

Employees Retirement System  
of the State of  
Rhode Island

EIGHTEENTH ANNUAL REPORT  
OF THE  
RETIREMENT BOARD

For the Fiscal Year Ended  
June 30, 1953

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Employees Retirement System of the  
State of Rhode Island

EIGHTEENTH ANNUAL REPORT  
of the  
RETIREMENT BOARD

For the Fiscal Year Ended  
June 30, 1953

Employees Retirement System of the  
State of Rhode Island

EIGHTEENTH ANNUAL REPORT  
of the  
RETIREMENT BOARD

In accordance with the provisions of Section 3 of Act No. 18 of the General Laws, as amended, governing the Employees Retirement System of the State of Rhode Island, the Retirement Board submits herewith its annual report on the operations of the system as of June 30, 1953.

This report shows the financial condition of the system and such other information that is generally of value in an evaluation of the experience and progress of the system. Included also is a report from the actuary on the results of the actuarial investigation of the mortality and service experience for the period from July 1, 1946 to June 30, 1953, and an actuarial valuation of assets, liabilities and reserves.

MEMBERSHIP

	<u>State Employees</u>	<u>Teachers</u>	<u>Total</u>
Number of Members, July 1, 1952	6,410	4,558	10,968
New Members	<u>1,050</u>	<u>377</u>	<u>1,427</u>
Total membership during year	<u>7,460</u>	<u>4,935</u>	<u>12,395</u>
Terminations -			
Retirements	37	75	112
Separations with refund	829	166	995
Deaths in service	<u>56</u>	<u>13</u>	<u>69</u>
Total terminations	<u>922</u>	<u>254</u>	<u>1,176</u>
Number of Members, June 30, 1953	<u>6,538</u>	<u>4,681</u>	<u>11,219</u>

It will be noted from the foregoing statistics that membership of both State employees and teachers increased during the year.

RETIREMENT DATA

	<u>State Employees</u>	<u>Teachers</u>	<u>Total</u>
Number at July 1, 1952	188	243	431
Retirements during year	<u>37</u>	<u>75</u>	<u>112</u>
Total	225	318	543
Terminations by death	<u>12</u>	<u>11</u>	<u>23</u>
Number, June 30, 1953	<u>213</u>	<u>307</u>	<u>520</u>

STATISTICAL AND FINANCIAL TRENDS

Year Ended June 30,	Statistical		Financial	
	Membership	Retirement Roll	Net Income for Year	Net Assets at End of Year
1948	4,446	139	\$ 777,603.34	\$ 3,880,684.38
1949	4,700	155	877,303.53	4,757,987.91
1950	9,975 <sup>1/</sup>	299	1,949,262.62	6,705,327.87
1951	10,269	376	2,140,306.22	8,845,280.17
1952	10,968	431	2,700,115.56	11,544,102.04
1953	11,219	520	2,560,027.37	14,101,038.61

The following statement will illustrate the trend in pension and death benefit payments during the last six fiscal years:

Year Ended June 30,	Statistical				Financial	
	Number of Retired Members at End of Year		Number of Death Claims Paid During Year		Amount of Pension and Death Benefit Payments	
	State Employees	Teachers	State Employees	Teachers	State Employees	Teachers
1948	139	--	38	--	\$116,202.89	\$ ---
1949	155	--	36	--	149,025.34	---
1950	162	137	42	12	193,776.89	251,236.94
1951	178	198	40	19	182,576.56	365,473.04
1952	188	243	43	15	224,381.01	465,505.67
1953	213	307	56	13	271,267.90	620,248.40

<sup>1/</sup> Teachers became participants of the system on July 1, 1949. A total of 4,407 teachers were enrolled as members on such date.

RESULTS OF CURRENT FINANCIAL OPERATIONS

Statements illustrating the results of financial operations for the year under review are presented as a part of this report. Net income for the year amounted to \$2,560,027.37. This is slightly lower than the net income for the preceding fiscal period, which amounted to \$2,700,115.56.

Reflecting the larger equities of the members, as the result of additional service and increased contribution credits, the net assets of the system increased during the year from \$11,544,102.04 to \$14,101,038.61, or the sum of \$2,556,936.57. This increase was equal to 22%.

The financial condition of the system has shown continued improvement. It is noted that the equities of the members have increased during the last several years in keeping with the upward trend in assets. The following statement shows the average amount of net assets per member at the end of each of the last six fiscal years, and clearly illustrates this improvement:



<u>June 30,</u>	<u>Net Assets Per Member</u>	
	<u>State</u> <u>Employees</u>	<u>Teachers</u>
1948	\$ 872.00	\$ ---
1949	1,012.00	---
1950	1,000.00 <sup>1/</sup>	239.00
1951	1,157.00	476.00
1952	1,245.00	781.00
1953	1,442.00	997.00

<sup>1/</sup> The lower average net assets per member at June 30, 1950, was due to the sharp increase in membership which occurred in that year. Membership during the year increased from 4,700 to 5,688 State employees, which was equal to 21%.

A continued increase in assets must be maintained to provide for accruing pension liabilities. These liabilities are steadily increasing with the advance in ages of the members and with the accumulation of large pension credit due to increased service.

#### INVESTMENTS

The investments of the system increased during the year in the sum of \$1,952,955.25. Total investments at

June 30, 1953 amounted to \$13,169,223.55.

The following is a summary of the types of securities comprising the investment account at the close of the year with the amounts at the end of the preceding year given for comparison:

<u>Type of Security</u>	<u>Amount at June 30, 1953</u>	<u>Amount at June 30, 1952</u>	<u>Increase- Decrease*</u>
U. S. Government	\$12,152,500.00	\$10,502,500.00	\$1,650,000.00
Federal Land Bank	100,000.00	100,000.00	----
State of Rhode Island	1,000.00	1,000.00	----
Municipalities in Rhode Island	529,000.00	226,000.00	303,000.00
Municipalities in Canada	20,000.00	20,000.00	----
Public Utilities, Railroad and Industrial	142,000.00	142,000.00	----
Bank Stocks	224,723.55	224,768.30	44.75*
Totals	<u>\$13,169,223.55</u>	<u>\$11,216,268.30</u>	<u>\$1,952,955.25</u>

APPROPRIATIONS FOR THE FISCAL YEAR

1953-1954

The following appropriations were authorized by the General Assembly at the 1953 session for the 1953-1954 fiscal year:

State Employees

Normal appropriation - 4 $\frac{1}{2}$ % of assumed payroll of the members	\$632,500.00
Pension increases - Chapter 2037, P. L. 1948, for retirants	14,100.00
Pension increases - Chapter 3017, P. L. 1952, for retirants	17,600.00

Teachers

Normal requirements - 3% of assumed payroll of the members <sup>1/</sup>	\$495,000.00
Pension increases - Chapter 3000, P. L. 1952, for retirants	3,400.00

Special Appropriation

Hercules A. Altieri	\$ 3,080.00
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<sup>1/</sup> Total rate is 6% of payroll which is shared equally by the State of Rhode Island and the cities and towns.

The amounts appropriated by the State for the preceding fiscal year, on account of State employees and teachers for the normal requirements of the system were \$742,500.00 and \$457,500.00 respectively. The increases in appropriations were due to larger employee payrolls.

According to the report of the actuary, substantial increases in the rates of contribution by the State on account of State employees and teachers, as a percentage of payroll, are indicated.

These increases will come about through the operation of the following factors:

- (1) liberalizing changes in certain provisions of the retirement Act;
- (2) a downward trend in the rates of mortality of retirants; and
- (3) reduced rate of turnover in employment, below previously assumed levels.

Larger pension payments will result in future years due to the operation of these factors. These increased payments will necessitate a rate of contribution on the part of the State at a higher level than the rate now in effect.

EXISTING RESERVES AND ACCRUED  
UNFUNDED LIABILITIES

The system is gradually building up its reserves under the established method of financing. Reserves at June 30, 1953 amounted to \$14,101,038.61 as compared with \$11,544,102.04 at the close of the preceding year.

The method of financing the system reflects a modified form of funding. It provides that contributions by the state and by the cities and towns shall equal the average estimated expenditures for annuities and benefits for a period of ten years next following the year for which contributions are to be made, after taking credit for the amounts to be contributed by the members concerned in these expenditures.

The rate of contribution for the State employees, determined on this basis, is  $4\frac{1}{2}\%$  of the payroll, which is to remain at a uniform level for a period of ten years. This rate was established as of July 1, 1947. A reexamination thereof will be necessary during the year 1956, for the purpose of fixing the rate to be certified for the period of ten years beginning July 1, 1957. The rate applicable to the teacher-members was established at 6% of payroll beginning as of July 1, 1949, to be in effect for the remainder of the ten-year period dating from July 1, 1947.

This rate is shared equally by the State and by the cities and towns. A reexamination of such rate will also be required during the year 1956, for the purpose of establishing a rate for the period of ten years from July 1, 1957.

Notwithstanding the partial reserve method of financing, <sup>chapter</sup> Act No. 18 governing the operations of the Employees Retirement System of the State of Rhode Island requires the preparation of an actuarial balance sheet by the actuary as of the end of each fiscal year. Such a balance sheet is presented in the report of the actuary forming a part of this annual report. The balance sheet shows accrued unfunded liabilities as of June 30, 1953 amounting to \$26,726,892.39. These liabilities were determined with the use of life and service tables reflecting the operating experience of the system during the period from July 1, 1946 to June 30, 1953, as disclosed by our actuarial investigation.

The Act further requires that 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 last such actuarial investigation was due to be made as of June 30, 1952. Such an investigation has been completed and the results thereof are presented in the report of the actuary, which appears in the latter part hereof. The results were brought up to June 30, 1953, in order that more recent figures on the statistical and financial analyses may be presented.

LEGISLATION

Several changes in the retirement Act, of a substantive character, were made at the 1953 session of the General Assembly. These changes are summarized.

1. The Ordinary Death Benefit provision of the Law was amended whereby the minimum death benefit payable by the system was fixed at an amount equal to five monthly installments on the retirement allowance, or the sum of \$300.00, whichever is the larger. Previously minimum benefit payable was an amount equal to three monthly installments of the retirement allowance.

2. It was provided that any member completing at least 30 years of service may retire below the age of 60 years. The retirement allowance payable in such a case is the actuarial equivalent, at the member's age of retirement, of the value of the retirement allowance payable at age 60.

3. The provisions authorizing a member of the General Assembly to continue to receive coverage under the Ordinary Death Benefit provided by the system were extended to former members of the General Assembly who joined the system between December 31, 1947 and January 1, 1953, whose membership in the system had not been terminated.

RECOMMENDATIONS

It is provided in Section 3 of Chapter 18 that the annual report of the Retirement Board

"shall embody such other data as may be of use in the advancement of knowledge concerning state employee pensions and any recommendations of the board for changes in the laws pertaining to the system."

In its annual reports, the Retirement Board has endeavored to give effect to this directive by making recommendations for the improvement or revision of the plan of operation, and expressing its opinions concerning legislative proposals or enactments affecting its benefit and contribution provisions.

Pensions, like other subjects of broad application, seldom remain static. New and unforeseen conditions created by social and economic forces, and a broadening public consciousness of the accomplishments and objectives of pensions make the subject one of dynamic character requiring constant revaluation and analysis. From time to time proposals for changes in the existing provisions are made in the form of a broadening of coverage or a revision of benefits. Unfortunately, these proposals are frequently ill-conceived and ill-advised, and are generally



inconsistent with established standards and policies governing sound pension planning for public employees.

The Board views with much concern special grants to former State employees or dependents of deceased employees, outside of the retirement system, additional to the benefits prescribed by the system. Such grants are not only costly to the State but discriminate against the great mass of employees who are members of the system. Their effect is to modify or set aside the retirement Act which was designed to provide uniform benefits for all State employees and teachers on an equitable and non-discriminatory basis, in accordance with well-defined standards, conditions and qualifications prescribed for the receipt of such benefits. Special grants are generally unrelated to these specific standards and benefits, and these grants, therefore, are in violation of sound pension principle. The Board again records its objections to this practice since it is contrary to an equitable and practical pension policy for the State government, and effects large increases in State obligations.

Proposals aiming to increase present benefits or to liberalize qualifying conditions, and requests for the extension of the benefit schedule which are designed principally for the benefit of a few, are objectionable and should be rejected. Proposals for

Amendatory changes should be critically appraised in the light of accepted standards and policies governing pensions for the State government employees and teachers, and more particularly with respect to their present and future cost implications.

The proposals approved during recent years providing for the extension of pension credit beyond 36 years or for retirement after 30 years of service on a retirement allowance which is actuarially equated to the value of the allowance at age 60, reflect current pension trends. Benefits for dependents, in a restrictive form, are in accord with the social aspects of retirement plans and evidence the impact of the federal social security program on local pension policy. Liberalizing changes beyond proposals of this character, however, are not justified.

The persistent downward trend in mortality among retired members, low interest earnings and a reduced turnover, has had the effect of increasing pension cost. The imposition of further additional burdens upon the State government and the cities and towns, as employers, by means of amendatory changes in benefits and qualifying conditions, should be resisted, therefore, if a condition

of stability and financial soundness for the retirement system, and a constructive pension policy for the State government, is to be maintained.

CONCLUSION

The account of the system's experience recorded herein evidences the broadening scope of its operations during recent years. The underlying plan embodies provisions which compare favorably with similar provisions in effect for State government employees and teachers in other States.

The efforts of the Retirement Board will continue to be directed, as in the past, toward the effective administration of the system in strict accord with the expressed provisions of the retirement Act. The value of the system to the State employees and teachers, and its increasing importance to the State and political subdivisions, is well recognized. The system fulfills effectively its role as an essential adjunct of a sound and progressive personnel policy for the State of Rhode Island and its political subdivisions.

The record of the year's operations would not be complete without an acknowledgment of the loyal and conscientious efforts of the employees of the Retirement Board under the able direction of the Chief of the Retirement Division. Their devotion to duty has been responsible in no small measure for the efficient operation of the retirement system.

RETIREMENT BOARD  
EMPLOYEES RETIREMENT SYSTEM OF THE  
STATE OF RHODE ISLAND

\_\_\_\_\_  
Chairman

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\_\_\_\_\_  
Secretary

Employees Retirement System of the  
State of Rhode Island

FINANCIAL BALANCE SHEET - JUNE 30, 1953

A S S E T S

Cash		\$ 938,476.13
Investments (par value):		
U.S. Government	\$12,152,500.00	
Federal Land Bank	100,000.00	
State of Rhode Island	1,000.00	
Municipalities in Rhode Island	529,000.00	
Municipalities of Canada	20,000.00	
Industrial Bonds	142,000.00	
Bank Stocks (at cost)	<u>224,723.55</u>	
		<u>13,169,223.55</u>
<u>Total Assets</u>		<u><u>\$14,107,699.68</u></u>

R E S E R V E S

Reserve for Special Pension Increases		\$ 6,661.07
Annuity Reserve Account -		
State Employees		4,890,204.42
Teachers		<u>2,602,478.47</u>
Contingency Reserve Account -		
State Employees		4,540,345.34
Teachers		<u>2,068,010.38</u>
<u>Total Reserves</u>		<u><u>\$14,107,699.68</u></u>

Employees Retirement System of the  
State of Rhode Island

Statement of Cash Receipts and Disbursements  
for the Fiscal Year ended June 30, 1953

Cash Balance July 1, 1952

\$ 331,404.01

Receipts:

State Contribution -	
Employees	\$ 742,500.00
Teachers	457,500.00
Cities and Towns Contribution -	
Teachers	485,007.00
Employees	
Teachers	864,979.54
Member Contributions -	
Employees	838,368.90
Teachers	34,500.00
Contribution - Pension Increases	307,721.29
Income on Investments	21,822.82
Discount on Investments Purchased	55,044.75
Investments (Matured)	
Total Receipts	<u>3,807,444.30</u>
Total Available	\$4,138,848.31

Disbursements:

Refunds due to resignations -	
State Employees	215,216.94
Teachers	50,456.66
Pensions Paid -	
State Employees	271,267.90
Teachers	620,248.40
Pension Increases	31,274.67
Purchase of Investments	2,908,000.00
Premium & Interest on Purchases	3,009.09
Postage & Insurance on Investments	898.52

Total Disbursements

3,200,372.18

Cash Balance June 30, 1953

\$ 938,476.13

Employees Retirement System of the  
State of Rhode Island

Statement of Investments Owned  
June 30, 1953

<u>Description</u>	<u>Par Value</u>
<u>U. S. Government Bonds</u>	
U. S. Treasury Series G 2 $\frac{1}{2}$ %, due 8/1/54	\$ 50,000.00
U. S. Treasury Series G 2 $\frac{1}{2}$ %, due 11/1/54	50,000.00
U. S. Treasury Series G 2 $\frac{1}{2}$ %, due 9/1/55	100,000.00
U. S. Treasury Series G 2 $\frac{1}{2}$ %, due 2/1/56	10,000.00
U. S. Treasury Series G 2 $\frac{1}{2}$ %, due 9/1/59	100,000.00
U. S. Treasury Series G 2 $\frac{1}{2}$ %, due 7/1/60	750,000.00
U. S. Treasury Series G 2 $\frac{1}{2}$ %, due 12/1/61	100,000.00
U. S. Treasury Series G 2 $\frac{1}{2}$ %, due 2/1/62	100,000.00
U. S. Treasury Series G 2 $\frac{1}{2}$ %, due 10/1/62	1,000,000.00
U. S. Treasury Series G 2 $\frac{1}{2}$ %, due 1/1/64	100,000.00
U. S. Treasury 2 $\frac{1}{2}$ %, due 6/15/55-52	80,000.00
U. S. Treasury 2 $\frac{1}{2}$ %, due 3/15/56	30,000.00
U. S. Treasury 2 $\frac{1}{2}$ %, due 6/15/56-54	50,000.00
U. S. Treasury 2 $\frac{1}{2}$ %, due 3/15/56-58	30,000.00
U. S. Treasury 2 $\frac{1}{2}$ %, due 12/15/62	300,000.00
U. S. Treasury 2 $\frac{3}{4}$ %, due 9/15/59-65	20,000.00
U. S. Treasury 2 $\frac{3}{4}$ %, due 12/15/60-65	90,000.00
U. S. Treasury 2 $\frac{1}{2}$ %, due 12/15/63-68	650,000.00
U. S. Treasury 2 $\frac{1}{2}$ %, due 12/15/64-69	100,000.00
U. S. Treasury 2 $\frac{1}{2}$ %, due 3/15/65-70	195,000.00
U. S. Treasury 2 $\frac{1}{2}$ %, due 3/15/66-71	250,000.00
U. S. Treasury 2 $\frac{1}{2}$ %, due 6/15/67-72	2,850,000.00
U. S. Treasury 2 $\frac{1}{2}$ %, due 9/15/67-72	97,500.00
U. S. Treasury 2 $\frac{1}{2}$ %, due 12/15/67-72	400,000.00
U. S. Treasury 2 $\frac{3}{4}$ %, due 4/1/75-80	3,450,000.00
U. S. Treasury 3 $\frac{1}{2}$ %, due 6/15/78-83	1,200,000.00
	<hr/>
	\$12,152,500.00
 <u>Federal Land Banks</u>	
Bonds due May 1, 1956	<hr/> 100,000.00 100,000.00

Statement of Investments Owned  
June 30, 1953

<u>Description</u>	<u>Par Value</u>	
<u>State of Rhode Island</u>		
State Office Building, Registered, 4%, due 6/1/77	\$ 1,000.00	\$ 1,000.00
<u>Municipalities in Rhode Island</u>		
City of Central Falls, Funding 4%, due 4/1/65	3,000.00	
City of Central Falls, Refunding, 2 3/4%, due 6/1/67	10,000.00	
City of Cranston Sewer, 1.80%, due 3/1/76	10,000.00	
Town of Cumberland, School, 3 1/2%, due 5/15/1977-79	90,000.00	
Town of Cumberland, Water 3 1/2%, due 5/15/1977-1979	60,000.00	
Town of Johnston, School, 2.90%, due 9/1/1965-71-72-73-74	90,000.00	
Town of Narragansett Beach, 3%, due 4/1/1959-63	21,000.00	
City of Pawtucket, School, 4 1/2%, due 5/1/54	10,000.00	
City of Pawtucket, Water, 3 1/2%, due 12/1/1953-54	10,000.00	
City of Pawtucket, Sewer, 3 1/2%, due 12/1/1953-54	10,000.00	
City of Pawtucket, Highway, 3 1/2%, due 12/1/1953-54	9,000.00	
City of Pawtucket, Parks, 2 1/2%, due 7/1/1960-61	20,000.00	
Town of North Providence, Sewer, 3%, due 9/1/1967	35,000.00	
Town of North Providence, Funding, 3%, due 7/1/1962-72	32,000.00	
Town of Richmond, School, 4%, due 4/1/1959-62	4,000.00	
City of Warwick, Water, 4 1/2%, due 10/1/1972-73	24,000.00	
Town of West Warwick, School, 2 3/4%, due 11/1/1954-58	15,000.00	
Town of West Warwick, Sewer, 2 1/2%, due 7/1/1958-71	28,000.00	
Town of West Warwick, Sewer, 2 3/4%, due 2/1/1963	15,000.00	
Town of West Warwick, Sewer, 2.70% due 7/1/1978-79	25,000.00	
City of Woonsocket, Water, 4 1/2%, due 6/1/1966	5,000.00	
East Smithfield Water District, 3 3/4%, due 9/1/1953	3,000.00	
	<u>3,000.00</u>	\$ 529,000.00



Statement of Investments Owned  
June 30, 1953

<u>Description</u>	<u>Fair Value</u>	
<u>Municipalities of Canada</u>		
Province of Quebec, Dominion of Canada, 3%, due 7/15/1957	\$ 20,000.00	\$ 20,000.00
<u>Public Utilities, Railroad and Industrial</u>		
Appalachian Power Co., 1st Mortgage 3 1/4%, due 12/1/1970	20,000.00	
Central Maine Power Co., General and 1st Mortgage, 3 1/4%, due 10/1/1970	18,000.00	
Washington Water Power Company, 1st Mortgage, 3 1/2%, due 6/1/1964	16,000.00	
Phillip Petroleum Co., Sinking Fund Debentures, 2 3/4%, due 2/1/1964	27,000.00	
Atchison, Topeka and Santa Fe, General Mortgage, 4%, due 10/1/1995	10,000.00	
Chesapeake and Ohio Railway Co., Mortgage, 3 1/2%, due 8/1/1996	9,000.00	
Pennsylvania Railroad Co., General Mortgage, Series A, 4 1/4%, due 6/1/1965	12,000.00	
Pennsylvania Railroad Co., Equipment Trust, Series K, 2 1/2%, due 7/1/1955	20,000.00	
Chicago Union Station, 1st Mortgage, Series F, 3 1/8%, due 7/1/1963	10,000.00	142,000.00
<u>Bank Stocks</u>		
480 shs. Bankers Trust	19,150.00	
114 shs. Central Hanover Bank and Trust	9,050.00	
400 shs. Chase National Bank	11,237.50	
550 shs. Chemical Bank and Trust	16,642.00	
45 shs. First National Bank of New York	24,125.00	
440 shs. Guaranty Trust Company	20,160.00	
655 shs. Industrial Trust Company	23,318.00	
2000 shs. Irving Trust Company	21,750.00	
200 shs. Manufacturers Trust Company	11,350.00	
520 shs. National City Bank of New York	13,315.05	
100 shs. New York Trust Company	9,775.00	
545 shs. Providence Union National Bank	40,251.00	
40 shs. Rhode Island Hospital Trust	4,600.00	224,723.55
Total		\$13,169,223.55

Employees Retirement System of the  
State of Rhode Island

REPORT ON AN ACTUARIAL SURVEY AND INVESTIGATION  
OF THE OPERATING EXPERIENCE OF THE SYSTEM  
AND ANNUAL VALUATION OF ITS ASSETS AND LIABILITIES  
AS OF JUNE 30, 1953

In accordance with the provisions of Chapter 18 of the Public Laws of 1936, as amended, governing the operation of the Employees Retirement System of the State of Rhode Island, there is presented herewith a report on an actuarial survey and investigation of the operating experience of the system for the period from July 1, 1946 to June 30, 1953, and a valuation of the assets and liabilities of the system as of June 30, 1953.

The Act as amended in 1947, requires that an actuarial investigation be made in every five-year period beginning with the year 1937. Such a study was due to be made, therefore, as of June 30, 1952. The last such investigation was completed as of June 30, 1946. Because of the delay in this undertaking, the study was brought up to June 30, 1953, in order to provide more recent information on the operations of the system for the use and guidance in the formulation of future administrative policy.

Purpose of Actuarial Investigation

An actuarial survey and investigation is undertaken for the purpose of checking the actuarial functions in use in annual valuations reflecting the factors of mortality, turnover in employment interest and compensation. By means of annual valuations the true financial condition of the system from the actuarial standpoint is established currently by the application of the actuarial functions. Changes in the accrued liabilities for the various benefit obligations covering service prior to the date of valuation are disclosed, and the amount of the unfunded liabilities, constituting a deferred obligation of the State, is determined.

Rates of mortality among active members and retired members are formulated based upon experience data. The operating experience of the system with respect to new entrants into the system and separations from the system due to resignation, dismissal, death or retirement, are analyzed. Trends in rates of compensation are studied for the purpose of verifying the salary scales previously assumed in the determination of liabilities and costs. Trends in interest income are evaluated.

The several factors that are basic in the operation of a retirement system and in an evaluation of its experience are briefly discussed.

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 retirement such employees avoid 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 con-

templated 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.

The mortality measure used in this survey is the Combined Annuity Mortality Table. This is a standard table which was derived from group insurance experience among clerical employees more than 30 years ago. While this table may be considered adequate for the present, a change to a more conservative standard may be necessary in the future. This can be determined from the experience of the

present system. The basic factors constituting this table of mortality are reproduced in the appendix.

#### 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 retirement plans during recent years has made it possible for some employees to leave the service and retain their rights in a future pension experience.

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 placed upon disability retirement.

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 36.1% of the total accumulated sum consisting of

principal and interest, and after 25 years, to 32.7% of such sum.

To illustrate further, an investment made over a period of 25 years at 3% will produce 28% more income than one made at 2½% for the same period. Likewise, an investment made at 3½% for 25 years would produce 25% more income than one made at 3% for the same period of time.

The rate of interest used in calculations for the purposes of this survey is 3% per annum. This rate was adopted by the Board of Trustees at the inception of the system and is to be maintained until the investment earnings under the applicable investment authority are clearly established and defined.

#### Earnable Compensation

Since the retirement annuities payable by the system are based upon the highest average rate of compensation of a member during any 5 consecutive years of service prior to retirement, 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, representing 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 45 for a male member is \$3,747.00 and at age 60, \$4,377.00, it is assumed that the member now 45 years of age will be earning at age 60,  $4377/3747$ ths of his rate of salary at age 45.

The relationship between ages may be unaffected in a salary scale by an overall 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 applicable uniformly to 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.

#### STATISTICAL DATA

For the purposes of this actuarial investigation, a large amount of statistical data was compiled on both active members and pensioners. A number of tabulations were made. Some of the tables reflecting the statistics resulting from these tabulations and analyses are presented in the appendix.

The age, service and salary characteristics of the members were classified in the form required for our calculations. Statistics relating to pensioners were prepared to meet the requirements for a study of the operating experience concerning this group of beneficiaries.

Compilations of statistics covered the period of operations from July 1, 1946 to June 30, 1953. Information was gathered on new entrants during the period, separations from service due to the factors of death,

disability, age and service retirement, and resignations and dismissals with refund of contributions. A compilation was also made of the mortality experience among service and disability pensioners. Other pertinent information was obtained for a proper evaluation of the results of operations of the system. With the use of this information, standards were formulated to govern cost estimates and actuarial valuations.

The following is a summary of certain statistical information compiled for this survey:

	<u>Members</u>	<u>State Employees</u>	<u>Teachers</u>
Number at June 30, 1953 -			
Male	3,942		1,195
Female	2,596		3,486
Aggregate Salaries -			
Male	\$12,570,065.00		\$4,502,027.00
Female	6,729,863.00		11,817,973.00
Average Annual Salary -			
Male	\$3,189.00		\$3,767.00
Female	2,592.00		3,390.00
Average Age -			
Male	40.0		42.6
Female	40.9		45.3

(Continued)

	<u>Members</u>	<u>State Employees</u>	<u>Teachers</u>
Number of New Entrants, July 1, 1946 to June 30, 1953 -	7,233	5,561	
Number of Separations with Refund, July 1, 1946 to June 30, 1953 (from July 1, 1949 in the case of teacher- members)	4,079	479	
Average per year	583	120	
Number of Deaths while in service, July 1, 1946 to June 30, 1953 (from July 1, 1949, in the case of teacher- members)	299	59	
Average per year	42.7	14.8	
<u>Annuitants</u>			
Number at June 30, 1953	213	307	
Retirements, July 1, 1946 to June 30, 1953 (from July 1, 1949 in the case of teacher- members)	180	342 1/2	
Terminations among retired members, July 1, 1946 to June 30, 1953	69	35	

1/ Covering period from July 1, 1949  
to June 30, 1953.

MORTALITY AND WITHDRAWAL EXPERIENCE

Life and Service Tables

With the use of the statistics compiled for this study, life and service tables were prepared. A life and service table is required to establish actuarial functions for use in the valuation of the assets and liabilities of the retirement system and in the computation of cost estimates. These functions were applied in the preparation of the actuarial valuation balance sheet as of June 30, 1953, which is presented herewith.

A life and service table records the rates of death, separations from service due to resignations or dismissals with refund, deaths while in service, number of retirements, and the incidence of disability. In the process of arriving at these rates, graphic charts are prepared to which are transcribed the rates of separation caused by the above factors as tabulated from the original statistical data reflecting the experience among the group of participants covered by the survey. With the use of these graphs rates, as established in the original tabulations, were adjusted and graduated for the purpose of eliminating extreme variations from an indicated primary trend. The graduated rates



produced from a reading of these graphs were then applied in the preparation of the life and service tables.

Withdrawals from service

The experience among the members of the system with respect to the termination of membership by the acceptance of refunds was analyzed. In the refinement of these statistics for use in the preparation of actuarial functions, adjustments were made in the data to give effect to factors and conditions governing the present membership. The rates of separation used in this survey and the rates assumed in our previous study are presented for comparison.

Rates of Separation per 1,000 Members

Age	Rates Derived for This Survey		Rates Applied in Previous Valuations	
	State Employees	Teachers	Male and Female Combined	
20	92.7	80.8	62.7	50.8
25	91.2	77.4	61.2	47.4
30	86.8	74.7	56.8	41.7
35	79.9	62.5	49.9	33.7
40	68.5	52.5	39.7	25.7
45	53.7	42.5	24.6	16.9
50	38.5	32.5	11.4	0.8
55	16.6	19.8	0.2	0.2

The rates of separation from service as established in this survey are higher for State employees and lower for teachers than the comparable rates used in our previous actuarial valuations. Based upon the experience of the system during the last several years, these revised rates reflect our opinion regarding possible future separations from service with respect to State employees and teachers. These rates represent a more realistic evaluation of the factor of separations in the operation of the retirement system.

#### Mortality Among Active Members

Our analysis of the mortality incidents among the members in active service reveals that fewer deaths have occurred during recent years than assumed in our previous study or contemplated by recognized life insurance tables. This variation is especially marked for female members.

The following table shows the rates of mortality used in this survey and the comparative rates applied in our previous valuations.

Rates of Death per 1,000 Active Members

<u>AGE</u>	<u>Rates Derived For Survey</u>		<u>Rates Applied in Previous Valuations</u>	
	<u>State Employees</u>	<u>Teachers</u>	<u>Male and Female Combined</u>	
20	2.04	1.70	1.80	1.30
25	2.75	2.07	2.07	1.57
30	3.56	2.76	2.46	1.96
35	4.44	3.57	3.17	2.67
40	5.36	4.42	3.92	3.42
45	6.38	5.44	4.44	3.94
50	7.64	6.64	4.86	4.34
55	10.41	8.67	6.62	5.85

The lower rates of mortality among the members reflects the basic underlying trend and may be attributed to the following factors: (1) the general improvement in the health conditions among the State employees and teachers; (2) higher living standards in effect during recent years; (3) increased emphasis on welfare programs for the employees; and (4) the fact that the membership of the system comprises two specific occupational groups of a closely knit character. Standard mortality tables, therefore, are not applicable under such conditions.

Mortality among annuitants

Because of the comparatively small number of annuitants on the roll and the relatively short period of operations of the system especially with respect to teachers, it is difficult to draw any reliable conclusions from their mortality experience in comparison with recognized standards.

Our analysis of the limited experience with respect to the annuitants discloses that the rate of mortality among the State employee retired members seems to approximate closely the rates contemplated by the Combined Annuity Mortality Table. This is a standard which was derived from group insurance experience among clerical employees some 30 years ago. The rates of mortality shown by this table are reproduced below for certain ages:

<u>Age</u>		<u>Rates of Mortality Per 1,000</u>
<u>Male</u>	<u>Female</u>	
60	64	23.02
65	69	34.25
70	74	50.81
75	79	75.06
80	84	110.18
85	89	160.27

The paucity of data on teacher retirements due to the short period in which these persons have been members of the system does not allow for the preparation of rates of mortality which could be accepted as reflecting the possible long term trend with respect to this factor. However, exposure tables have been prepared for an analysis of rates, and these tables have disclosed that the rates among female retirees are fairly close to the rates shown by the 1937 Standard Annuity Mortality Table and that the rates among male retirees are slightly above the level of rates disclosed by this table. The rates of mortality for certain ages according to this mortality table are shown below.

<u>Age</u>		<u>Rates of Mortality per 1,000</u>
<u>Male</u>	<u>Female</u>	
60	65	19.75
65	70	28.75
70	75	41.76
75	80	60.46
80	85	87.16
85	90	124.84

The lower rates of mortality among the teacher re-  
tired members and the fewer separations from service prior  
to retirement due to resignation or death mean higher  
pension cost for teacher-members and account for the  
larger contribution rates on the part of the State and  
the cities and towns for this group of members.

Current service cost

The current service cost represents the accruing  
pension cost for retirement annuities, disability annu-  
ties and death benefits, on account of service being  
rendered by the members. This is frequently referred to  
as "normal cost" and represents the current premium for  
the benefits provided by the system.

Our computations disclose that the accruing current  
service cost on account of State employees and teachers  
is as follows:

	<u>State Employees</u>	<u>Teachers</u>
Male	\$1,759,288.00	\$ 665,068.00
Female	<u>903,612.00</u>	<u>1,953,260.00</u>
Total	\$2,662,900.00	\$2,618,328.00
Less, Contributions by members at rate of 5% of salary	<u>964,996.00</u>	<u>816,000.00</u>
Obligation of the employer	<u>\$1,697,904.00</u>	<u>\$1,802,328.00</u>
As percentage of payroll	<u>8.8%</u>	<u>11.04%</u>

The foregoing rates of contribution would be required from the State of Rhode Island on account of the State employees, and from the State and the cities and towns on account of teachers, each sharing equally, to meet the cost of the system on an actuarially funded basis. While the system operates according to a modified form of funding which meets the requirements of the State satisfactorily, the above data is given for information purposes since this is the only true measure of expressing the actual pension obligation.

Accrued Liabilities

The accrued liabilities consist of the reserve requirements on the annuities and benefits being paid by the system and the proportionate pension credits earned by the members for their service prior to the date of valuation, namely, June 30, 1953.

1. The present value of annuities and benefits entered upon and in force is as follows:

	Number	Annual Payments	Reserve Liability
Retired State Employees And Beneficiaries	213	\$232,267.00	\$1,491,386.00
Retired Teacher Members and Beneficiaries	307	597,248.00	4,709,897.00
Totals	520	\$829,515.00	\$6,201,283.00

2. The liabilities for pension credits earned during service rendered prior to July 1, 1953, including provision for death and disability benefits, are as follows:

	State Employees	Teachers
Male	\$6,411,658.00	\$5,044,283.00
Female	4,597,201.00	14,221,362.00
Totals	\$11,008,859.00	\$19,265,645.00



Net Present Assets

Net assets of the system at June 30, 1953, amounted to \$14,101,038.61. This consists of the following items:

Members' Accumulated Contribution Credits -

State Employees	\$ 4,890,204.42
Teachers	2,602,478.47

Contingency Reserve Account -

State Employees	4,510,345.34
Teachers	<u>2,068,010.38</u>

Total	<u>\$14,101,038.61</u>
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Of the total amount of member contributions at June 30, 1953, only a certain proportion will be available to meet the cost of retirement annuities at retirement, representing that part of the present group of members who will attain vested rights and will preserve those rights, or who will be in service at the time of retirement. The remainder of these contributions will have been paid out to members terminating their membership before retirement by resignation or death. Hence, the net present assets available, on a discounted basis, to meet the accrued liabilities of the system at June 30, 1953, are as follows:

Net Assets	\$14,101,038.61
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Less, releases of member contributions prior to retirement age -

State Employees	\$3,384,022.00
Teachers	<u>968,122.00</u>
	4,352,144.00

Balance, available to meet accrued liabilities

<u>\$9,748,894.61</u>
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Unfunded Accrued Liability

The amount of the unfunded accrued liability at June 30, 1953, was arrived at as follows:

<u>Accrued Liabilities at June 30, 1953 -</u>	
1. On account of pensions in force	\$ 6,201,283.00
2. On account of active members	30,274,504.00
Total	<u>\$36,475,787.00</u>

Available assets - \$9,748,894.61

1. To be applied to pensions in force	\$ 6,201,283.00
2. Remainder available for the liabilities on account of members in service	3,547,611.61
Total	<u>\$9,748,894.61</u>
Difference, Unfunded Accrued Liability	<u>\$26,726,892.39</u>

To amortize the unfunded liability over a period of 40 years, assuming interest at the rate of 2 3/4% per annum, will require an annual payment of \$1,064,730.00. This is equal to 3.0% of payroll.

Prospective Liabilities

These liabilities relate to service to be rendered subsequent to July 1, 1953, during the future working lifetime of the present members. The amounts of liability as computed are as follows:

State Employees -	
Male	\$4,504,335.00
Female	<u>3,627,191.00</u>
	\$8,211,526.00
Teachers -	
Male	\$2,906,046.00
Female	<u>8,807,462.00</u>
	\$11,713,508.00

These liabilities are to be discharged by future contributions by the members and by the employer under the method of financing prescribed by the Act governing the operation of the system.

VALUATION BALANCE SHEET

The Valuation Balance Sheet reflecting the results of these determinations has been prepared as of June 30, 1953, showing the assets and liabilities of the system from an actuarial standpoint. In the preparation of such statement, a technique has been used which is similar in many respects

to that followed by accountants in the preparation of a financial balance sheet. The form of statement prepared by the actuary, however, differs from the accountant's balance sheet in that it shows, in addition to the results of current financial operations, the actuary's evaluation of the accrued and prospective liabilities, and the present and prospective assets, determined in accordance with actuarial requirements.

The Valuation Balance Sheet presented in the following pages exhibits the results of this determination. This statement includes: (1) the present value of the annuities and benefits entered upon and in force at the date of valuation; (2) the accrued liabilities for the proportionate pension credits earned by the State employees and teachers for the periods of service rendered to the date of valuation; (3) the present value of annuities and benefits to be earned during the remaining working life of the State employees and teacher-members; (4) the present and prospective assets; and (5) the accrued unfunded liability which represents a deferred obligation of the State of Rhode Island and the cities and towns.

A sound financial condition exists from an actuarial

standpoint when assets have been accumulated by the system which are equal to the difference between (1) the total of all liabilities, both accrued and prospective, and (2) the present value of the obligations for future service, i.e., service subsequent to June 30, 1953, which are described as "Deferred Assets".

VALUATION BALANCE SHEET

JUNE 30, 1953

VALUATION BALANCE SHEET - JUNE 30, 1953

A S S E T S

PRESENT ASSETS

Net present assets..... \$14,101,038.61  
 Less, releases of  
 member contributions  
 on account of refunds  
 and death benefits..... 4,352,144.00

\$ 9,748,894.61

DEFERRED ASSETS

Obligations of the  
 participants and the  
 employer for retirement  
 and disability annuities  
 covering service of members  
 for the remainder of their  
 active working lifetime  
 subsequent to June 30, 1953..... \$19,925,034.00

DEFERRED OBLIGATION OF  
THE STATE OF RHODE ISLAND

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, 1953..... \$26,726,892.39

Total Assets

\$56,400,821.00

VALUATION BALANCE SHEET - JUNE 30, 1953

LIABILITIES

ACCRUED LIABILITIES

Reserve requirements for annuities and benefits in force -

State Employees \$1,491,386.00  
Teachers 4,709,897.00

\$ 6,201,283.00

Present Value of accrued requirements for retirement annuities, disability annuities and death benefits, at June 30, 1953 -

State Employees -  
Male \$6,411,658.00  
Female 4,597,201.00

11,008,859.00

Teachers -  
Male \$ 5,044,283.00  
Female 14,221,362.00

19,265,645.00

PROSPECTIVE LIABILITIES

Present Value of retirement annuities and disability annuities on account of service to be rendered after June 30, 1953 -

State Employees \$ 8,211,526.00  
Teachers 11,713,508.00

19,925,034.00

Total

\$56,400,821.00



CONCLUSION

Since June 30, 1946, when the last actuarial investigation was completed, a number of changes have occurred affecting the substantive provisions of the retirement Act relating to both the benefit and contribution provisions. These changes brought about increases in obligations. They are fully expressed in the foregoing Valuation Balance Sheet.

A study of the turnover and mortality experience has disclosed certain marked variations from previous assumptions. New life and service tables were prepared from which certain actuarial functions were derived. These functions were used in the valuation of reserves and liabilities. Thus a more realistic appraisal of the financial condition of the system was possible. Separate rates were established for State employees and teachermembers, with variations for the factor of sex.

It is recommended that the Combined Annuity Mortality Table be continued as the standard of mortality measurement for State employees in the calculation of annuities, but that the 1937 Standard Annuity Mortality Table be adopted as the measure of mortality among retired teacher members. The rate of interest assumption for the various purposes of the system, for all members, should be fixed at 2½% per annum.

It is further recommended that the rates of separation from service prior to retirement, shown in the tables in the appendix, be adopted by the Retirement Board for use in future valuations of reserves and liabilities.

The system is developing satisfactorily under the plan of benefit and contribution provisions adopted in 1947, which established a more equitable benefit schedule and more adequate benefit payments. The administrative policies and procedures in effect are sound and constructive, and reflect an intelligent and conscientious approach to the various problems arising in administration. These policies give promise of the continued effective operation of the system in accordance with the established law in fulfillment of its stated objectives.

A. A. Weinberg  
Actuary

A P P E N D I X A

Summary of Benefit and  
Contribution Provisions

Employees Retirement System of the  
State of Rhode Island

SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

In force June 30, 1953

B E N E F I T S

1. 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,  $\frac{1}{2}$  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 date of retirement.

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$\frac{1}{2}$  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.

2. Reversionary annuity

A member, upon retirement, has the option of receiving a lesser amount of service retirement allowance for himself in order to provide, on an actuarial equivalent basis, an annuity for a designated beneficiary to become payable upon his death, under certain prescribed optional privileges.

3. 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.

4. Occupational disability benefit

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

5. 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 \$2,000.00.

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.

#### 6. Occupational death benefit

Upon death of a member due to occupational causes, his accumulated contributions, including interest, are payable to such person having an insurable interest in his life 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 child or minor children, the benefit is payable to a dependent father or mother for life.

7. 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.

8. 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.

CONTRIBUTIONS

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 subsequent to 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. This 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 \$300.00 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.

A P P E N D I X B

Statistical Tables

Employees Retirement System of the  
State of Rhode Island

TABLE 1.

SHOWING NUMBER OF MEMBERS AND ANNUAL SALARIES  
AT VARIOUS AGES AS OF JUNE 30, 1953

STATE EMPLOYEES - MALE

Age	Number	Annual Salaries	Age	Number	Annual Salaries
less than age 20	27	\$ 54,258.00	50	102	\$ 383,139.00
20	17	32,400.00	51	87	300,695.00
21	16	31,046.00	52	88	335,120.00
22	28	54,490.00	53	106	392,328.00
23	34	64,838.00	54	90	317,322.00
24	36	74,348.00	55	118	391,176.00
25	26	55,246.00	56	90	296,685.00
26	53	121,212.00	57	96	333,231.00
27	53	121,823.00	58	109	356,168.00
28	52	122,041.00	59	129	423,167.00
29	75	179,641.00	60	96	346,871.00
30	50	125,576.00	61	102	358,807.00
31	71	200,265.00	62	77	216,160.00
32	60	162,942.00	63	69	208,197.00
33	85	258,088.00	64	56	164,306.00
34	66	207,998.00	65	59	168,226.00
35	69	222,934.00	66	40	122,349.00
36	72	235,797.00	67	43	135,361.00
37	72	206,668.00	68	33	83,920.00
38	72	241,133.00	69	42	118,505.00
39	55	168,565.00	70 and over	212	540,725.00
40	77	267,187.00	Unknown	3	2,280.00
41	104	374,409.00	Totals	3942	\$12,570,065.00
42	104	370,203.00			
43	91	329,148.00			
44	83	278,200.00			
45	101	355,017.00			
46	103	384,758.00			
47	110	411,928.00			
48	118	409,085.00			
49	109	413,683.00			

Employees Retirement System of the  
State of Rhode Island

TABLE 2.  
SHOWING NUMBER OF MEMBERS AND ANNUAL SALARIES  
AT VARIOUS AGES AS OF JUNE 30, 1953

STATE EMPLOYEES - FEMALE

Age	Number	Annual Salaries	Age	Number	Annual Salaries
less than age 20	31	\$ 54,280.00	50	49	137,471.00
20	54	92,520.00	51	73	230,530.00
21	66	117,080.00	52	53	150,824.00
22	84	151,540.00	53	58	174,618.00
23	61	147,640.00	54	44	133,130.00
24	74	142,900.00	55	46	139,590.00
25	102	203,340.00	56	40	111,231.00
26	86	177,758.00	57	43	130,007.00
27	68	146,760.00	58	47	130,187.00
28	64	150,135.00	59	40	123,078.00
29	61	122,808.00	60	40	112,251.00
30	42	97,440.00	61	51	138,308.00
31	56	139,430.00	62	33	83,891.00
32	58	143,539.00	63	24	65,017.00
33	57	145,666.00	64	21	58,916.00
34	42	105,213.00	65	23	60,751.00
35	52	151,476.00	66	21	48,201.00
36	49	139,428.00	67	20	43,062.00
37	56	152,473.00	68	21	48,629.00
38	57	171,745.00	69	12	31,160.00
39	39	114,224.00	70 and over	59	162,825.00
40	57	178,662.00	Totals	2596	\$6,729,763.00
41	38	120,559.00			
42	50	155,711.00			
43	48	134,290.00			
44	49	145,763.00			
45	53	167,793.00			
46	44	130,442.00			
47	56	179,366.00			
48	55	163,956.00			
49	49	151,358.00			

Employees Retirement System of the  
State of Rhode Island

TABLE 3.

SHOWING NUMBER OF MEMBERS AND ANNUAL SALARIES  
AT VARIOUS AGES AS OF JUNE 30, 1953

TEACHERS - MALE

Age	Number	Annual Salaries	Age	Number	Annual Salaries
23	1	\$ 1,600.00	55	15	\$ 65,920.00
24	11	27,249.00	56	28	131,387.00
25	17	42,233.00	57	29	94,626.00
26	19	50,621.00	58	18	65,733.00
27	27	67,341.00	59	12	58,000.00
28	34	89,801.00	60	12	52,300.00
29	40	106,343.00	61	12	56,650.00
30	24	70,870.00	62	5	21,000.00
31	32	89,976.00	63	9	36,580.00
32	43	133,225.00	64	9	37,883.00
33	41	140,553.00	65	10	43,960.00
34	40	128,050.00	66	9	39,300.00
35	38	133,594.00	67	3	43,250.00
36	27	100,915.00	68	3	15,000.00
37	23	82,756.00	69	3	23,033.00
38	39	140,278.00	70 and over	6	25,913.00
39	43	169,043.00	Totals	1195	\$4,502,027.00
40	34	132,492.00			
41	46	186,471.00			
42	36	175,462.00			
43	44	164,319.00			
44	40	151,174.00			
45	37	155,023.00			
46	37	145,706.00			
47	33	142,209.00			
48	24	100,206.00			
49	38	167,658.00			
50	31	135,131.00			
51	35	147,467.00			
52	27	115,066.00			
53	23	100,612.00			
54	21	95,018.00			

Employees Retirement System of the  
State of Rhode Island

TABLE B.

SHOWING NUMBER OF MEMBERS AND ANNUAL SALARIES  
AT VARIOUS AGES AS OF JUNE 30, 1953

TEACHERS - FEMALE

Age	Number	Annual Salaries	Age	Number	Annual Salaries
22	1	\$ 2,400.00	55	76	272,150.00
23	39	88,922.00	56	65	304,217.00
24	99	226,517.00	57	93	339,254.00
25	114	277,800.00	58	63	305,646.00
26	117	299,713.00	59	72	260,617.00
27	92	254,803.00	60	66	247,826.00
28	64	174,765.00	61	57	219,573.00
29	51	154,000.00	62	71	270,608.00
30	59	186,235.00	63	61	231,756.00
31	47	152,113.00	64	40	155,550.00
32	55	177,900.00	65	44	165,866.00
33	50	165,386.00	66	43	167,191.00
34	42	136,367.00	67	34	125,340.00
35	61	206,653.00	68	24	90,840.00
36	77	259,561.00	69	17	64,621.00
37	47	167,234.00	70 and over	50	188,900.00
38	56	208,359.00	Totals	3486	\$11,017,973.00
39	57	200,046.00			
40	77	205,056.00			
41	59	223,087.00			
42	60	266,013.00			
43	95	313,764.00			
44	117	401,607.00			
45	106	365,086.00			
46	125	431,782.00			
47	112	390,655.00			
48	109	376,148.00			
49	106	379,800.00			
50	103	368,931.00			
51	107	383,432.00			
52	71	259,532.00			
53	69	312,580.00			
54	84	294,259.00			

Employees Retirement System of the  
State of Rhode Island

TABLE 5

RATES OF SEPARATION FROM SERVICE

STATE EMPLOYEES - MALE

Age	Deaths	Withdrawals with refund	Disability
20	*00204	*0927	*00096
21	*00216	*0926	*00096
22	*00231	*0927	*00097
23	*00244	*0923	*00097
24	*00259	*0927	*00097
25	*00275	*0912	*00098
26	*00289	*0605	*00098
27	*00306	*0897	*00099
28	*00320	*0888	*00099
29	*00336	*0879	*00100
30	*00356	*0868	*00100
31	*00372	*0855	*00100
32	*00388	*0844	*00101
33	*00407	*0820	*00102
34	*00425	*0815	*00104
35	*00444	*0799	*00105
36	*00459	*0781	*00107
37	*00479	*0761	*00110
38	*00497	*0740	*00115
39	*00516	*0713	*00122

(Continued)

TABLE 5 - (Continued)

<u>Age</u>	<u>Deaths</u>	<u>Withdrawals with refund</u>	<u>Disability</u>
40	*00536	*0685	*00132
41	*00557	*0655	*00144
42	*00576	*0625	*00159
43	*00596	*0597	*00179
44	*00617	*0866	*00203
45	*00638	*0537	*00240
46	*00660	*0509	*00256
47	*00682	*0470	*00273
48	*00705	*0447	*00291
49	*00731	*0418	*00314
50	*00764	*0385	*00329
51	*00804	*0332	*00350
52	*00849	*0290	*00372
53	*00905	*0251	*00401
54	*00969	*0212	*00427
55	*01041	*0166	*00563
56	*01128	*0127	*00507
57	*01222	*0092	*00576
58	*01335	*0061	*00662
59	*01456	*0002	*00755



Employees Retirement System of the  
State of Rhode Island

TABLE 6

RATES OF SEPARATION FROM SERVICE  
STATE EMPLOYERS - FEMALE

<u>Age</u>	<u>Deaths</u>	<u>Withdrawals with refund</u>	<u>Disability</u>
20	*00170	*0806	*00066
21	*00174	*0797	*00066
22	*00179	*0794	*00067
23	*00193	*0788	*00067
24	*00199	*0782	*00067
25	*00207	*0774	*00067
26	*00222	*0765	*00068
27	*00228	*0755	*00068
28	*00248	*0744	*00068
29	*00253	*0731	*00068
30	*00276	*0747	*00069
31	*00288	*0701	*00070
32	*00308	*0683	*00071
33	*00323	*0665	*00072
34	*00338	*0645	*00074
35	*00357	*0625	*00078
36	*00375	*0606	*00082
37	*00394	*0586	*00085
38	*00408	*0566	*00092
39	*00431	*0546	*00101

(Continued)

TABLE 6-- (Continued)

<u>Age</u>	<u>Deaths</u>	<u>Withdrawals with refund</u>	<u>Disability</u>
40	*00442	*0525	*00112
41	*00455	*0505	*00125
42	*00474	*0485	*00138
43	*00497	*0465	*00161
44	*00524	*0445	*00176
45	*00544	*0425	*00191
46	*00562	*0405	*00216
47	*00591	*0386	*00231
48	*00619	*0366	*00247
49	*00646	*0346	*00263
50	*00664	*0325	*00280
51	*00692	*0304	*00298
52	*00723	*0281	*00317
53	*00755	*0260	*00330
54	*00833	*0236	*00359
55	*00867	*0198	*00383
56	*00879	*0151	*00410
57	*00907	*0010	*00440
58	*00959	*0006	*00470
59	*01007	*0001	*00510

Employees Retirement System of the  
State of Rhode Island

TABLE 7

RATES OF SEPARATION FROM SERVICE

TEACHER-MEMBERS - MALE

Age	Deaths	Withdrawals with refund	Disability
20	.00180	.0627	.0003
21	.00184	.0620	.0004
22	.00189	.0627	.0005
23	.00193	.0627	.0006
24	.00199	.0621	.0007
25	.00207	.0612	.0008
26	.00212	.0605	.0009
27	.00218	.0597	.0010
28	.00220	.0588	.0011
29	.00233	.0579	.0012
30	.00246	.0560	.0013
31	.00258	.0555	.0014
32	.00278	.0544	.0015
33	.00283	.0521	.0016
34	.00298	.0515	.0017
35	.00317	.0499	.0019
36	.00335	.0481	.0020
37	.00354	.0461	.0022
38	.00368	.0440	.0024
39	.00381	.0419	.0026

(Continued)

TABLE 7 - (Continued)

<u>Age</u>	<u>Deaths</u>	<u>Withdrawals with refund</u>	<u>Disability</u>
40	*00392	*0397	*0028
41	*00405	*0275	*0030
42	*00414	*0322	*0032
43	*00427	*0297	*0034
44	*00434	*0272	*0036
45	*00444	*0246	*0038
46	*00452	*0220	*0040
47	*00461	*0194	*0042
48	*00469	*0168	*0045
49	*00476	*0141	*0048
50	*00486	*0114	*0052
51	*00501	*0087	*0057
52	*00521	*0065	*0062
53	*00580	*0045	*0068
54	*00597	*0032	*0075
55	*00662	*0025	*0083
56	*00746	*0018	*0093
57	*00844	*0010	*0105
58	*00938	*0004	*0112
59	*01046	...	*0113

Employees Retirement System of the  
State of Rhode Island

TABLE 8

RAVES OF SEPARATION FROM SERVICE

TEACHER-MEMBERS - FEMALE

<u>Age</u>	<u>Deaths</u>	<u>Withdrawals with refund</u>	<u>Disability</u>
20	*00130	*0508	*0003
21	*00134	*0497	*0004
22	*00139	*0494	*0005
23	*00143	*0488	*0006
24	*00149	*0482	*0007
25	*00157	*0474	*0008
26	*00162	*0465	*0009
27	*00168	*0455	*0010
28	*00178	*0444	*0011
29	*00183	*0431	*0012
30	*00196	*0417	*0013
31	*00208	*0401	*0014
32	*00228	*0385	*0015
33	*00233	*0369	*0016
34	*00248	*0353	*0017
35	*00267	*0337	*0019
36	*00285	*0320	*0020
37	*00304	*0303	*0022
38	*00318	*0286	*0024
39	*00331	*0269	*0026

(Continued)

TABLE 8 - (Continued)

<u>Age</u>	<u>Deaths</u>	<u>Withdrawals with refund</u>	<u>Disability</u>
40	.00342	.0257	.0028
41	.00355	.0237	.0030
42	.00364	.0220	.0033
43	.00377	.0203	.0036
44	.00384	.0186	.0040
45	.00394	.0169	.0044
46	.00402	.0151	.0048
47	.00411	.0133	.0053
48	.00419	.0115	.0058
49	.00426	.0096	.0064
50	.00434	.0080	.0070
51	.00449	.0067	.0076
52	.00467	.0053	.0087
53	.00495	.0042	.0098
54	.00519	.0033	.0110
55	.00585	.0025	.0125
56	.00630	.0018	.0142
57	.00696	.0011	.0160
58	.00767	.0003	.0181
59	.00866	--	.0204

Employees Retirement System of the  
State of Rhode Island

TABLE 9

RATES OF SEPARATION AND DEATH  
AT AGE 60 AND OVER

STATE EMPLOYEES

<u>MALE</u>			<u>FEMALE</u>		
<u>Age</u>	<u>Rates of</u>		<u>Age</u>	<u>Rates of</u>	
	<u>Death</u>	<u>Retirement</u>		<u>Death</u>	<u>Retirement</u>
60	.01592	.0110	60	.01055	.0264
61	.01675	.0165	61	.01138	.0280
62	.01720	.0182	62	.01183	.0302
63	.01755	.0200	63	.01218	.0328
64	.01834	.0222	64	.01297	.0362
65	.01943	.0246	65	.01406	.0415
66	.02072	.0297	66	.01535	.0508
67	.02213	.0340	67	.01676	.0613
68	.02364	.0368	68	.01827	.0720
69	.02527	.0388	69	.01990	.0823
70	--	1.0000	70	--	1.0000

Employees Retirement System of the  
State of Rhode Island

TABLE 10

RATES OF SEPARATION AND DEATH  
AT AGE 60 AND OVER

TEACHER - MEMBERS

M A L E		F E M A L E	
Age	Rates of Death	Age	Rates of Death
	Retirement		Retirement
60	*01166	60	*00914
61	*01298	61	*01046
62	*01445	62	*01101
63	*01610	63	*01280
64	*01796	64	*01490
65	*02007	65	*01641
66	*02254	66	*01953
67	*02552	67	*02342
68	*02913	68	*02831
69	*03362	69	*02933
70	--	70	--
	1,00000		1,00000



Employees Retirement System of the  
State of Rhode Island

TABLE II.

DEDUCED SALARY SCALE BASED UPON AVERAGE  
ANNUAL SALARIES AT JUNE 30, 1953

Age	State Employees		Age	Male		Female	
	Male	Female		Male	Female	Male	Female
20	\$2,000.00	\$1,980.00	45	\$3,747.00	\$3,148.00		
21	2,054.00	2,052.00	46	3,774.00	3,161.00		
22	2,156.00	2,123.00	47	3,802.00	3,175.00		
23	2,233.00	2,195.00	48	3,831.00	3,190.00		
24	2,343.00	2,267.00	49	3,871.00	3,206.00		
25	2,454.00	2,374.00	50	3,912.00	3,223.00		
26	2,563.00	2,437.00	51	3,954.00	3,241.00		
27	2,695.00	2,499.00	52	3,997.00	3,260.00		
28	2,814.00	2,562.00	53	4,041.00	3,280.00		
29	2,860.00	2,608.00	54	4,086.00	3,301.00		
30	2,914.00	2,654.00	55	4,132.00	3,323.00		
31	2,970.00	2,702.00	56	4,179.00	3,347.00		
32	3,003.00	2,748.00	57	4,227.00	3,372.00		
33	3,075.00	2,795.00	58	4,276.00	3,398.00		
34	3,125.00	2,838.00	59	4,326.00	3,425.00		
35	3,163.00	2,882.00	60	4,377.00	3,453.00		
36	3,222.00	2,926.00					
37	3,284.00	2,970.00					
38	3,421.00	3,009.00					
39	3,587.00	3,054.00					
40	3,608.00	3,098.00					
41	3,641.00	3,106.00					
42	3,674.00	3,115.00					
43	3,696.00	3,125.00					
44	3,721.00	3,136.00					

Employees Retirement System of the  
State of Rhode Island

TABLE 12

DEDUCTED SALARY SCALE BASED UPON AVERAGE  
ANNUAL SALARIES AT JUNE 30, 1953

Teachers Members

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Age</u>	<u>Male</u>	<u>Female</u>
21	\$2,269.00	\$2,238.00	45	\$4,133.00	\$3,770.00
22	2,265.00	2,255.00	46	4,107.00	3,794.00
23	2,356.00	2,272.00	47	4,242.00	3,818.00
24	2,505.00	2,418.00	48	4,298.00	3,820.00
25	2,622.00	2,562.00	49	4,354.00	3,825.00
26	2,718.00	2,705.00	50	4,408.00	3,826.00
27	2,856.00	2,850.00	51	4,453.00	3,828.00
28	2,984.00	2,995.00	52	4,493.00	3,831.00
29	3,091.00	3,015.00	53	4,528.00	3,832.00
30	3,219.00	3,038.00	54	4,561.00	3,835.00
31	3,363.00	3,060.00	55	4,581.00	3,839.00
32	3,407.00	3,081.00	56	4,602.00	3,934.00
33	3,452.00	3,160.00	57	4,635.00	3,981.00
34	3,497.00	3,238.00	58	4,657.00	4,027.00
35	3,542.00	3,315.00	59	4,678.00	4,072.00
36	3,587.00	3,389.00	60	4,697.00	4,120.00
37	3,633.00	3,469.00			
38	3,680.00	3,549.00			
39	3,728.00	3,628.00			
40	3,877.00	3,651.00			
41	3,927.00	3,675.00			
42	3,977.00	3,699.00			
43	4,028.00	3,722.00			
44	4,080.00	3,746.00			