

REPORT OF THE ACTUARY
On An Actuarial Valuation of the System
as of June 30, 1972

An actuarial valuation of a retirement system is undertaken to establish the liabilities and reserve requirements for the accrued and prospective pension credits under the established benefit schedule. An actuarial balance sheet is prepared showing the accrued and prospective liabilities and the present and prospective assets available to meet these liabilities.

A calculation is made of the liabilities incurred for the several benefit obligations. The reserves required to meet these accrued liabilities for the lifetime of the members are determined. The factors of mortality, turnover in employment and interest earnings are basic in this procedure. Other factors are prominent in the actuarial process, including rates of salary and their progression until retirement of the members, disability expectancies and the ages at which members are expected to retire.

Rates reflecting these basic factors that were formulated in a previous survey and investigation of operating experience of the system were applied in this valuation. Because of the marked variance in basic characteristics between State employees and teacher-members, separate rates were applied. Because of the diverse physiological conditions and employment factors between male and female members, a further division in rates was made for the factor of sex. Some variations from these

established standards frequently occur in current operations. These are also considered by means of special adjustments of the results of the valuation.

BASIS OF VALUATION

The benefit and contribution provisions of the retirement plan forming the basis of the valuation are summarized in the appendix of this report. The several assumptions relative to the actuarial factors applied in this valuation are as follows:

1. Mortality expectancy: The 1951 Group Annuity Table (modified)
2. Interest rate: Compound interest at 5% per annum
3. Turnover factors: Assumed annual rates of withdrawal from all causes -

<u>Age</u>	<u>Rate per 1,000</u>
20	247
25	198
30	162
35	120
40	91
45	60
50	33
55	15
60 and over	Mortality only

4. Future salary increment: An annual increment of 4%
5. Average age at retirement: 62 years
6. Disability rates: Class (1) rates of disablement from the Society of Actuaries 1952 Inter-company study were used. It was assumed that 15% of all disablements would occur in line of duty.

7. Marital status: 85% of employees in service assumed to be married with the average age of the wives 4 years less than that of the employees. 75% of the employees retiring on pension were married
8. Administrative expense: None provided

MEMBERSHIP STATISTICS

Detailed statistics forming the basis of the valuation were compiled and tabulated. Statistical tables reflecting this data are presented in the appendix. A summary thereof is as follows:

<u>ACTIVE MEMBERS</u>	<u>State Employees</u>		<u>Teachers</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
Number	7,041	6,551	3,946	6,705
Percent of total	51.7%	48.3%	37.0%	63.0%
Annual salaries	\$59,102,154	\$42,529,092	\$38,323,552	\$62,953,24
Average salary	\$8,394	\$6,492	\$9,712	\$9,389
Average age	45.2	42.8	37.0	40.0
Average service	9.1	8.0	9.1	9.7

<u>RETIREMENTS</u>	<u>State Employees</u>		<u>Teachers</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
Number	1,363	1,045	366	1,708
Percent of total	56.8%	43.2%	17.7%	82.3%
Average age at June 30, 1972	71.3	76.7	70.4	71.8
Retirements during year	281	197	48	239
Average age at retirement	64.9	64.9	62.5	63.4
Terminations	67	37	10	37
Average age at death	74.2	74.7	77.0	78.4

RESULTS OF VALUATION

A test of financial stability and soundness of any retirement system is the extent to which the accrued liabilities for earned pension credits at the end of a fiscal period are covered by present assets. This assumes that the accruing pension credits are fully funded currently, and that the accrued pension liability is being systematically amortized.

Since this is not the case with the Employees' Retirement System which receives only a part of its total accruing cost requirements, the rate of funding or security ratio, as it is commonly referred to, is only 35.8%. This is the extent to which the accrued liabilities are covered by net present assets.

The law governing the system, however, prescribes a partial method of funding the employers' cost. Contributions by the employers are determined as the average annual requirements for benefits according to a 5-year projection of pension expenditures by the system. The rate per cent of contributions for the period of 5 years effective July 1, 1972 is 6.5% of payroll for State employees and 9.0% of payroll for teacher-members. The latter cost is shared equally by the State and the cities and towns. Partial funding results in a deferment of part of the currently incurred pension cost and an increase in the actuarial deficit. As a result, the unfunded accrued liability or actuarial deficit has been in an upward trend for a number of years and will in all probability continue to increase for an indeterminate period.

Even if full funding of currently accruing pension credits were provided, the unfunded accrued liability would continue to increase by interest alone on the unfunded liability at the rate of interest assumption in effect which is 5% per annum.

Actuarial reserve funding. The full cost of financing current service of the members of the system according to actuarial criteria reflecting the accrual principle, as a percentage of payroll, is as follows:

	<u>State Employees</u>	<u>Teacher Members</u>	<u>Composite</u>
Normal cost as a percentage of payroll	14.9%	18.0%	16.3%
Less, member contributions	<u>5.0</u>	<u>6.0</u>	<u>5.5</u>
Cost to the Employers	<u>9.9%</u>	<u>12.0%</u>	<u>10.8%</u>

VALUATION BALANCE SHEET

A Valuation Balance Sheet is presented in the following pages displaying the financial condition of the system at June 30, 1972. From a technical standpoint, a retirement system is considered to be in a sound financial condition when its present assets are equal to the difference between (a) the total of all accrued and prospective liabilities, and (b) the present value of future contributions to be received by the system according to the prescribed rates. A system attaining this status will have provided in full for all accrued pension credits in accordance with actuarial reserve requirements.

VALUATION BALANCE SHEET - JUNE 30, 1972
Statement of Assets, Liabilities and Reserves

A S S E T S

<u>NET PRESENT ASSETS:</u>		\$ 1,087,439.00
Cash		
Investments (Amortized book value for bonds - cost for stocks)	159,968,546.00	
	<u>1,839,409.00</u>	
Accrued interest receivable		\$162,895,394.00
	<u>33,656.00</u>	
Less, Accounts Payable		\$162,861,738.00

DEFERRED ASSETS:

Present value of future service credits on account of service subsequent to July 1, 1972		
State employees - Members	\$ 33,288,492.00	
State of Rhode Island	54,371,137.00	
Teacher-Members - Members	44,017,576.00	
State of Rhode Island	39,329,815.00	
Cities and Towns	<u>39,329,815.00</u>	210,336,835.00

UNFUNDED ACCRUED LIABILITY:

Due from employers for unfunded pension credits -		
State of Rhode Island	\$188,959,568.00	
Cities and Towns ^{1/}	<u>103,212,793.00</u>	292,172,361.00
TOTAL ASSETS		<u>\$665,370,934.00</u>

^{1/} The State of Rhode Island and the Cities and Towns share equally in the financing of teachers' pensions.

VALUATION BALANCE SHEET - JUNE 30, 1972
Statement of Assets, Liabilities and Reserves

LIABILITIES AND RESERVE REQUIREMENTS

FUTURE SERVICE LIABILITY:

State employees	\$ 91,304,366.00	
Teacher-members	<u>119,032,469.00</u>	\$210,336,835.00

RESERVE REQUIREMENTS:

RESERVE FOR MEMBER CONTRIBUTIONS -

<u>State Employees -</u>		
For service retirement and disability annuities	\$ 12,189,979.00	
For future refunds	<u>18,481,979.00</u>	30,671,958.00

Teacher-Members -

For service retirement and disability annuities	\$ 28,279,012.00	
For future refunds	<u>12,582,548.00</u>	40,861,560.00

RESERVE FOR TEACHERS' SURVIVOR BENEFITS - 4,836,506.00

RESERVE FOR EMPLOYER CONTRIBUTIONS -

For service retirement and disability annuities on active members -

<u>State Employees -</u>		
Total requirements	\$ 87,531,501.00	
Less, Employee contributions	<u>12,189,979.00</u>	75,341,522.00

Teacher-Members -

Total requirements	\$181,048,814.00	
Less, Employee contributions	<u>28,279,012.00</u>	152,769,802.00

RETIREMENT AND BENEFITS RESERVE -

State employees		48,189,262.00
Teacher-members		<u>102,363,489.00</u>

TOTAL LIABILITIES AND RESERVES \$665,370,934.00

The following explanation of the several items comprising the Valuation Balance Sheet is given to facilitate an understanding of their function and meaning.

Net Present Assets comprise the assets on hand as shown by the financial reports prepared by the Senior Accountant of the system as of June 30, 1972.

Deferred Assets consist of the obligations of the members and the employers for service to be rendered subsequent to June 30, 1972. They represent actuarially determined amounts, giving effect to the factors of mortality, interest, turnover and others that enter into the computation of liabilities and annuities and benefits that accrue on account of future service.

Unfunded Accrued Liability constitutes the amounts accrued and unpaid on account of service rendered prior to the balance sheet date. This is an accrued obligation of the State and the Cities and Towns to be discharged in future years by increased financial allocations to the system.

Future Service Liability is an offset to Deferred Assets and represents the present value of the proportionate pension credits to be earned by the members during future service extending from the balance sheet date to the assumed ages of retirement.

Reserve for Members' Contributions consists of the total of members' contribution credits at the balance sheet date. Part

of these credits is payable as a refund in future years to members withdrawing from service on account of resignation, dismissal or death. The remainder is to be applied to finance a portion of the annuities and benefits payable to members now in service who will ultimately qualify for retirement.

Reserve for Teachers' Survivor Benefits represents the accumulation of contributions by the teacher-members and the Cities and Towns towards the survivor benefit provision specifically applicable to these members.

Reserve for Employer Contributions represents the amounts that must be provided to finance the employers' portion of the accrued pension credits for those employees now in service who will ultimately qualify for retirement and disability pensions.

Retirement and Benefits Reserve constitutes the amount reserved to pay out during the future lifetime of the pensioners presently on the pension roll the pensions granted and in force at the balance sheet date.

CERTIFICATION

The accompanying Valuation Balance Sheet exhibits the assets, accrued liabilities and reserves of the system as of June 30, 1972. Present assets were taken from the financial statements submitted by the Senior Accountant of the system.

In our opinion, this Valuation Balance Sheet correctly presents the condition of the Employees' Retirement System of the State of Rhode Island at June 30, 1972 after giving effect to all accrued liabilities and actuarial reserve requirements for the several annuities and benefits under the applicable law in effect at such date.

A. A. Weinberg
Actuary

FINANCIAL STATEMENTS

1. Financial Balance Sheet as of June 30, 1972
2. Statement of Revenues and Expenditures for the Fiscal Year Ended June 30, 1972
3. Statement of Cash Receipts and Disbursements for the Fiscal Year Ended June 30, 1972
4. Comparative Statement of Investment Receipts and Disbursements, Fiscal Years Ended June 30, 1972 and June 30, 1971
5. Statement of Net Investment Earnings for the Fiscal Year Ended June 30, 1972

FINANCIAL BALANCE SHEET - JUNE 30, 1972

A S S E T S

		\$ 1,087,438.66
		1,839,409.34
Cash		
Accrued Interest Receivable	\$160,803,337.41	
Investments		
Less Unamortized Discounts and Premiums (Net)	<u>874,790.91</u>	
Net Investments		<u>159,968,546.50</u>
Total Assets		<u>\$162,895,394.53</u>

LIABILITIES AND RESERVES

Current Liabilities

Accounts Payable	\$ 3,145.63
Unclaimed Benefits	30,510.13

Members' Contribution Reserves

State Employees	\$30,671,958.92	
Teachers	38,492,715.80	
Teachers' Survivors	<u>2,368,845.58</u>	71,533,520.30

General Reserves

State Employees	\$58,225,882.53
Teachers	28,249,184.64
Teachers' Survivors	4,836,506.27
Certain State Employees	14,131.69
Certain Teachers	<u>2,513.34</u>

Total General Reserves 91,328,218.47

Total Liabilities and Reserves \$162,895,394.53

STATEMENT OF REVENUES AND EXPENDITURES
FOR THE FISCAL YEAR ENDED JUNE 30, 1972

REVENUES

Member Contributions -

State Employees	\$ 5,007,762.17	
Teachers	6,831,325.85	
Teachers' Survivors	428,452.16	
Death Benefit Premiums -		
Retired Legislators	\$ 1,935.00	
Retired Employees	<u>341.91</u>	<u>2,276.91</u>
		\$12,269,817.09

General Fund Appropriations -

State Employees	\$ 3,436,097.00	
State Employees a/c FF Costs	1,831,743.13	
Teachers	3,632,904.00	
Certain State Employees	21,630.00	
Certain Teachers	<u>1,680.00</u>	<u>8,924,054.13</u>

Municipal Contributions -

Teachers	\$ 4,221,968.46	
Teachers' Survivors	438,756.06	
Employees Trans.	<u>948,714.35</u>	<u>5,609,438.87</u>

Other Contributions -

Miscellaneous Refunds	\$ 11,566.38	
Unclaimed Benefits	9,040.47	
Miscellaneous Receipts	<u>106,884.29</u>	<u>127,491.14</u>

Investment Income:

Interest Earnings	\$ 8,201,101.16	
Loss on Sales	<u>28,673.62</u>	<u>8,172,427.54</u>

TOTAL REVENUES \$35,103,228.77

EXPENDITURES

Pensions and Death Benefits -

State Employees	\$5,223,349.96	
Legislators	216,033.46	
Teachers	10,516,802.45	
Teachers' Survivors	69,918.90	
Certain State Employees	12,465.00	
Certain Teachers	1,840.00	\$16,040,409.77

Death Benefits:

State Employees	\$ 577,478.30	
Legislators	6,000.00	
Teachers	191,832.95	775,311.25

Refunds of Contributions -

State Employees	\$ 976,945.13	
Teachers	919,114.13	
Teachers' Survivors	64,670.57	
Interest, Teachers' Survivors' Contribution Refunds	4,122.47	
To Municipalities a/c Teachers	47,612.41	
To Municipalities a/c Teachers' Survivors	2,269.90	2,014,734.61

Unclaimed Benefits 2,681.91

Miscellaneous Refunds 1,331.60

Transferred to Municipal 6,405.12

Investment Expense -

Postage & Insurance on Purchases 261.98

TOTAL EXPENDITURES

EXCESS OF REVENUE OVER EXPENDITURES

\$18,841,136.

\$16,262,092.

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

FISCAL YEAR ENDED JUNE 30, 1972

Cash Balance, July 1, 1971 \$ 742,178.27

Receipts -

Investments Sold and Matured	\$58,338,741.69	
Investment Earnings	7,684,341.22	
Discounts on Purchases	311,500.51	
Loss on Sales	(28,673.62)	\$66,305,909.80

Member Contributions:

State Employees	\$ 5,007,762.17	
Teachers	6,831,325.85	
Teachers' Survivors	428,452.16	
Ins. Benefit Prem. Retired Employees	341.91	
Ins. Benefit Prem. Retired Legislators	1,935.00	12,269,817.09

General Fund Contributions -

State Employees	\$ 3,436,097.00	
Teachers	3,632,904.00	
Certain State Employees	21,630.00	
Certain Teachers	1,680.00	
State Employees a/c Full Funded Costs	1,831,743.13	8,924,054.13

Municipal Contributions -

Teachers	\$ 4,221,968.46	
Teachers' Survivors	438,756.06	
Employees Transferred	948,714.35	5,609,438.87

Other Contributions -

Unclaimed Benefits	\$ 9,040.47	
Miscellaneous Receipts	11,566.38	
Int. Serv. Purch.	106,884.29	127,491.14

TOTAL RECEIPTS

\$93,236,711.03

TOTAL AVAILABLE

\$93,978,889.30

Statement of Cash Receipts and Disbursements - continued

Disbursements -

Investments Purchased	\$73,858,485.35	
Accrued Interest on Purchases	63,550.71	
Premiums on Purchases	128,278.31	
Postage & Insurance on Purchases	261.98	\$74,050,576.35

Pension Benefits - Death Benefits - Death Retirement Allowances -

State Employees	\$ 5,800,828.26	
Teachers	10,708,635.40	
Legislators	222,033.46	
Teachers' Survivors	69,918.90	
Certain State Employees	12,465.00	
Certain Teachers	1,840.00	16,815,721.02

Refunds of Contributions -

State Employees	\$ 976,945.13	
Teachers	919,114.13	
Teachers' Survivors	64,670.57	
Interest, Teachers' Survivors Contribution Refunds	4,122.47	
Municipalities a/c Teachers	47,612.41	
Municipalities a/c Teachers' Survivors	2,269.90	2,014,734.61
Unclaimed Benefits		2,681.91
Miscellaneous Refunds		1,331.60
Trans. to Municipal		6,405.12

TOTAL DISBURSEMENTS

CASH BALANCE, JUNE 30, 1972

\$92,891,450.6

\$ 1,087,438.6

COMPARATIVE STATEMENT OF INVESTMENT EARNINGS
RECEIPTS AND DISBURSEMENTS
FISCAL YEARS ENDED JUNE 30, 1972 AND JUNE 30, 1971

	<u>1971-1972</u>	<u>1970-1971</u>
<u>RECEIPTS:</u>		
Interest & Dividends	\$7,681,195.59	\$6,842,586.23
Discounts on Purchases	311,500.51	189,403.79
Gain on Sales		104,578.27
<u>Gross Receipts</u>	<u>\$7,992,696.10</u>	<u>\$7,136,568.29</u>
<u>DISBURSEMENTS:</u>		
Accrued Interest on Purchases	\$ 63,550.71	\$ 38,816.83
Premiums on Purchases	128,278.31	60,460.00
Postage and Insurance on Purchases	261.98	60.04
Capital Loss	28,673.62	
<u>Total Disbursements</u>	<u>\$ 220,764.62</u>	<u>\$ 99,336.87</u>
 NET INVESTMENT RECEIPTS FOR THE YEAR	 <u>\$7,771,931.48</u>	 <u>\$7,037,231.42</u>