366.00	44	4	5,591.00
16	160	707,922.00	48	1	22,667.00
17	114	522,547.00	50	4	9,957.00
18	130	627,904.00	54	1	23,310.00
19	102	532,029.00			6,160.00
20	38	187,668.00			\$20,182,130.00
21	44	301,847.00			
22	61	337,069.00			
23	38	259,679.00			
24	16	78,620.00			
25	22	156,462.00			
26	19	85,626.00			
27	17	90,772.00			
28	25	139,270.00			
29	12	60,950.00			
			<u>TOTALS</u>	<u>5,164</u>	

TABLE 4

Number of Members - STATE EMPLOYEES -
at June 30, 1958 Classified by Length of Service

F E M A L E

<u>Length of Service</u>	<u>Number of Members</u>	<u>Aggregate Annual Salaries</u>	<u>Length of Service</u>	<u>Number of Members</u>	<u>Aggregate Annual Salaries</u>
1	505	\$ 1,320,704.00	30	13	\$
2	561	1,313,163.00	31	9	57,658.00
3	276	832,022.00	32	4	44,483.00
4	316	968,026.00	33	9	21,622.00
5	176	563,433.00	34	3	36,955.00
6	165	524,129.00	35	1	13,453.00
7	177	593,097.00	36	4	3,617.00
8	92	315,056.00	37	3	16,754.00
9	201	726,981.00	38	3	13,224.00
10	119	441,854.00	39	2	17,049.00
11	141	607,248.00	40	5	9,119.00
12	104	379,326.00	41	1	19,710.00
13	71	286,598.00	42	2	5,083.00
14	66	256,515.00	46	1	11,520.00
15	77	312,679.00	48	1	3,439.00
16	81	322,252.00	52	1	3,140.00
17	71	254,911.00			9,478.00
18	64	255,791.00			
19	38	159,019.00			
20	21	87,218.00			
21	36	174,366.00			
22	42	194,508.00			
23	14	68,999.00			
24	12	50,961.00			
25	5	22,196.00			
26	6	30,331.00			
27	7	38,728.00			
28	10	48,568.00			
29	10	44,430.00			
			<u>TOTALS</u>	<u>3,526</u>	<u>\$11,479,413.00</u>

Service Retirement Annuities Classified
by Age and Amounts of Annual Payments

STATE EMPLOYEES

Age at June 30, 1958	M A L E		Age at June 30, 1958	F E M A L E	
	Number	Annual Payments		Number	Annual Payments
49	1	\$ 1,110.84	49	--	\$ --
57	--	--	57	1	--
59	--	--	59	1	626.78
60	1	2,006.69	60	--	1,699.41
61	1	861.17	61	3	--
62	5	10,399.86	62	1	4,378.31
63	2	1,088.03	63	3	2,628.00
64	7	12,427.36	64	5	1,771.23
65	2	1,437.12	65	6	5,594.05
66	8	12,227.49	66	5	6,675.49
67	4	10,271.75	67	3	5,517.61
68	7	6,052.50	68	7	2,164.53
69	3	4,301.77	69	5	13,362.76
70	9	15,907.11	70	8	2,727.80
71	6	8,623.63	71	9	11,406.92
72	11	13,654.60	72	4	6,131.21
73	4	5,577.55	73	10	3,143.24
74	12	16,107.29	74	4	9,798.09
75	6	6,334.37	75	7	4,783.42
76	10	12,894.80	76	4	9,862.07
77	4	2,669.35	77	5	6,233.21
78	2	1,016.62	78	4	3,175.42
79	2	1,238.54	79	--	4,693.66
80	7	3,556.91	80	--	--
81	5	2,948.97	81	5	--
82	5	11,092.48	82	1	7,632.66
83	4	4,934.10	83	2	2,166.10
84	4	5,486.73	84	1	843.20
85	3	1,254.11	85	--	563.04
86	1	2,568.84	86	1	--
87	--	--	87	1	1,337.40
88	2	2,028.96	87	--	--
90	2	2,779.80	TOTALS	105	\$118,915.61
95	1	1,640.64			
TOTALS	141	\$184,499.98			

Cash Refund Annuities - Option 1 - Classified
by Age and Amount of Annual Payments

STATE EMPLOYEES

Age at June 30, 1958	M A L E		Age at June 30, 1958	F E M A L E	
	Number	Annual Annuities		Number	Annual Annuities
67	--	\$ --	67	1	--
68	1	2,720.33	68	1	1,172.73
69	1	2,083.17	69	--	455.09
70	1	1,308.56	70	--	--
72	2	1,408.52	72	--	--
75	1	460.02	75	2	--
76	--	--	76	--	3,189.13
77	4	3,074.53	77	3	3,684.56
78	3	2,296.24	78	1	322.10
79	1	1,425.91	79	1	1,477.59
80	5	7,197.58	80	1	1,375.69
81	2	2,248.28	81	--	--
83	--	--	81	1	1,029.85
84	2	3,608.58	83	1	1,454.24
86	3	1,213.02	84	--	--
87	1	1,095.90	86	--	--
TOTALS	27	\$30,140.64	87	--	--

TABLE 7

Optional Annuities Classified by Age and Amounts of Annual Payments

STATE EMPLOYEES

Joint and Last Survivor
Option 2

Ages at June 30, 1958	M A L E		Ages at June 30, 1958	F E M A L E	
	Number	Annual Annuities		Number	Annual Annuities
69/62	1	\$ 1,551.76	69/62	--	
70/69	1	1,831.59	70/69	--	\$ --
71/72	1	3,628.18	71/72	--	--
74/68	--	--	74/68	1	1,601.16
77/70	1	1,120.66	77/70	--	--
77/78	1	269.80	77/78	--	--
80/87	1	898.93	80/87	--	--
81/78	1	1,417.83	81/78	--	--
85/88	1	1,787.16	85/88	--	--
TOTALS	8	\$12,505.91		1	\$1,601.16

Joint and Last Survivor
Option 3

Ages at June 30, 1958	M A L E	
	Number	Annual Annuities
65/54	1	\$ 2,676.50
65/56	1	1,692.77
65/62	1	2,598.87
67/65	1	2,171.62
76/71	1	558.34
78/65	1	3,106.81
78/76	1	2,467.34
81/69	1	1,757.24
TOTALS	8	\$17,029.49

TABLE 8

Disability Annuities Classified by Age
and Amount of Annual Payments

STATE EMPLOYEES

Ordinary Disability		Amount of Annual Payments	Age at June 30, 1958	F E M A L E	
Age at June 30, 1958	M A L E Number			Number	Amount of Annual Payments
		\$2,803.38	56	--	\$ --
		--	57	1	1,131.66
56	--	1,193.00	58	1	507.35
57	1	--	59	1	992.39
58	--	--	60	2	1,563.86
59	--	2,741.35	63	--	--
60	1	--	71	1	460.20
63	--	539.09	73	--	--
71	1	--	78	1	299.52
73	--	1,743.36	79	--	--
78	2	--		7	\$4,954.98
79	6	\$9,020.18			
TOTALS					

Ordinary Disability Annuity Option 1		Amount of Annual Payments	Age at June 30, 1958	F E M A L E	
Age at June 30, 1958	M A L E Number			Number	Amount of Annual Payments
63	1	\$ 643.97	63	--	\$ --
66	--	--	66	1	645.41
TOTALS	1	\$ 643.97			

Accidental Disability Annuity		Amount of Annual Payments	Age at June 30, 1958	F E M A L E	
Age at June 30, 1958	M A L E Number			Number	Amount of Annual Payments
59	--	\$ --	59	1	\$ 876.00
71	--	--	71	1	1,648.44
72	1	351.36	72	--	--
TOTALS	1	\$ 351.36		2	\$2,524.44

TABLE 9

Beneficiary Annuities Classified by Age and Amount of Annual Payments

STATE EMPLOYEES

Accidental Death Benefits

Age at June 30, 1958	<u>M A L E</u>		Age at June 30, 1958	<u>F E M A L E</u>	
	Number	Amount of Annual Payments		Number	Amount of Annual Payments
52	--	\$ --	52	1	
54	--	--	54	1	\$ 374.40
58	--	--	58	1	509.64
72	--	--	72	1	426.40
TOTALS	--	--		4	426.40
					\$1,736.84

Beneficiary Annuities Option 2

Age at June 30, 1958	<u>M A L E</u>		Age at June 30, 1958	<u>F E M A L E</u>	
	Number	Amount of Annual Payments		Number	Amount of Annual Payments
63	1	\$1,150.80	63	--	
64	2	2,612.70	64	--	\$ --
65	--	--	65	1	1,515.36
66	--	--	66	1	2,357.40
67	1	4,525.80	67	--	--
68	2	2,943.27	68	--	--
72	2	5,688.84	72	--	--
73	--	--	73	1	774.00
74	--	--	74	1	2,064.25
81	1	271.73	81	--	--
85	1	1,787.16	85	--	--
TOTALS	10	\$18,980.30		4	\$6,711.01

TABLE 10

Number of Members - TEACHERS - and Total Salaries at June 30, 1958 - Classified by Age

M A L E

Age June 30, 1958	Number of Members	Aggregate Annual Salaries	Age June 30, 1958	Number of Members	Aggregate Annual Salaries
	1	\$ 3,600.00	50		
	6	20,000.00	51	35	\$ 204,769.00
21	18	61,300.00	52	37	206,007.00
22	19	65,402.00	53	36	216,507.00
23			54	24	135,827.00
24			54	37	233,449.00
	43	145,193.00			
25	40	139,415.00	55	35	202,998.00
26	45	161,325.00	56	33	194,188.00
27	65	234,961.00	57	25	141,926.00
28	59	223,572.00	58	21	125,328.00
29			59	16	100,809.00
	72	276,377.00			
30	45	184,006.00	60	13	84,990.00
31	68	285,336.00	61	22	145,687.00
32	63	272,080.00	62	15	90,207.00
33	61	275,424.00	63	15	82,236.00
34			64	6	39,375.00
	50	229,870.00			
35	51	238,631.00	65	11	63,474.00
36	51	236,075.00	66	5	30,345.00
37	51	263,572.00	67	2	11,650.00
38	45	230,884.00	68	5	29,550.00
39			69	5	30,225.00
	40	214,537.00			
40	44	232,275.00	70	4	23,270.00
41	22	115,360.00	71	--	--
42	40	211,197.00	72	1	6,300.00
43	47	252,480.00	73	1	5,200.00
44					
	31	174,009.00	TOTALS	1,655	\$8,156,058.00
45	43	241,120.00			
46	47	270,400.00			
47	46	275,851.00			
48	38	217,489.00			
49					

TABLE 11

Number of Members - TEACHERS - and Total Salaries
at June 30, 1958 - Classified by Age

F E M A L E

Age June 30, 1958	Number of Members	Aggregate Annual Salaries	Age June 30, 1958	Number of Members	Aggregate Annual Salaries
21	3	\$ 9,800.00	50	140	
22	63	197,075.00	51	166	
23	144	468,594.00	52	141	\$ 726,183.00
24	147	505,581.00	53	142	885,309.00
			54	128	765,487.00
25	122	434,476.00			758,418.00
26	110	401,795.00	55	114	687,269.00
27	77	278,992.00	56	122	623,870.00
28	95	358,203.00	57	78	650,102.00
29	68	255,709.00	58	99	436,759.00
			59	87	535,022.00
30	81	325,246.00			481,529.00
31	71	308,675.00	60	81	442,489.00
32	57	254,326.00	61	75	413,096.00
33	55	235,372.00	62	77	430,588.00
34	45	198,923.00	63	67	430,588.00
			64	53	365,089.00
35	49	220,539.00			302,745.00
36	51	219,192.00	65	48	270,242.00
37	63	283,853.00	66	30	169,053.00
38	62	295,360.00	67	45	256,270.00
39	63	274,207.00	68	37	216,977.00
			69	19	105,286.00
40	84	391,390.00			
41	91	452,998.00	70	13	79,101.00
42	72	335,050.00	71	4	20,800.00
43	83	409,415.00	72	1	2,500.00
44	88	426,581.00	73	--	--
			74	--	--
45	97	500,178.00			
46	102	496,695.00	75	2	11,546.00
47	126	643,803.00	76	1	5,876.00
48	141	733,444.00			
49	162	846,219.00			
			TOTALS	4,242	\$20,403,297.00

TABLE 12

Number of Members - TEACHERS - at
June 30, 1958 - Classified by Length of Service

M A L E

Length of Service	Number of Members	Aggregate Annual Salaries	Length of Service	Number of Members	Aggregate Annual Salaries
	180	\$ 653,920.00	30	24	\$ 145,922.00
1	142	539,463.00	31	26	159,347.00
2	144	573,733.00	32	14	92,824.00
3	125	528,497.00	33	16	89,316.00
4			34	13	84,130.00
5	62	272,459.00			
6	59	263,201.00	35	4	24,500.00
7	84	387,311.00	36	4	28,375.00
8	105	502,488.00	37	3	17,050.00
9	126	704,082.00	38	3	32,925.00
			39	2	12,375.00
10	36	186,586.00			
11	20	108,960.00	40	3	20,900.00
12	45	254,845.00	41	1	6,075.00
13	19	113,870.00	42	--	--
14	14	79,974.00	43	1	5,875.00
			44	--	--
15	9	49,524.00			
16	29	169,719.00	45	2	10,800.00
17	23	136,681.00			
18	24	129,712.00	TOTALS	1,655	\$8,156,058.00
19	31	185,978.00			
20	32	184,265.00			
21	34	201,286.00			
22	27	162,533.00			
23	37	216,041.00			
24	28	167,038.00			
25	10	58,505.00			
26	14	95,550.00			
27	24	144,795.00			
28	37	229,811.00			
29	19	124,817.00			

TABLE 13

Number of Members - TEACHERS - at
June 30, 1958 - Classified by Length of Service

F E M A L E

Length of Service	Number of Members	Aggregate Annual Salaries	Length of Service	Number of Members	Aggregate Annual Salaries
			30	74	\$
1	542	\$ 1,955,361.00	31	75	
2	319	1,215,544.00	32	73	420,610.00
3	281	1,154,063.00	33	69	432,530.00
4	307	1,334,433.00	34	73	415,894.00
					392,650.00
5	271	1,230,235.00	35	45	423,653.00
6	158	708,669.00	36	39	255,897.00
7	100	442,683.00	37	41	223,257.00
8	75	335,060.00	38	27	234,089.00
9	281	1,439,140.00	39	46	154,635.00
					262,444.00
10	44	208,808.00	40	36	206,999.00
11	40	206,812.00	41	32	183,450.00
12	48	240,968.00	42	34	193,130.00
13	52	281,514.00	43	26	151,596.00
14	42	220,310.00	44	25	145,980.00
15	52	270,631.00	45	23	132,006.00
16	49	269,169.00	46	21	123,145.00
17	63	338,938.00	47	11	67,995.00
18	55	295,489.00	48	12	73,343.00
19	52	276,487.00	49	3	18,890.00
20	48	269,703.00	50	1	5,700.00
21	58	319,581.00	51	1	7,050.00
22	69	370,929.00			
23	67	370,285.00			
24	61	337,054.00	TOTALS	4,242	\$20,403,297.00
25	48	263,164.00			
26	40	217,775.00			
27	96	539,312.00			
28	71	394,680.00			
29	66	371,557.00			

TABLE 14

Service Retirement Annuities Classified
by Age and Amounts of Annual Payments

TEACHERS

M A L E

Age at June 30, 1958	Number	Annual Payments	Age at June 30, 1958	Number	Annual Payments
	2	\$ 5,150.47		--	\$ --
59	--	--	60	2	5,494.23
60	4	10,066.93	61	10	27,192.62
61	3	7,827.17	62	11	29,873.54
62	1	3,433.63	63	13	36,405.98
63	2	7,157.67	64	16	42,727.85
64					
	3	8,163.40	65	16	45,175.11
65	3	7,410.53	66	18	51,910.56
66	3	8,820.49	67	24	69,144.16
67	4	11,620.81	68	23	64,817.46
68	2	4,275.06	69	19	48,516.34
69					
	3	7,238.04	70	30	79,829.93
70	9	21,099.22	71	43	123,911.71
71	5	17,319.02	72	39	95,261.83
72	3	8,832.53	73	28	79,836.12
73	9	24,007.85	74	24	61,501.85
74					
	1	3,573.50	75	28	68,964.62
75	2	4,239.63	76	24	60,481.31
76	1	1,850.40	77	19	37,820.62
77	--	--	78	24	42,922.08
78	2	4,253.95	79	21	31,719.94
79					
	3	11,136.00	80	12	18,533.15
80	--	--	81	3	4,688.08
81	--	--	82	2	2,665.76
82	--	--	83	2	3,335.88
83	--	--	84	2	3,392.56
84	--	--			
85	--	--	85	--	--
86	1	2,457.84	86	2	3,180.30
87	--	--	87	1	1,792.06
88	--	--	88	1	1,830.25
TOTALS	67	\$179,934.14		457	\$1,142,925.90

TABLE 15Cash Refund Annuities - Option 1 - Classified
by Age and Amount of Annual PaymentsTEACHERSF E M A L E

<u>Age at June 30, 1958</u>	<u>Number</u>	<u>Annual Annuities</u>
68	1	
69	1	\$ 2,199.73
75	1	2,006.10
76	1	1,562.67
77	1	3,227.49
	—	2,684.16
TOTALS	5	<u>\$11,680.15</u>

TABLE 16Optional Annuities Classified by Age and
Amounts of Annual PaymentsTEACHERSJoint and Last Survivor
Option 2

<u>M A L E</u>			<u>F E M A L E</u>		
<u>Ages at June 30, 1958</u>	<u>Number</u>	<u>Annual Annuities</u>	<u>Ages at June 30, 1958</u>	<u>Number</u>	<u>Annual Annuities</u>
61/57	1	\$ 2,117.88	61/57	1	\$ 1,160.40
64/56	1	2,396.86	64/56	--	--
66/59	1	1,559.60	66/59	--	--
67/50	1	1,041.13	67/50	--	--
68/41	--	--	68/41	1	899.19
69/66	1	1,527.27	69/66	--	--
72/66	1	1,920.84	72/66	--	--
72/82	1	1,853.65	72/82	--	--
74/71	1	2,063.21	74/71	--	--
75/75	1	1,975.53	75/75	--	--
76/72	--	--	76/72	1	1,841.34
TOTALS	9	\$16,455.97		3	\$3,900.93

Joint and Last Survivor
Option 3

<u>M A L E</u>			<u>F E M A L E</u>		
63/62	1	\$ 2,342.29	63/62	--	\$ --
66/59	2	5,968.94	66/59	--	--
66/68	1	2,931.35	66/68	--	--
67/69	--	--	67/69	1	1,626.67
71/69	1	5,208.32	71/69	--	--
73/74	1	3,720.00	73/74	--	--
74/59	1	2,023.53	74/59	--	--
79/69	1	1,415.74	79/69	--	--
80/70	1	2,143.35	80/70	--	--
TOTALS	9	\$25,753.52		1	\$1,626.67

TABLE 17
Disability Annuities Classified by Age
and Amount of Annual Payments

TEACHERS

<u>Ordinary Disability</u>		<u>F E M A L E</u>	
<u>Age at June 30, 1958</u>	<u>Number</u>	<u>Amount of Annual Payments</u>	<u>Age at June 30, 1958</u>
48	1	\$1,331.93	48
50	--	--	50
51	--	--	51
54	--	--	54
55	1	1,399.54	55
57	--	--	57
58	2	3,178.60	58
59	2	3,295.55	59
Totals	6	\$9,205.62	60
			61
			62
			63
			64
			65
			66
			68
			Totals
			28

Accidental Disability Annuities

<u>M A L E</u>		<u>F E M A L E</u>	
<u>Age at June 30, 1958</u>	<u>Number</u>	<u>Amount of Annual Payments</u>	<u>Age at June 30, 1958</u>
43	--	--	43
			1
			Totals
			1

TABLE 18

Deduced Salary Scale Based Upon Average Annual Salaries

STATE EMPLOYEES

<u>Age</u>	<u>Average Salary</u>	<u>Adjusted Average</u>	<u>Effective Salary</u>	<u>Future Service Salary</u>
20	\$2,287	\$2,287	\$4,600	\$3,912
21	2,390	2,390	4,600	3,948
22	2,640	2,489	4,879	3,984
23	2,587	2,587	4,600	4,018
24	2,743	2,677	4,713	4,053
25	2,832	2,767	4,708	4,086
26	2,857	2,857	4,600	4,119
27	3,161	2,965	4,904	4,151
28	3,233	3,073	4,840	4,183
29	3,222	3,180	4,661	4,213
30	3,288	3,288	4,600	4,241
31	3,365	3,365	4,600	4,269
32	3,794	3,794	4,600	4,295
33	3,882	3,882	4,600	4,310
34	3,925	3,925	4,600	4,323
35	3,756	3,965	4,358	4,337
36	3,743	4,006	4,298	4,349
37	4,164	4,046	4,734	4,361
38	3,967	4,087	4,465	4,372
39	3,869	4,127	4,312	4,383
40	4,167	4,167	4,600	4,392
41	4,332	4,185	4,762	4,401
42	3,830	4,203	4,192	4,411
43	4,222	4,222	4,600	4,420
44	4,188	4,242	4,541	4,429
45	4,082	4,262	4,406	4,437
46	4,283	4,283	4,600	4,446
47	4,045	4,302	4,325	4,455
48	4,493	4,320	4,784	4,463
49	3,752	4,339	3,978	4,471

TABLE 18 - continued

Deduced Salary Scale Based Upon Average Annual Salaries

STATE EMPLOYEES

M A L E

<u>Age</u>	<u>Average Salary</u>	<u>Adjusted Average</u>	<u>Effective Salary</u>	<u>Future Service Salary</u>
50	\$4,149	\$4,357	\$4,380	
51	4,225	4,376	4,441	\$4,480
52	4,292	4,394	4,493	4,488
53	4,324	4,413	4,507	4,496
54	4,431	4,431	4,600	4,504
		4,442	4,468	4,512
55	4,315	4,454	4,245	4,519
56	4,110	4,470	4,333	4,527
57	4,211	4,486	4,098	4,535
58	3,996	4,502	4,189	4,543
59	4,051	4,518	4,008	4,551
60	3,937	4,535	3,914	4,559
61	3,859	4,551	3,978	4,567
62	3,936	4,567	4,108	4,575
63	4,079	4,583	4,220	4,583
64	4,204	4,600	4,354	4,592
65	4,354			4,600

TABLE 19

Deduced Salary Scale Based Upon Average Annual Salaries

STATE EMPLOYEES

F E M A L E

<u>Age</u>	<u>Average Salary</u>	<u>Adjusted Average</u>	<u>Effective Salary</u>	<u>Future Service Salary</u>
20	\$2,166	\$2,343	\$3,691	\$3,440
21	2,463	2,463	3,993	3,465
22	2,631	2,631	3,993	3,487
23	2,677	2,720	3,930	3,507
24	2,724	2,810	3,871	3,526
		2,900	3,588	3,543
25	2,606	2,990	3,834	3,559
26	2,871	3,080	3,993	3,574
27	3,080	3,122	3,810	3,587
28	2,979	3,163	3,993	3,600
29	3,163	3,187	3,963	3,612
30	3,163	3,210	4,010	3,624
31	3,224	3,234	3,808	3,636
32	3,084	3,258	3,993	3,648
33	3,258	3,285	3,700	3,660
34	3,044	3,312	3,760	3,673
35	3,119	3,339	3,792	3,684
36	3,171	3,366	3,723	3,697
37	3,138	3,393	3,515	3,708
38	3,012	3,420	3,846	3,720
39	3,294	3,447	4,335	3,732
40	3,742	3,474	3,644	3,743
41	3,170	3,500	3,702	3,754
42	3,245	3,527	3,993	3,765
43	3,527	3,549	3,585	3,776
44	3,186	3,570	4,032	3,787
45	3,605	3,592	3,834	3,798
46	3,449	3,614	3,776	3,808
47	3,418	3,636	3,780	3,819
48	3,442	3,658	3,762	3,830
49	3,446			

TABLE 19 - continued

Deduced Salary Scale Based Upon Average Annual Salaries

STATE EMPLOYEES

F E M A L E

<u>Age</u>	<u>Average Salary</u>	<u>Adjusted Average</u>	<u>Effective Salary</u>	<u>Future Service Salary</u>
50	\$3,345	\$3,680	\$3,630	
51	3,444	3,700	3,717	\$3,841
52	3,722	3,722	3,993	3,852
53	3,548	3,745	3,783	3,862
54	3,431	3,768	3,636	3,873
				3,884
55	3,317	3,791	3,494	3,894
56	3,815	3,815	3,993	3,905
57	3,488	3,835	3,632	3,915
58	3,592	3,855	3,721	3,925
59	3,404	3,875	3,508	3,935
60	3,583	3,895	3,673	3,945
61	3,523	3,915	3,593	3,954
62	3,628	3,935	3,681	3,964
63	3,678	3,955	3,713	3,974
64	3,711	3,974	3,729	3,984
65	3,993	3,993	3,993	3,993

TABLE 20

Deduced Salary Scale Based Upon Average Annual Salaries

TEACHERS

M A L E

<u>Age</u>	<u>Average Salary</u>	<u>Adjusted Average</u>	<u>Effective Salary</u>	<u>Future Service Salary</u>
21	\$3,600	\$3,334	\$7,343	\$5,301
22	3,333	3,370	6,725	5,340
23	3,406	4,306	6,800	5,386
24	3,442	3,442	6,800	5,433
25	3,377	3,490	6,580	5,481
26	3,485	3,538	6,698	5,531
27	3,585	3,585	6,800	5,582
28	3,615	3,615	6,800	5,635
29	3,789	3,789	6,800	5,689
30	3,839	3,939	6,627	5,742
31	4,089	4,089	6,800	5,791
32	4,196	4,231	6,744	5,844
33	4,319	4,373	6,716	5,893
34	4,515	4,515	6,800	5,940
35	4,597	4,695	6,658	5,986
36	4,875	4,875	6,800	6,029
37	4,629	5,022	6,268	6,069
38	5,168	5,168	6,800	6,106
39	5,133	5,266	6,628	6,141
40	5,363	5,363	6,800	6,175
41	5,279	5,442	6,596	6,207
42	5,244	5,521	6,459	6,239
43	5,280	5,600	6,411	6,270
44	5,370	5,679	6,442	6,301
45	5,613	5,758	6,629	6,330
46	5,607	5,837	6,532	6,359
47	5,753	5,917	6,612	6,386
48	5,997	5,997	6,800	6,412
49	5,723	6,049	6,434	6,437

TABLE 20 - continued

Deduced Salary Scale Based Upon Average Annual Salaries

TEACHERS

M A L E

<u>Age</u>	<u>Average Salary</u>	<u>Adjusted Average</u>	<u>Effective Salary</u>	<u>Future Service Salary</u>
50	\$5,856	\$6,101	\$6,527	
51	5,568	6,153	6,153	
52	6,014	6,205	6,591	\$6,461
53	5,659	6,257	6,150	6,485
54	6,309	6,309	6,800	6,509
				6,532
55	5,300	6,354	6,207	6,555
56	5,884	6,399	6,253	
57	5,677	6,444	5,991	6,577
58	5,968	6,489	6,254	6,600
59	6,301	6,534	6,558	6,622
				6,644
60	6,538	6,578	6,759	6,667
61	6,622	6,622	6,800	
62	6,014	6,666	6,135	6,689
63	5,482	6,710	5,556	6,711
64	6,563	6,755	6,607	6,733
				6,755
65	5,770	6,800	5,770	6,778
				6,800

TABLE 21

Deduced Salary Scale Based Upon Average Annual Salaries

TEACHERS

F E M A L E

<u>Age</u>	<u>Average Salary</u>	<u>Adjusted Average</u>	<u>Effective Salary</u>	<u>Future Service Salary</u>
21	\$3,267	\$2,928	\$6,282	
22	3,128	3,128	5,630	\$4,787
23	3,268	3,268	5,630	4,829
24	3,439	3,439	5,630	4,869
				4,907
25	3,561	3,561	5,630	
26	3,653	3,653	5,630	4,943
27	3,623	3,749	5,441	4,977
28	3,771	3,845	5,522	5,011
29	3,730	3,941	5,329	5,044
				5,077
30	4,015	4,037	5,599	
31	4,348	4,133	5,923	5,108
32	4,462	4,229	5,940	5,139
33	4,279	4,325	5,570	5,168
34	4,422	4,422	5,630	5,197
				5,224
35	4,501	4,501	5,630	
36	4,298	4,589	5,273	5,250
37	4,506	4,677	5,424	5,275
38	4,764	4,764	5,630	5,299
39	4,352	4,835	5,068	5,321
				5,342
40	4,659	4,906	5,347	
41	4,978	4,978	5,630	5,361
42	4,653	5,023	5,215	5,379
43	4,933	5,067	5,481	5,396
44	4,848	5,111	5,340	5,412
				5,428
45	5,156	5,156	5,630	
46	4,870	5,195	5,278	5,443
47	5,110	5,234	5,471	5,457
48	5,202	5,273	5,554	5,471
49	5,224	5,312	5,537	5,484
				5,497

TABLE 21 - continued

Deduced Salary Scale Based Upon Average Annual Salaries

TEACHERS

F E M A L E

<u>Age</u>	<u>Average Salary</u>	<u>Adjusted Average</u>	<u>Effective Salary</u>	<u>Future Service Salary</u>
50	\$5,187	\$5,351	\$5,457	\$5,508
51	5,333	5,390	5,570	5,519
52	5,429	5,429	5,630	5,528
53	5,348	5,444	5,531	5,536
54	5,369	5,459	5,537	5,543
55	5,473	5,473	5,630	5,551
56	5,329	5,488	5,467	5,559
57	5,599	5,504	5,625	5,567
58	5,404	5,620	5,414	5,574
59	5,535	5,535	5,630	5,582
60	5,463	5,550	5,542	5,590
61	5,508	5,566	5,571	5,598
62	5,592	5,582	5,640	5,606
63	5,449	5,598	5,480	5,614
64	5,523	5,614	5,539	5,622
65	5,630	5,630	5,630	5,630