

REPORT OF THE ACTUARY

There are presented herewith the results of an actuarial valuation of the assets and liabilities of the Employees' Retirement System of the State of Rhode Island as of June 30, 1959.

GENERAL SUMMARY

Membership has continued its upward trend both as to State employees and teachers. It is interesting to note that the number of male teacher members has again shown an increase as a proportion of the total number of teachers participating in the system. The proportion now is 29.6% of the total teacher membership as compared with 28% last year. A similar trend is in evidence in teachers' systems in other States.

Of special significance is the comparatively large increase in the number of retirements among State employees. The beneficiary roll increased 47% during the year compared with 6% last year and 8% in the case of the teachers.

Due largely to the amendments enacted during the year, effective as of July 1, 1959, a substantial improvement in the financial condition of the system occurred. Teachers' contributions were increased from 5% to 6% of salary. An upward change also occurred in the rate of contributions on the part of the

State and the cities and towns for financing teachers' pensions from 6% to 7% of salary, and an increase was made in the rate of contribution by the State on account of State employees from 4-1/2% to 5% of salaries. The following statement will illustrate the trend in the contribution credits of the members and the contingent reserves for the last three years:

| | J u n e 30th | | |
|------------------------------|----------------|----------------|----------------|
| | 1959 | 1958 | 1957 |
| Contribution credits: | | | |
| State employees | \$9,605,969.00 | \$8,932,463.00 | \$7,822,868.00 |
| Teachers | 8,440,336.00 | 7,005,794.00 | 5,923,327.00 |
| Contingent reserve: | | | |
| State employees | 12,384,368.00 | 10,245,060.00 | 8,782,643.00 |
| Teachers | 5,120,666.00 | 4,276,586.00 | 3,719,817.00 |

The retirement plan as presently constituted is well balanced. Its provisions compare most favorably with those in effect for other State government employees or teachers of other States. A large obligation has already been imposed on the State and the cities and towns under the present retirement plan and for social security coverage as a supplement to the plan. Further liberalizing changes may prove damaging to an effective pension policy consistent with reasonable standards and within the financial ability of the States and the cities and towns to meet the ultimate costs.

To facilitate a proper understanding and interpretation of the financial condition of the system on the part of the contributors, the Valuation Balance Sheet accompanying this report has been modified. Technical terms have been eliminated and the accounts have been reorganized to illustrate more clearly the obligations of the system and its true financial condition. The unfunded accrued liability has been separated as between the State of Rhode Island and the Cities and Towns so as to show the respective obligations of the respective units of government.

BASIS OF VALUATION

The benefit and contribution provisions forming the basis of this report are summarized in the appendix. The valuation of the reserves and liabilities was made according to the rates of mortality and separation established by our previous survey of the operating experience of the system completed as of June 30, 1958. The rate of interest assumed in this valuation was 3% per annum. This represents a conservative rate according to the investment experience of the system and the established investment authority.

STATISTICAL DATA

Statistics required for this report were compiled by the office staff under the direction of Joseph B. Lewis, Secretary,

and supplied to us in excellent form. Detailed tables reflecting these statistics are presented in the appendix. A summary of these statistics is as follows:

| | <u>State employees</u> | |
|-----------------------|------------------------|-----------------|
| | <u>Male</u> | <u>Female</u> |
| Number of members | 5,328 | 3,572 |
| Proportion of total | 59.9% | 40.1% |
| Annual Salaries | \$21,921,434.00 | \$12,298,519.00 |
| Average Salary | \$4,114.00 | \$3,443.00 |
| Average age | 45.1 | 43.0 |
| Average total service | 7.7 | 7.1 |

| | <u>Teacher members</u> | |
|-----------------------|------------------------|-----------------|
| | <u>Male</u> | <u>Female</u> |
| Number of members | 1,840 | 4,377 |
| Proportion of total | 29.6% | 70.4% |
| Annual Salaries | \$9,658,472.00 | \$22,530,813.00 |
| Average Salary | \$5,249.00 | \$5,148.00 |
| Average age | 40.1 | 44.7 |
| Average total service | 10.1 | 13.9 |

Members with Prior Service 1/

| | <u>State Employees</u> | |
|------------------------------|------------------------|----------------|
| | <u>Male</u> | <u>Female</u> |
| Number of members | 439 | 234 |
| Proportion of total | 65.2% | 34.8% |
| Annual Salaries | \$2,535,554.00 | \$1,093,049.00 |
| Average Salary | \$5,776.00 | \$4,671.00 |
| Average prior service (Yrs.) | 6.7 | 5.8 |

| | <u>Teacher Members</u> | |
|------------------------------|------------------------|-----------------|
| | <u>Male</u> | <u>Female</u> |
| Number of members | 669 | 2,009 |
| Proportion of total | 25.0% | 75.0% |
| Annual Salaries | \$4,302,364.00 | \$11,882,504.00 |
| Average Salary | \$6,431.00 | \$5,915.00 |
| Average prior service (Yrs.) | 12.8 | 17.6 |

1/ Service prior to July 1, 1936 in the case of State employees, and July 1, 1949 in the case of teachers.

ACTUARIAL VALUATION

An actuarial valuation of a retirement system is undertaken for the purpose of establishing the true financial condition of the system. The liabilities for the several benefit obligations to the participating members, both accrued and prospective, are

determined by the application of actuarial formulas and procedure. In the calculation of these liabilities, the principles used are similar to those that apply to life insurance practice. A determination is made of the reserves required to meet the obligations as they mature. The factors of mortality and interest are basic in such a determination.

The valuation of a retirement system involves **such** basic factors such as turnover in employment, ages at retirement, rates of salary at the time the benefits become payable and rates of disability. It is the function of the actuary to properly appraise and evaluate the effect of these factors in the operation of the system. With the use of certain techniques, rates reflecting these factors are formulated based generally upon past experience, and used in forecasting the course of future operations. A forecast of the future, therefore, is fundamental to a proper evaluation of the financial condition of a retirement system.

A survey of the mortality and turnover experience, completed as of June 30, 1958, provided rates of death and rates of turnover for use in future valuations. These rates, with appropriate modifications reflecting the operating experience for the past year, were used in measuring mortality among the active members and retirants, and the turnover experience among the members. Separate rates were used for State employees and teachers, with a further separation between male and female

individuals to give effect to certain physiological conditions and employment factors.

Earnings on investments have been in a steady upward trend. The established investment authority for the system and a broadening of the investment policy during recent years should result in average interest earnings over the long term above 3% per year under varying cyclical economic conditions. A 3% interest rate, therefore, was assumed in this valuation.

Any variations in future experience from the assumed standards will be adjusted by a revision of the basic factors. Since the financial condition of the system is reappraised each year through the annual actuarial valuation, future balance sheets will give effect to these revisions and changes. It must be considered, however, that because of the long-term character of pension obligations, a forecast of future trends must be based upon operating experience for an extended period of time. Short term fluctuations and transitory factors cannot be permitted to influence the basic assumptions or conclusions.

ACCRUED LIABILITY

The accrued liability consists of pension credits earned by the members in service, and those who have left service with vested rights, as of the date of valuation. The amount of this

liability is \$60,811,278.66. Of this amount, the members are obligated for \$8,632,088.71, and the State and Cities and Towns in the amount of \$52,179,189.95.

A matured liability exists on account of members who are on retirement. The amount of this liability, which includes present and prospective beneficiaries, is \$22,504,924.00.

The liability for future refunds to those members who may leave service before acquiring vested rights was established at \$9,414,217.00.

The sum of these three liability items, amounted to \$92,730,419.66, and constitutes the total accrued liability. To meet this liability, the system has accumulated assets totalling \$35,582,804.66. The difference between the total accrued liability and the total present assets is \$57,147,615.00 which represents the unfunded accrued liability.

FUTURE SERVICE LIABILITY

The liability for retirement annuities on account of service to be rendered by the members after June 30, 1959, to the dates when these annuities will probably mature, has been established at \$36,308,303.00. This is the present value at that date of such future service pension credits.

In the computation of this liability, assumptions were made as to the probable periods of future service, the credits to be

released by deaths and separations from service, future salary rates and the ages at which the credits may mature. These assumptions were based upon past experience, current operating factors and our estimate of probable future trends.

To meet the foregoing liability, the members will contribute to the system during their future service, assuming the present rates of contribution maintain and the foregoing factors prevail according to assumptions, the amount of \$12,569,995.00, leaving a remainder to be provided from employer contributions (the State and the Cities and Towns) of \$23,738,308.00. These constitute discounted amounts being the present value, as of June 30, 1959, of such future contributions for the assumed periods of service.

VALUATION BALANCE SHEET

A retirement system is considered to be in sound financial condition from the technical standpoint when it has assets equal to the difference between (1) the total of all accrued and prospective liabilities, and (2) the present value of future contributions to be received by the system. This is known as the actuarial reserve. The actuarial reserve may also be defined as the assets on hand in the system equal to all accrued liabilities at the balance sheet date.

The Valuation Balance Sheet showing the results of the valuation made as of August 30, 1959 is presented in the following pages.

Employees' Retirement System of the
State of Rhode Island

VALUATION BALANCE SHEET - JUNE 30, 1959

Statement of Assets, Liabilities and Reserves

A S S E T S

PRESENT ASSETS:

| | | |
|----------------------|---------------------|---------------|
| Cash | | \$ 556,980.44 |
| Investments | | |
| Bonds (at par value) | \$27,389,500.00 | |
| Stocks (at cost) | <u>7,634,902.13</u> | 35,024,402.13 |
| Other | | 1,422.09 |

DEFERRED ASSETS:

Future service pension credits on account of service subsequent to July 1, 1959 -

| | | |
|-----------------------|---------------------|---------------|
| State employees - | | |
| Members | \$ 6,236,908.00 | |
| State of Rhode Island | 11,290,133.00 | |
| Teachers - | | |
| Members | 7,599,704.00 | |
| State of Rhode Island | 5,590,779.00 | |
| Cities and Towns | <u>5,590,779.00</u> | 36,308,303.00 |

UNFUNDED ACCRUED LIABILITY -

Due from employers for unfunded accrued pension credits -

| | | |
|----------------------------------|----------------------|----------------------|
| State of Rhode Island | \$38,900,130.00 | |
| Cities and Towns (see foot-note) | <u>18,247,485.00</u> | <u>57,147,615.00</u> |

TOTAL ASSETS

\$129,038,722.66

Note: Under the law governing the system, the cities and towns of the State assume one-half of the cost of teachers' pensions.

Employees' Retirement System of the
State of Rhode Island

VALUATION BALANCE SHEET - JUNE 30, 1959
Statement of Assets, Liabilities and Reserves

CURRENT LIABILITIES:

None

RESERVE REQUIREMENTS:

RESERVE FOR MEMBER CONTRIBUTIONS -

State Employees -

For service retirement and disability annuities \$ 3,167,232.22
For future refunds 6,438,737.00

Teacher Members -

For service retirement and disability annuities \$ 5,464,856.49
For future refunds 2,975,480.00

\$ 9,605,969.22
8,440,336.49

RESERVE FOR EMPLOYER CONTRIBUTIONS -

For service retirement and disability annuities on active members -

State Employees

17,829,177.92

Teacher Members

34,350,011.88

RETIREMENT AND BENEFITS RESERVE -

Actuarial Value of Service retirement, disability and beneficiary annuities in force -

State Employees -

Service retirement \$ 5,467,537.00
Disability 350,930.00
Other 258,327.00

6,076,794.00

Teacher Members -

Service retirement \$15,594,437.00
Disability 833,693.00
Other --

16,428,130.00

FUTURE SERVICE LIABILITY

Present value of future service pension credits -

State employees

Teachers \$17,527,041.00
18,781,262.00

36,308,303.00


TOTAL LIABILITIES AND RESERVES

\$129,038,722.64

CERTIFICATION

The accompanying Valuation Balance Sheet exhibits all assets, accrued liabilities and reserves of the system as of June 30, 1959. Present assets embodied in this statement were taken from the report of the Bureau of Audits, Department of Administration, State of Rhode Island, dated October 30, 1959, on an examination of the financial reports of the system.

In our opinion, the accompanying Valuation Balance Sheet correctly presents the condition of the Employees' Retirement System of the State of Rhode Island at June 30, 1959, giving effect to all accrued liabilities and actuarial reserve requirements for the several annuities and benefits under the applicable law as the same was in effect at such date.


A. A. Weinberg
Actuary

February 24, 1960

FINANCIAL STATEMENTS

Reproduced from the Report on Examination of Financial Records of the Bureau of Audits, Department of Administration, State of Rhode Island, dated October 30, 1959

Employees' Retirement System of the
State of Rhode Island

FINANCIAL BALANCE SHEET - JUNE 30, 1959

A S S E T S

| | |
|----------------------|------------------------|
| Cash | \$ 556,980.44 |
| Due from other funds | 1,422.09 |
| Investments | <u>35,024,402.13</u> |
| <u>Total Assets</u> | <u>\$35,582,804.66</u> |

R E S E R V E S

| | |
|---------------------------------------|------------------------|
| Reserve for Special Pension Increases | \$ 31,463.81 |
| Annuity Savings Reserve: | |
| State Employees | 9,605,969.22 |
| Teachers | 8,440,336.49 |
| Contingent Reserve: | |
| State Employees | 12,384,368.16 |
| Teachers | <u>5,120,666.98</u> |
| <u>Total Reserves</u> | <u>\$35,582,804.66</u> |

Employees' Retirement System of the
State of Rhode Island

Statement of Cash Receipts and Disbursements
Fiscal Year Ended June 30, 1959

\$ 128,183.13

Cash Balance July 1, 1958

Receipts:

| | |
|----------------------------------|----------------|
| Members Contribution | \$1,625,459.63 |
| State Employees | 1,775,902.86 |
| Teachers | 1,605,000.00 |
| State Contribution | 938,850.00 |
| State Employees | 28,200.00 |
| Teachers | |
| Special Pension Increases | |
| Cities and Towns Contributions - | 1,028,989.80 |
| Teachers | 1,197,951.62 |
| Income on Investments | 39,713.51 |
| Discounts on Investments | 1,619,914.75 |
| Investments Matured or Sold | 13,584.60 |
| Premium on Investments | 869.10 |
| Refunds of Benefits | 4,045.78 |
| Transfer-Certain Employees Fund | |

Total Receipts

Total Available

9,878,481.65

\$10,006,664.78

Disbursements:

| | |
|------------------------------------|--------------|
| Refunds of Contribution | |
| State Employees | 442,751.12 |
| Teachers | 187,992.79 |
| Benefits Paid - State Employees | |
| Monthly Retirement Allowances | 532,514.75 |
| Ordinary Death Benefits | 166,804.73 |
| Death Retirement Allowances | 19,870.65 |
| Special Pension Increases | 20,562.89 |
| Benefits Paid - Teachers | |
| Monthly Retirement Allowances | 1,600,960.30 |
| Ordinary Death Benefits | 102,500.00 |
| Death Retirement Allowances | 19,911.90 |
| Purchase of Investments | 6,288,853.84 |
| Accrued Interest on Investments | 20,627.23 |
| Premiums on Investments | 42,475.17 |
| Commissions, Postage & Insurance - | |
| Investments | 2,436.88 |

Total Disbursements

Cash Balance June 30, 1959

9,448,262.25

\$ 558,402.53

INVESTMENTS - EMPLOYEES' RETIREMENT SYSTEM

June 30, 1959

| <u>Description</u> | <u>Rate</u> | <u>Maturities</u> | <u>Par Value (Bonds) or Cost (Stocks)</u> |
|---------------------------|-------------|-------------------|---|
| United States of America: | | | |
| Cert. of Indebtedness | 3-3/4% | 11/15/59 | \$ 50,000 |
| Cert. of Indebtedness | 3-3/4 | 2/15/60 | 180,000 |
| Cert. of Indebtedness | 4 | 5/15/60 | 50,000 |
| Treasury Bills | Discount | 4/15/60 | 150,000 |
| Treasury Notes | 3-1/2 | 11/15/59 | 150,000 |
| Savings Bonds, Series B | 2-3/4 | 4/ 1/80 | 3,450,000 |
| Savings Bonds, Series G | 2-1/2 | 9/ 1/59 | 100,000 |
| Savings Bonds, Series G | 2-1/2 | 7/ 1/60 | 750,000 |
| Savings Bonds, Series G | 2-1/2 | 12/ 1/61 | 100,000 |
| Savings Bonds, Series G | 2-1/2 | 2/ 1/62 | 100,000 |
| Savings Bonds, Series G | 2-1/2 | 10/ 1/62 | 1,000,000 |
| Savings Bonds, Series G | 2-1/2 | 1/ 1/64 | 100,000 |
| Treasury Bonds, Series K | 2.76 | 7/ 1/66 | 100,000 |
| Treasury Bonds | 2-1/2 | 11/15/61 | 130,000 |
| Treasury Bonds | 2-1/2 | 12/ 1/68-63 | 100,000 |
| Treasury Bonds | 2-1/2 | 12/15/68-63 | 2,750,000 |
| Treasury Bonds | 2-1/2 | 12/15/69-64 | 100,000 |
| Treasury Bonds | 2-1/2 | 3/15/70-65 | 195,000 |
| Treasury Bonds | 2-1/2 | 3/15/71-66 | 250,000 |
| Treasury Bonds | 2-1/2 | 6/15/72-67 | 2,550,000 |
| Treasury Bonds | 2-1/2 | 9/15/72-67 | 97,500 |
| Treasury Bonds | 2-1/2 | 12/15/72-67 | 700,000 |
| Treasury Bonds | 3-1/4 | 6/15/83-78 | 1,825,000 |

TOTAL UNITED STATES OF AMERICA

\$ 14,977,500

The Twelve Federal
Land Banks:

Consolidated Federal
Farm Loan

2-1/2 6/ 1/60

\$ 50,000

International Bank for
Reconstruction and

Development:

Bonds
Bonds

3-1/2 10/15/71
4-1/4 1/15/79

\$ 400,000
100,000

TOTAL INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

\$ 500,000

INVESTMENTS - EMPLOYEES' RETIREMENT SYSTEM - CONTINUED

| Description | Rate | Maturities | Par Value (Bonds) or Cost (Stocks) |
|---|--------|-------------|---------------------------------------|
| State of Rhode Island: Blackstone Valley Sewer District Loan of 1952: | | | |
| Series B | 2-1/2% | 5/ 1/86 | \$ 50,000 |
| Series C | 2-3/4 | 8/ 1/83 | 120,000 |
| Series D | 4 | 9/ 1/75 | 100,000 |
| Highway Improvement Loan of 1955: | | | |
| Series A | 3-1/4 | 3/ 1/84 | 50,000 |
| Series B | 3-1/4 | 3/ 1/85 | 100,000 |
| Penal and Charitable Institutions | 4 | 3/ 1/77 | 10,000 |
| State Office Building - Registered | 4 | 6/ 1/77 | 12,000 |
| Third Courthouse Loan | 4 | 3/20/81 | 22,000 |
| Washington Bridge Loan | 4 | 5/ 1/77 | 6,000 |
| | | | <u>\$470,000</u> |
| TOTAL STATE OF RHODE ISLAND | | | |
| Municipalities: | | | |
| City of Central Falls: | | | |
| Refunding | 2-3/4 | 6/ 1/66-67 | \$ 13,000 |
| Refunding | 2.90 | 6/ 1/73-74 | 7,000 |
| Refunding | 3.90 | 8/ 1/71 | 35,000 |
| School | 2-1/4 | 7/ 1/68 | <u>10,000</u> |
| | | | \$ 65,000 |
| City of Cranston: | | | |
| Construction and Equipment | 1-3/4 | 7/ 1/63 | \$ 10,000 |
| School, Series A | 2-1/2 | 6/ 1/76 | 45,000 |
| School, Series E | 2.70 | 2/15/78-79 | 68,000 |
| School, Series C | 2.90 | 11/15/76-78 | 70,000 |
| School, Series B | 3.60 | 7/ 1/69-76 | 65,000 |
| Sewerage, Series E | 1-3/4 | 10/ 1/80-81 | 5,000 |
| Sewerage, Series H | 1.80 | 3/ 1/76 | 10,000 |
| Sewerage, Series D | 2 | 6/ 1/78 | 4,000 |
| Sewerage, Series I | 2-1/2 | 6/ 1/76 | <u>15,000</u> |
| | | | 292,000 |
| Town of Cumberland: | | | |
| School | 3-1/2 | 5/15/77-79 | \$ 90,000 |
| School | 4.60 | 10/15/71-72 | 45,000 |
| Water Supply In- stallation | 1.90 | 1/ 1/76 | 3,000 |
| Water | 3-1/2 | 5/15/77-79 | <u>60,000</u> |
| | | | 198,000 |

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INVESTMENTS - EMPLOYEES' RETIREMENT SYSTEM - CONTINUED

| Description | Rate | Maturities | Par Value (Bonds) or Cost (Stocks) |
|---|---------------|-----------------------|---------------------------------------|
| City of East Providence: | | | |
| Elementary School | 3.75% | 2/ 1/78 | \$ 15,000 |
| School Building | 2.20 | 3/ 1/72 | 25,000 |
| School Building | 2-1/2 | 7/ 1/70 | 25,000 |
| School Building | 3-1/2 | 4/ 1/69 | 7,000 |
| Sewer Trunk Extension | 2-1/2 | 7/ 1/70-76 | 48,000 |
| Sewer | 2.70 | 2/ 1/67 | 95,000 |
| Sewer | 3-1/2 | 4/ 1/65-69 | 145,000 |
| Street and Drainage | 2.70 | 2/ 1/67 | 5,000 |
| Street and Drainage | 3.75 | 2/ 1/76-78 | 45,000 |
| | | | \$410,000 |
| Town of Glocester: | | | |
| School Construction and Extension | 2.70 | 8/ 1/67-69 | 30,000 |
| Town of Hopkinton: | | | |
| School Building and Equipment | 2-3/4 | 12/ 1/82-84 | 20,000 |
| Town of Jamestown: | | | |
| School Construction | 3 | 12/ 1/72-74 | 30,000 |
| Town of Johnston: | | | |
| Sanitary District Sewer School | 3-1/2 2.90 | 9/ 1/87 9/ 1/65-74 | \$ 50,000 <u>107,000</u> |
| | | | 157,000 |
| Town of Lincoln: | | | |
| Elementary School Build- ing and Equipment | 3-1/2 | 3/ 1/76 | \$ 30,000 |
| Junior High School Building and Equipment | 2.35 | 3/ 1/67 | <u>15,000</u> |
| | | | 45,000 |
| Town of Narragansett: | | | |
| Beach Development | 3 | 4/ 1/61-63 | \$ 11,000 |
| Beach Repair | 2.70 | 1/ 1/77-80 | 48,000 |
| School Construction | 3.70 | 5/ 1/82 | <u>34,000</u> |
| | | | 93,000 |
| City of Newport: | | | |
| Sewer and Anti- Pollution | 3.70 | 7/ 1/76 | \$ 15,000 |
| Water Works | 2-1/4 | 3/ 1/68-70 | <u>9,000</u> |
| | | | 24,000 |

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