

*Report
of the
Actuary*

MARTIN E. SEGAL COMPANY
INCORPORATED

607 BOYLSTON STREET • BOSTON, MA 02116 • (617) 262-0550

ATLANTA
CHICAGO
CLEVELAND
DALLAS
DENVER
HARTFORD
HOUSTON
LOS ANGELES
NEW ORLEANS
NEW YORK
PHOENIX
SAN FRANCISCO
WASHINGTON, D.C.
TORONTO

December 14, 1977

Retirement Board of the Employees'
Retirement System
State of Rhode Island
198 Dyer Street
Providence, Rhode Island 02903

Dear Members of the Board:

We are pleased to submit herewith our Actuarial Valuation of the Employee's Retirement System as of June 30, 1977.

Our report analyzes the actuarial status of the System, and projects the cost requirements for the Board to certify to the Legislature.

We received a great deal of help from State employees in obtaining the information which forms the basis of this report. Most important, Mr. Joseph G. Iannelli, Executive Director; Mr. John F. Sullivan, Assistant Director; and Mr. Carlo Mencucci, Senior Accountant, were available whenever needed to answer any questions and provide any information requested. Indeed, the material they provided on their own initiative anticipated many of our needs.

-2-

For convenience, this report is divided into the following sections:

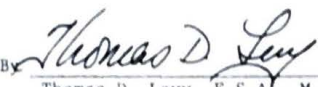
- I. SUMMARY
- II. EMPLOYEE DATA
- III. RETIREE DATA
- IV. RETIREMENT FUND
- V. ACTUARIAL ASSUMPTIONS AND METHODS
- VI. RESULTS OF VALUATION

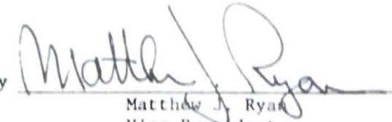
Following the report, we have attached our actuarial certificate detailing the cost factors, assumptions, and plan of benefits used for the valuation.

We will be pleased to meet with you to discuss this report at your convenience.

Sincerely yours,

MARTIN E. SEGAL COMPANY

By 
Thomas D. Levy, F.S.A., M.A.A.A.
Senior Vice President and Actuary

By 
Matthew J. Ryan
Vice President

TDL/kmj

I. SUMMARY

Benefit Provisions

The Employees' Retirement System of Rhode Island covers most State employees. Legislators and elected officials may become members on an optional basis. State college teachers may elect coverage under the T.I.A.A. program. State employees contribute 5 per cent of their annual earnings; Teachers contribute 6 per cent.

The System provides unreduced benefits of 1.7 per cent of earnings for the first ten years of service; 1.9 per cent for the next ten years; and 2.4 per cent per year of service over 20 years. Such benefits are available to members at least age 55 with 30 years of service or age 60 with 10 years of service, or after 35 years at any age. State correctional officers may retire at age 50 if they have 20 years of service, at 2 per cent for each year of service. Benefits are based on the average of the highest 3 consecutive years' earnings. After retirement, "cost-of-living increases" amounting to 3 per cent per year of the original award are provided, independent of actual changes in the Consumer Price Index.

The plan also provides non-service-connected disability and vested benefits after 7 and 10 years of service, respectively; service-connected disability pensions with no minimum service requirement; widow's benefits for service-connected death; and certain lump sum death benefits.

More detail can be found in the actuarial certificate following this report.

Employee Data

We received data on 15,700 active State Employees and 11,143 Teachers as of June 30, 1977, who were participating in the system. The average salary was \$11,200 for State Employees and \$14,800 for Teachers. On the average, the State Employees were age 42½ and had 7½ years of service; Teachers were age 38 with 9½ years of service.

Retiree Data

We received data on 3,688 State Employee pensioners and 160 beneficiaries as of June 30, 1977. The pensioners' average monthly benefit was \$259. There were 2,584 retired Teachers and 68 beneficiaries; the average benefit was \$513 a month for the pensioners. Of all the pensioners on the rolls, 9 per cent had retired in the year ended June 30, 1977.

Retirement Fund

As of June 30, 1977, the Fund had assets of \$280 million available as an offset to the actuarial liabilities for future benefits.

Actuarial Valuation

Our valuation was prepared as of June 30, 1977. Our calculations were based on what we believe are reasonable assumptions as to expected future experience. The assumptions are completely revised compared to those used by the prior actuary in his previous actuarial valuation. We used the "entry age normal cost" method of funding, which spreads the cost of each employee's pension as a level percentage of his earnings from date of hire to retirement.

The normal cost* for State Employees is \$10 million. This is 5.7 per cent of the payroll of participating State Employees. The normal cost for Teachers is \$8 million or 4.8 per cent of payroll.

For State Employees, the actuarial liability* (for benefits earned before July 1, 1977) is \$370 million of which \$129 million represents the liability to those already receiving pensions. The unfunded actuarial

*Please refer to the "Actuarial Assumptions and Methods" section of the report for definitions of these terms.

II. EMPLOYEE DATA

liability at the end of the year is \$221 million. For Teachers, the actuarial liability is \$453 million of which \$175 million is for those receiving pensions. The unfunded actuarial liability stands at \$337 million.

The value of the System's vested benefits is \$666 million. Thus the assets are short of this amount by \$400 million (excluding assets allocable to the Teachers Survivors' program).

Based on the normal cost plus 30 year amortization of the unfunded actuarial liability, the annual employer cost as of June 30, 1977 is \$27 million (15.1 per cent of covered payroll) for State Employees and \$33 million (20.1 per cent of covered payroll) for Teachers. These amounts are in addition to the required employee contributions.

In fiscal 1978-79, the State's statutory funding schedule calls for 72 per cent of the normal cost and 35 per cent of the interest on the unfunded actuarial liability to be contributed. This amounts to 6.5 per cent of payroll for State Employees and 7.6 per cent of payroll for Teachers. (Half of the cost for Teachers is paid for by the municipalities.) Given that these figures are substantially lower than the actuarial cost of the System, we have suggested a revised funding transition schedule that will allow the State to meet its funding obligation over a shorter period of time.

We received data on 15,700 State Employees and 11,143 Teachers participating in the System on June 30, 1977. The data included age, service, sex, and salary for each of them. The average salary of the participants was \$11,200 for State Employees and \$14,800 for Teachers. The data included 309 Correctional Officers and 112 Legislators. About 55 per cent of the Teachers -- 6,140 of them -- are not covered by Social Security and therefore are eligible for Teacher Survivor benefits.

Tables 1A and 1B give detailed age, service and average salary data on State Employees and Teachers, respectively. In preparing these tables, we assumed an annual salary of \$10,000 for the State Employees for whom earnings were missing. A \$15,000 annual salary was imputed for Teachers with unknown compensation.

Tables 2A and 2B summarize certain basic statistics on active State Employees and Teachers. Similar statistics prepared a year ago by the prior actuary were compiled on a different basis, making a comparison impossible. As we continue to receive data on an automated basis, we will be able to show year by year changes in this basic employee data.

Overall, the data was usable as received. However, the sex was missing on most State Employee records. We recommend that the Board continue to pursue its program of storing all basic information on participants on computer files.

Table 1A
 Number and Average Salaries of Employees in Active Service
 as of June 30, 1977
 By Age and By Years of Service

STATE EMPLOYEES

Age	Total	Years of Service								
		0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 and over	Unknown
Total	15,700 \$11,200	7,143 \$10,100	4,035 \$11,000	1,817 \$12,600	1,092 \$13,400	532 \$14,400	350 \$15,900	154 \$15,900	61 \$16,000	516 \$11,400
Under 20	249 \$ 7,900	249 \$ 7,900	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
20 - 24	1,638 8,700	1,518 8,700	118 \$ 8,700	-- --	-- --	-- --	-- --	-- --	-- --	2 \$ 8,900
25 - 29	2,114 10,600	1,520 10,500	548 10,900	41 \$10,200	-- --	-- --	-- --	-- --	-- --	5 11,500
30 - 34	1,526 12,300	840 11,600	511 13,300	157 12,600	16 \$11,600	-- --	-- --	-- --	-- --	2 13,700
35 - 39	1,134 12,300	526 11,100	323 12,200	188 14,800	76 14,500	15 \$12,500	-- --	-- --	-- --	6 12,500
40 - 44	1,290 12,000	546 10,600	349 11,400	182 14,100	132 15,300	55 14,500	16 \$14,400	-- --	-- --	10 13,300
45 - 49	1,639 11,800	604 10,200	476 10,700	217 13,200	164 15,100	90 15,000	60 14,300	12 \$13,900	-- --	16 20,500
50 - 54	2,099 11,800	634 9,900	640 10,500	328 12,500	196 13,200	127 16,200	87 17,200	41 14,700	10 \$14,000	36 19,700
55 - 59	2,047 11,800	479 9,900	562 10,300	362 11,600	271 12,500	131 13,900	103 16,700	61 16,100	20 14,200	58 21,300
60 - 64	1,304 11,700	191 9,800	401 10,000	272 11,800	186 12,000	90 12,900	70 14,900	32 17,500	23 17,000	39 21,400
65 and over	298 12,800	6 12,100	105 11,100	69 12,100	51 13,000	24 12,800	14 15,900	8 16,900	8 19,600	13 19,200
Unknown	362 6,900	30 8,200	2 9,400	1 20,300	-- --	-- --	-- --	-- --	-- --	329 6,700

RHODE ISLAND ERS

Table 1B
 Number and Average Salaries of Employees in Active Service
 as of June 30, 1977
 By Age and By Years of Service

TEACHERS

Age	Total	Years of Service								
		0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 and over	Unknown
Total	11,143 \$14,800	2,946 \$11,900	3,979 \$14,800	1,703 \$16,600	1,073 \$17,100	564 \$17,700	336 \$17,900	86 \$17,500	66 \$17,500	390 \$14,100
Under 25	384 \$ 9,900	377 \$ 9,900	-- --	-- --	-- --	-- --	-- --	-- --	-- --	7 \$11,300
25 - 29	2,729 12,400	1,576 11,500	1,144 \$13,500	4 \$13,700	-- --	-- --	-- --	-- --	-- --	5 13,300
30 - 34	2,341 14,900	421 12,900	1,521 15,100	389 16,400	1 \$16,600	-- --	-- --	-- --	-- --	9 15,200
35 - 39	1,349 15,900	238 13,200	430 15,800	504 16,700	175 17,400	1 \$16,600	-- --	-- --	-- --	1 15,000
40 - 44	1,029 16,300	135 13,300	278 15,600	219 16,600	322 17,500	75 17,200	-- --	-- --	-- --	-- --
45 - 49	1,022 16,500	100 14,000	272 15,400	194 16,500	196 17,200	195 18,300	65 \$17,900	-- --	-- --	-- --
50 - 54	862 16,900	69 14,600	176 15,700	171 16,700	146 16,800	130 18,400	137 18,000	31 \$18,000	1 \$16,600	1 13,200
55 - 59	698 16,700	22 15,400	115 15,600	146 16,400	149 16,800	106 16,800	82 18,200	40 17,100	38 17,500	-- --
60 - 64	272 16,600	3 14,900	31 15,800	59 16,300	66 16,300	44 16,600	36 17,400	10 18,500	22 17,600	1 16,100
65 and over	75 16,600	-- --	4 16,200	14 16,000	18 16,500	13 16,900	16 16,700	5 16,400	5 17,700	-- --
Unknown	382 14,100	5 13,000	8 14,000	3 17,000	-- --	-- --	-- --	-- --	-- --	366 14,100

RHODE ISLAND ERS

Table 2A
 Statistical Data on Active State Employees
 on June 30, 1977

	June 30, 1977
Number of covered employees	15,700
Total annual salary	\$176,569,900
Average annual salary	\$ 11,200
Average age	42½
Average years of service	7½
Number eligible for service retirement	991
Number vested but not eligible to retire	3,015

RHODE ISLAND ERS

Table 2B
 Statistical Data on Active Teachers
 on June 30, 1977

	June 30, 1977
Number of covered employees	11,143
Total annual salary	\$164,883,600
Average annual salary	\$ 14,800
Average age	38
Average years of service	9½
Number eligible for service retirement	418
Number vested but not eligible to retire	3,410

RHODE ISLAND ERS

III. RETIREE DATA

The data on retired members and beneficiaries included age, sex, monthly benefit, retirement date, option, and type of pension.

The following are significant statistics on the retired group:

	<u>State Employees</u>	<u>Teachers</u>
Pensioners:		
Number	3,688	2,584
Average age	70	72
Average monthly benefit	\$259	\$513
Beneficiaries:		
Number	160	68
Average age	77	74½
Average monthly benefit	\$199	\$335

Table 3A gives distributions of the 398 new State Employee (and beneficiary) pensions in the current year by type of pension and amount. Table 4A does the same for age at retirement. Tables 3B and 4B are similar for the 165 new Teacher pensions.

Tables 5A and 5B give distributions for all pensions in force at the end of the fiscal year by type and amount. Tables 6A and 6B do the same by age.

The data on retirees was reasonably good for retired employees. However, it was inadequate to be certain that beneficiaries were classified correctly. There was no data available with regard to Teachers Survivors' benefits as related to beneficiaries currently receiving Teachers Survivors' benefits.

The data on terminated employees with vested rights was not adequate to calculate a cost for them.

We recommend that this information be maintained by this system so that it can be incorporated in the next review.

Table 3A
Pensions Awarded in The Year Ended June 30, 1977
By Type and By Monthly Amount
STATE EMPLOYEES

Monthly Amount	Total	Type of pension				Beneficiary
		Service	Ordinary Disability	Accidental Disability	Legislator	
Total	398	340	42	9	3	4
Under \$50	6	4	--	2	--	--
\$ 50 - \$ 99	22	17	4	1	--	--
100 - 149	66	60	3	2	--	1
150 - 199	52	42	9	--	--	1
200 - 249	55	41	13	--	1	--
250 - 299	27	24	3	--	--	--
300 - 349	27	24	2	--	--	1
350 - 399	23	18	4	--	1	--
400 - 449	12	11	1	--	--	--
450 - 499	14	13	--	--	--	1
500 - 599	28	24	2	1	1	--
600 - 699	17	16	1	--	--	--
700 - 799	11	9	--	2	--	--
800 - 899	6	6	--	--	--	--
900 - 999	8	7	--	1	--	--
1,000 - 1,099	7	7	--	--	--	--
1,100 - 1,199	5	5	--	--	--	--
1,200 - 1,299	5	5	--	--	--	--
1,300 - 1,399	2	2	--	--	--	--
1,400 - 1,499	1	1	--	--	--	--
1,500 - 1,999	4	4	--	--	--	--

Table 3B

Pensions Awarded in the Year Ended June 30, 1977
By Type and By Monthly Amount

TEACHERS

Monthly Amount	Total	Type of pension			
		Service	Ordinary Disability	Accidental Disability	Beneficiary
Total	165	156	6	2	1
\$ 150 - \$ 199	1	1	--	--	--
200 - 249	3	3	--	--	--
250 - 299	5	4	1	--	--
300 - 349	9	9	--	--	--
350 - 399	4	3	1	--	--
400 - 449	11	10	1	--	--
450 - 499	4	4	--	--	--
500 - 599	16	12	3	--	1
600 - 699	14	14	--	--	--
700 - 799	25	25	--	--	--
800 - 899	18	18	--	--	--
900 - 999	32	30	--	2	--
1,000 - 1,099	12	12	--	--	--
1,100 - 1,199	2	2	--	--	--
1,200 - 1,299	3	3	--	--	--
1,300 - 1,399	2	2	--	--	--
1,500 - 1,999	3	3	--	--	--
2,000 - 2,499	1	1	--	--	--

RHODE ISLAND ERS

Table 4A

Pensions Awarded in the Year Ended June 30, 1977
By Type And By Age On Effective Date

STATE EMPLOYEES

Age on effective date	Total	Type of pension				
		Service	Ordinary Disability	Accidental Disability	Legislator	Beneficiary
Total	398	340	42	9	3	4
30 - 34	1	--	1	--	--	--
40 - 44	2	--	1	1	--	--
45 - 49	7	--	7	--	--	--
50	1	--	--	--	--	1
52	1	--	1	--	--	--
53	7	3	3	1	--	--
54	4	1	3	--	--	--
55	13	6	4	2	1	--
56	8	5	2	--	--	1
57	6	3	3	--	--	--
58	13	7	3	2	1	--
59	12	3	6	2	--	1
60	44	43	1	--	--	--
61	33	33	--	--	--	--
62	50	47	2	--	1	--
63	25	23	2	--	--	--
64	25	22	2	1	--	--
65	45	45	--	--	--	--
66	14	13	1	--	--	--
67	16	15	--	--	--	1
68	18	18	--	--	--	--
69	14	14	--	--	--	--
70 & over	39	39	--	--	--	--

RHODE ISLAND ERS

Table 4B

Pensions Awarded in the Year Ended June 30, 1977
By Type and By Age on Effective Date

TEACHERS

Age on effective date	Total	Type of pension			
		Service	Ordinary Disability	Accidental Disability	Beneficiary
Total	165	156	6	2	1
40 - 44	1	--	1	--	--
45 - 49	1	--	1	--	--
51	3	--	--	--	1
52		--	1	--	--
54		1	--	--	--
55	35	4	1	--	--
56		3	--	--	--
57		6	5	1	--
58		8	8	--	--
59	13	11	2	--	--
60	75	22	--	--	--
61		13	12	--	1
62		16	16	--	--
63		13	13	--	--
64	11	11	--	--	--
65	43	16	16	--	--
66		12	12	--	--
67		2	2	--	--
68		6	6	--	--
69		7	7	--	--
70	7	7	--	--	--

RHODE ISLAND ERS

Table 5A

Pensions in Force on June 30, 1977
By Type and By Monthly Amount

STATE EMPLOYEES

Monthly Amount	Total	Type of pension				
		Service	Ordinary Disability	Accidental Disability	Legislator	Beneficiary
Total	3,848	3,253	288	58	89	160
Under \$50	145	121	9	6	--	9
\$ 50 - \$ 99	751	681	31	4	--	35
100 - 149	763	628	98	8	1	28
150 - 199	501	406	63	5	--	27
200 - 249	370	291	31	3	19	26
250 - 299	262	212	19	5	19	7
300 - 349	200	159	11	6	13	11
350 - 399	151	128	12	6	2	3
400 - 449	129	107	4	2	13	3
450 - 499	91	79	--	3	5	4
500 - 599	165	135	8	5	17	--
600 - 699	80	74	2	1	--	3
700 - 799	71	66	--	2	--	3
800 - 899	54	53	--	1	--	--
900 - 999	37	35	--	1	--	1
1,000 - 1,099	25	25	--	--	--	--
1,100 - 1,199	17	17	--	--	--	--
1,200 - 1,299	18	18	--	--	--	--
1,300 - 1,399	5	5	--	--	--	--
1,400 - 1,499	4	4	--	--	--	--
1,500 - 1,999	8	8	--	--	--	--
2,000 - 2,499	1	1	--	--	--	--

RHODE ISLAND ERS

Table 5B

Pensions in Force on June 30, 1977
By Type and By Monthly Amount

TEACHERS

Monthly amount	Total	Type of pension			
		Service	Ordinary Disability	Accidental Disability	Beneficiary
Total	2,652	2,510	67	7	68
Under \$50	3	3	--	--	--
\$50 - \$99	20	15	--	--	5
100 - 149	62	52	2	--	8
150 - 199	163	138	15	--	10
200 - 249	170	147	13	1	9
250 - 299	204	187	12	--	5
300 - 349	236	226	7	--	3
350 - 399	228	218	4	--	6
400 - 449	223	213	5	--	5
450 - 499	162	158	2	--	2
500 - 599	270	260	5	1	4
600 - 699	280	273	1	--	6
700 - 799	260	254	1	1	4
800 - 899	152	149	--	2	1
900 - 999	115	113	--	2	--
1,000 - 1,099	52	52	--	--	--
1,100 - 1,199	23	23	--	--	--
1,200 - 1,299	14	14	--	--	--
1,300 - 1,399	7	7	--	--	--
1,400 - 1,499	2	2	--	--	--
1,500 - 1,999	5	5	--	--	--
2,000 - 2,499	1	1	--	--	--

RHODE ISLAND ERS

Table 6A

Pensions in Force on June 30, 1977
By Type and By Age

STATE EMPLOYEES

Age on June 30, 1977	Total	Type of pension			
		Service	Ordinary Disability	Accidental Disability	Beneficiary
Total	3,848	3,253	288	58	89
25 - 29	2	--	--	--	--
30 - 34	4	--	4	--	2
35 - 39	2	--	1	1	--
40 - 44	4	--	2	2	--
45 - 49	25	--	20	4	1
50 - 54	60	11	36	8	1
55 - 59	146	56	65	13	7
60 - 64	627	526	73	8	19
65 - 69	1,102	1,000	57	18	12
70 - 74	942	881	21	3	13
75 - 79	541	478	7	1	16
80 - 84	261	201	--	--	15
85 - 89	95	74	--	--	4
90 - 94	24	17	1	--	1
95 - 99	10	7	1	--	--
100 - 104	1	--	--	--	--
105 and over	2	2	--	--	--

RHODE ISLAND ERS

Table 6B
Pensions Awarded in the Year Ended June 30, 1977
By Type and By Age
TEACHERS

Age on June 30, 1977	Total	Type of pension			Beneficiary
		Service	Ordinary Disability	Accidental Disability	
Total	2,652	2,510	67	7	68
40 - 44	1	--	1	--	--
45 - 49	6	--	6	--	--
50 - 54	12	--	7	--	5
55 - 59	73	58	9	5	1
60 - 64	345	327	14	2	2
65 - 69	714	696	12	--	6
70 - 74	718	693	7	--	18
75 - 79	376	353	5	--	18
80 - 84	253	237	6	--	10
85 - 89	116	111	--	--	5
90 - 94	34	31	--	--	3
95 - 99	4	4	--	--	--

RHODE ISLAND ERS

IV. RETIREMENT FUND

The State maintains the Employees' Retirement Fund. The Retirement Board provided us with financial statements as of June 30, 1977.

The Fund receives all member and employer contributions. The assets are invested by the State Investment Commission, with the income being added to the Fund and available for reinvestment.

Payments out of the Fund are primarily for refunds of employee contributions, lump sum death benefits, and pension payments. Contribution refunds occur when an employee terminates employment and elects to take a refund, or when he dies after retirement without having received payments from the Fund equal to his total contributions.

Table 7 gives a summary of income and expenditures for the year ended June 30, 1977.

At June 30, 1977, assets totalled just under \$280 million. Table 8 gives a breakdown of the assets. About 76 per cent of the fund was invested in fixed income securities such as bonds and notes.

The financial statements indicate that 53 per cent of the assets relate to State Employees, 42 per cent are for Teachers, and 5 per cent relate to Teachers Survivors' benefits. There is also a small unallocated reserve for unclaimed benefits. Table 9 shows the allocation of assets in detail.

Table 7
Summary Statement of Income and Expenses
for Year Ended June 30, 1977

Employer contributions	\$29,375,698	
Member contributions	<u>19,006,191</u>	
Total contributions	\$48,381,890	
Less: Administration expenses	<u>162</u>	\$48,381,727
Net contribution income		151,807
Net miscellaneous items		
Investment income:		
Dividends	\$ 4,017,610	
Interest	13,220,010	
Capital gains and losses	<u>188,843</u>	
Net investment income		<u>17,426,464</u>
Total income available for benefit payments		\$65,959,998
Benefit payments:		
Pension benefits	\$30,179,882	
Death benefits	1,009,086	
Contribution refunds	<u>2,512,788</u>	
Total benefit payments		<u>33,701,755</u>
Excess of income over expenses		<u>\$32,258,243</u>

Note: Detail figures may not add to totals due to rounding.

RHODE ISLAND ERS

Table 8
Assets as of June 30, 1977

Cash		\$ 1,193,205
Accrued interest receivable		3,632,935
Investments		
Government bonds	\$ 59,172,081	
Corporate bonds	121,932,600	
Common and preferred stocks	62,077,811	
Certificates of deposit	5,100,000	
Short-term notes	19,555,263	
Repurchase agreements	8,000,000	
(Less) Unamortized premiums and discounts	<u>(761,278)</u>	<u>275,076,476</u>
Total assets		<u>\$279,902,616</u>

Note: Detail figures may not add to totals due to rounding.

RHODE ISLAND ERS

Table 9
Allocation of Assets by Plan
as of June 30, 1977

State Employees:		
Employer reserves	\$100,890,805	
Member reserves	<u>48,695,456</u>	
Total State Employees reserves		\$149,586,261
Teachers:		
Employer reserves	\$ 49,403,817	
Member reserves	<u>66,899,231</u>	
Total Teacher reserves		116,303,048
Teachers Survivors:		
Employer reserves	\$ 9,722,545	
Member reserves	<u>4,219,680</u>	
Total Teachers Survivors reserves		13,942,225
Unallocated:		
Unclaimed benefit reserve		<u>71,081</u>
Total assets		<u>\$279,902,616</u>

Note: Detail figures may not add to totals due to rounding.

RHODE ISLAND ERS

V. ACTUARIAL ASSUMPTIONS AND METHODS

The actual cost of a pension plan consists of the benefit payments and administrative expenses less any investment earnings. An actuarial cost method aims to budget this cost so as to establish a reasonable relationship between employer pension contributions and the employee services that give rise to the pension obligation. The result is an employer contribution which anticipates future costs. A fund accumulates which earns investment income, thus reducing the ultimate cost.

Calculating the appropriate contribution requires that projections, and therefore assumptions, be made as to future experience. Some items, such as mortality rates, can be predicted fairly accurately. Others, such as future salary increases, are, of course, subject to considerable variation. It will be useful to identify the assumptions used, particularly since broad questions of fiscal policy are implicit in certain of the assumptions.

It should be noted that our assumptions have been completely revised from those used by the prior actuary as of June 30, 1976. The most important change is the explicit reflection of continuing inflation at a 3 per cent annual rate.

Mortality Rates

We assumed that mortality rates would conform with the 1971 Group Annuity Mortality Table. This is the most recent published table of pension plan mortality, and we believe it will be a reasonable basis for experience under the System. It is one of the tables in general use in valuing pension plans in the United States. Table 10 gives some life expectancies after retirement.

Salary Projections

The System provides benefits that are based on the three highest consecutive years' salary for each employee. To assume that each employee's salary will be the same in the three years before retirement as it is today would seriously understate the System's cost. Accordingly, we use

a salary projection to anticipate future increases in earnings. Additionally, it is appropriate to compute pension normal costs which are level as a percentage of payroll rather than level as a dollar amount, and a salary projection is also used for this purpose. If the cost were calculated as a level dollar amount for an individual, the cost might be a high per cent of his pay when he was young and a lower per cent of his higher salary at a later age. By use of a salary projection, the contribution for an individual, all other things remaining the same, tends to stay at the same percentage over the years.

How to project future salaries is a major policy question. To what extent should one seek to anticipate, through present contributions, the full impact on pension costs of future salary changes?

For purposes of our cost determination, we have made a moderate allowance for general salary increases in the future. We also reflect salary increases as the result of longevity and promotions. The scale has relatively greater increases at the younger ages to correspond with the State's salary schedules. The salary scale factors are:

<u>Age</u>	<u>Present Salary as a % of Age 65 Salary</u>	<u>Annual Increases (Rate %)</u>
20	17.45	4.84
25	22.07	4.75
30	27.76	4.59
35	34.62	4.39
40	42.68	4.08
45	51.76	3.72
50	61.77	3.45
55	72.98	3.33
60	86.08	3.16

As will appear, the problem of salary projection has a parallel in the question of choosing an assumption as to future investment yield and the two are somewhat interrelated.

Termination Rates

In any employee group, many employees will terminate and receive less than full benefits. Employees terminating with less than ten years of active service, for example, receive only a refund of their contributions. The termination assumption anticipates the release of State and Town funds that may have been accumulated for such people, thus resulting in a reduced ongoing cost. As no termination data was available, we are using rates which are similar to those used by the prior actuary.

We assumed that terminations each year from all causes except retirement would be as follows:

State Employees (Rate %)

<u>Age</u>	<u>Death*</u>	<u>Disability</u>	<u>Withdrawal</u>	<u>Total*</u>
20	.05	.06	21.20	21.31
25	.06	.09	15.80	15.95
30	.08	.11	11.60	11.79
35	.11	.15	8.40	8.66
40	.16	.22	6.20	6.58
45	.29	.36	4.20	4.85
50	.53	.61	--	1.13
55	.85	1.01	--	1.86
60	1.31	--	--	1.31

15% of the above disability rates are service-connected.

Teachers (Rate %)

<u>Age</u>	<u>Death*</u>	<u>Disability</u>	<u>Withdrawal</u>	<u>Total*</u>
20	.05	.06	12.39	12.50
25	.06	.09	9.70	9.85
30	.08	.11	7.50	7.69
35	.11	.15	5.66	5.92
40	.16	.22	4.14	4.52
45	.29	.36	2.75	3.41
50	.53	.61	--	1.13
55	.85	1.01	--	1.86
60	1.31	--	--	1.31

15% of the above disability rates are service-connected.

*Rates shown are for men; rates for women are slightly lower

Note: Detail figures may not add to totals shown due to rounding.

Retirement Ages

The System provides unreduced benefits as early as age 55 for general employees and 50 for State Correctional Officers. In the absence of experience data, we have assumed State Employees will retire at age 64, or completion of 10 years of service if later. Teacher retirements are assumed to occur when the teacher is both age 63 and has 10 years of service. In any case where the employee already meets these assumed conditions of age and service, it is projected that he or she will retire immediately. These are the same assumptions used by the prior actuary.

Post-Retirement Increases

Cost-of-living increases are regularly provided to pensioners. Our calculation assumed 3 per cent annual benefit increases as provided by Statute. It should be noted that cost-of-living increases are based on the original pension award; they are not "compounded" from year to year.

Investment Return

Investment return has a major effect on the ultimate cost of a retirement system. In general, if a system is actuarially funded (so that it has a substantial reserve which is earning an investment yield), a yield of 6 per cent - in contrast to a 5 per cent yield - will reduce costs by 16-20 per cent.

An assumption must be made concerning future yields. It must be a rate that will be valid for the long-run, that is, not only for money invested today or next year, but also for money invested 10 and 20 years from now.

We selected an investment return assumption of 6 1/2 per cent per year for our calculation. This assumption takes account of probable

moderate long-term inflation but is not tied directly to the higher rates currently available.

Funding Method

We have used the "entry age normal cost method of funding." This method spreads the cost of the benefits to be provided to an individual as a level percentage of his pay from his date of employment to his assumed date of retirement. The normal cost for the entire system is equal to the sum of the normal costs for all participants. In a rough sense, it can be visualized as the cost of benefits earned during the current year.

The actuarial liability represents the amount by which the future normal costs fall short of meeting the cost of future benefit payments. It can also be viewed, roughly, as the value of benefits accrued for service prior to the valuation date.

Overall Actuarial Basis

We believe that our assumptions, taken as a whole, are reasonable. To the extent that actual experience is better or worse than assumed, gains or losses will develop, with appropriate decreases or increases in future costs.

Missing Data

It was also necessary to make certain "non-actuarial" assumptions where data was missing or incomplete. In all cases, we assumed such individuals had the same characteristics as other participants, taking into account the known characteristics (e.g. male members age 37 with unknown service were assumed to have the same service distribution as male members age 37 with known service).

Table 10
Expected Number of Years of Life
Remaining at Specified Ages

Age	Male	Female
		28.0
55	22.7	27.1
56	21.9	26.2
57	21.1	25.3
58	20.3	24.4
59	19.5	
	18.8	23.5
60	18.0	22.6
61	17.3	21.8
62	16.5	20.9
63	15.8	20.1
64		
	15.1	19.2
65	14.4	18.4
66	13.8	17.6
67	13.1	16.8
68	12.5	16.0
69		
	11.9	15.3
70	11.3	14.5
71	10.8	13.8
72	10.3	13.1
73	9.7	12.4
74		
	9.2	11.7
75		

1971 Group Annuity Mortality Table.

VI. RESULTS OF VALUATION

State Employees

The costs for State Employees as of June 30, 1977, developed as follows:

Item	Amount	% of Payroll
(1) Participating payroll	\$176,569,900	--
(2) Employer normal cost	10,020,000	5.7%
(3) Unfunded actuarial liability	220,582,400	--
(4) Amortization of unfunded actuarial liability --		
(a) Interest	13,462,800	7.6
(b) Principal (30 year amortization)	2,398,400	1.4
(c) Total (30 year funding)	15,861,200	9.0
(5) Total annual cost if paid July 1, 1977 --		
(a) Interest only = (2) + (4a)	23,482,800	13.3
(b) 30 year funding = (2) + (4c)	25,881,200	14.7
(6) Total annual cost if paid monthly = (5) plus ½ year interest --		
(a) Interest only	24,246,000	13.7
(b) 30 year funding	26,722,300	15.1

The calculations as completed assume that the employer contribution will be paid into the retirement fund at the beginning of each year, and will start to earn interest from that date. In fact, the money is deposited monthly. Thus about half a year's interest is lost, and the contribution must be increased to reflect this. Line 6, above, includes this adjustment.

The funding statute calls for the State to contribute 72 per cent of the normal cost plus 35 per cent of the interest on the unfunded actuarial liability for the 1978-79 fiscal year, and also calls for an increase in the employee contribution rate of 0.5 per cent of pay. Based on this requirement, the 1978-79 employer contribution for State Employees should be 6.5 per cent of payroll.

The "full cost" of the System's benefits (line 6b) is 15.1 per cent of payroll. At the end of this Section we comment on the present funding statute, and we recommend that it be revised to better reflect the actual cost of the System.

Teachers

The costs for Teachers as of June 30, 1977, developed as follows:

Item	Amount	% of Payroll
(1) Participating payroll	\$164,883,600	--
(2) Employer normal cost	7,933,000	4.8%
(3) Unfunded actuarial liability	336,659,600	--
(4) Amortization of unfunded actuarial liability --		
(a) Interest	20,547,300	12.5
(b) Principal (30 year amortization)	3,660,600	2.2
(c) Total (30 year funding)	24,207,900	14.7
(5) Total annual cost if paid July 1, 1977 -		
(a) Interest only = (2) + (4a)	28,480,300	17.3
(b) 30 year funding = (2) + (4c)	32,140,900	19.5
(6) Total annual cost if paid January, 1978		
= (5) plus 1/2 year interest --		
(a) Interest only	29,405,900	17.8
(b) 30 year funding	33,185,500	20.1

The calculations as completed assume that the employer contribution will be paid into the retirement fund at the beginning of each year, and will start to earn interest from that date. In fact, the money is deposited in January. Thus about half a year's interest is lost, and the contribution must be increased to reflect this. Line 6, above, includes this adjustment.

Applying the funding statute to the Teachers' costs and adjusting for the change in employee contribution rate gives a contribution requirement for fiscal 1978-79 of 7.6 per cent. Half of this (3.8%) is payable by the State and half by the municipalities.

The full cost is 20.1 per cent of payroll. As with the State Employees, we believe that every effort should be made to increase the Employer's share of the cost of the System as quickly as possible.

Teachers Survivors

Because we do not have data on dependents of teachers, it is difficult to do a detailed analysis of the Teacher Survivor program. However, we have attempted to estimate the actuarial position based on "high cost" assumptions. For example, we assumed 25 per cent of teachers would be married at death in active service, 10 per cent would be married but childless, and 65 per cent would be married with children (two children, one born when the wife was age 23 and the other at age 32). On this rough basis, the assets appear to be sufficient to fully cover the actuarial liabilities. The normal cost is estimated to be between \$110 and \$125 per person -- well within the \$192 combined annual employer - employee contribution (each pays 1 per cent of the first \$9,600 of salary).

Based on this analysis, we believe the present contribution is adequate to support the plan of benefits.

Value of Vested Benefits

In private pension plans, it is customary for the actuary to provide the "value of vested benefits". This figure is used by accountants in preparing financial statements, both as a disclosure item and as a factor in determining the pension expense charge, in accordance with Opinion No. 8 of the Accounting Principles Board of the American Institute of Certified Public Accountants, "Accounting for the Cost of Pension Plans". While we recognize that the State is not covered by this Opinion, a brief discussion of this subject may be helpful.

The "value of vested benefits" represents the single premium value under the plan's investment income and mortality assumptions of all benefits to present and former employees which do not have future employment by the employee as a required condition for their receipt. Thus it includes the present value of an immediate or deferred pension for all

pensioners, beneficiaries, vested former employees, and active participants with at least ten years of service. For active employees with less than ten years of service, only the accumulated employee contributions are included, since that is all such employees would receive if they had no further employment.

For the Employee's Retirement System, the value of vested benefits is as follows:

	<u>State Employees</u>	<u>Teachers</u>
Active members	\$181,740,500	\$179,579,500
Retired members	<u>129,359,200</u>	<u>175,451,300</u>
Total value of vested benefits	\$311,099,700	\$355,030,800
Assets	<u>149,586,300</u>	<u>116,303,000</u>
Unfunded value of vested benefits	<u>\$161,513,400</u>	<u>\$238,727,800</u>

Overall Status of System

The costs reported here differ substantially from those reported by the prior actuary. To a large extent, this reflects changes in actuarial assumptions. We believe that the quality of the data is better than has been available in the past, and this may also affect the results.

Under the present funding law, the State and the Teacher Employers' will not begin to fully pay the normal cost and the amortization payment until the fiscal year beginning July 1, 1985. Thus, for fiscal 1978-79, as reported earlier, the employer cost is 72 per cent of the normal cost and 35 per cent of the interest payment on the unfunded liability. As you will see, the percentage totals in the schedule increase each year:

<u>Fiscal year beginning on July 1</u>	<u>(1) Current service cost</u>	<u>(2) Interest on unfunded liability</u>
1977	68%	25%
1978	72%	35%
1979	77%	45%
1980	81%	55%
1981	86%	65%
1982	91%	75%
1983	95%	85%
1984	100% and thereafter	95%
1985		100% and thereafter

Given that the application of this formula produces an annual cost requirement that is substantially lower than the actual cost, and is lower than last year's contribution, we are recommending a revised transition formula that comes closer to meeting the actual cost, both in terms of increasing the transition percentages and reducing the transition period. This proposed formula would require that the normal cost plus an increasing percentage of the actuarial liability payment be contributed each year. Here is the proposed formula.

<u>Fiscal year beginning July 1</u>	<u>Normal cost plus x percent of 30 year amortization of unfunded actuarial liability</u>
1978	60%
1979	70
1980	80
1981	90
1982	100

Thus, for the fiscal year beginning July 1, 1978, the figures that we reported earlier would change as follows:

	<u>State</u>	<u>Teachers</u>
Actual Cost	15.10%	20.10%
Present formula	6.50	7.60
Proposed formula	10.90	13.60
Last year	8.56	12.20

As part of this proposed change we would also recommend that there be a minimum increase each year of one per cent of payroll over the prior year's rate. This would prevent any reduction in the annual appropriation in the event of changes in assumptions or data which might lower the annual cost. Of course, the employer contribution would be limited to the full actuarial cost.

MARTIN E. SEGAL COMPANY
INCORPORATED

607 BOYLSTON STREET • BOSTON, MASS. 02116 • (617) 262-0550

ATLANTA
CHICAGO
CLEVELAND
DALLAS
DENVER
HARTFORD
HOUSTON
LOS ANGELES
NEW ORLEANS
NEW YORK
PHOENIX
SAN FRANCISCO
WASHINGTON, D. C.
TORONTO

December 14, 1977

EMPLOYEES' RETIREMENT SYSTEM OF THE STATE OF RHODE ISLAND

CERTIFICATE OF ACTUARIAL VALUATION

This is to certify that we have prepared an actuarial valuation of the plan as of June 30, 1977.

The certificate contains the following attached exhibits:

EXHIBIT I - Actuarial Cost for Year Beginning July 1, 1977

A. State Employees

B. Teachers

EXHIBIT II - Actuarial Assumptions and Funding Method

EXHIBIT III - Summary of Plan Provisions

To the best of my knowledge, the information supplied in this actuarial valuation is complete and accurate (except as noted in Exhibit I) and in my opinion the assumptions used in the aggregate (a) are reasonably related to the experience of the plan and to reasonable expectations and (b) represent my best estimate of anticipated experience under the plan.

MARTIN E. SEGAL COMPANY



By: Thomas D. Levy, F.S.A., M.A.A.A.
Senior Vice President and Actuary

EXHIBIT I

ACTUARIAL COST FOR YEAR BEGINNING JULY 1, 1977

A. STATE EMPLOYEES

The valuation was made with respect to the following data supplied to us by the Retirement Board:

- a. 15,700 active participants (including 4,006 fully vested with total annual salaries of \$176,569,900)
- b. 3,848 pensioners (including 160 beneficiaries of deceased pensioners and active employees)

The cost factors as of the valuation date are as follows:

1. Total normal cost	\$ 18,858,300
2. Projected employee contributions	8,838,300
3. Employer normal cost	10,020,000
4. Actuarial liability - total	370,168,700
Active employees	\$240,809,500
Pensioners (including beneficiaries of deceased pensioners and active employees)	129,359,200
5. Assets	149,586,300
6. Unfunded actuarial liability	220,582,400

Liability for accrued vested benefits: \$311,099,700.

Note: Included are 549 active employees unknown as to age, service, or both. Data on the sex of active employees was generally missing. Status of beneficiaries was unclear. No data was provided on terminated vested employees, if any.

EXHIBIT I

ACTUARIAL COST FOR YEAR BEGINNING JULY 1, 1977

B. TEACHERS

The valuation was made with respect to the following data supplied to us by the Retirement Board:

- a. 11,143 active participants (including 3,828 fully vested with total annual salaries of \$164,883,600)
- b. 2,652 pensioners (including 68 beneficiaries of deceased pensioners and active employees)

The cost factors as of the valuation date are as follows:

1. Total normal cost	\$ 17,826,000
2. Projected employee contributions	9,893,000
3. Employer normal cost	7,933,000
4. Actuarial liability - total	452,962,600
Active employees	\$277,511,300
Pensioners (including beneficiaries of deceased pensioners and active employees) ...	175,451,300
5. Assets	116,303,000
6. Unfunded actuarial liability	336,659,600

Liability for accrued vested benefits: \$355,030,800.

Note: Included are 406 active employees unknown as to age, service, or both. Status of beneficiaries was unclear. No data was provided on terminated vested employees, if any.

EXHIBIT II

ACTUARIAL ASSUMPTIONS AND FUNDING METHOD

Mortality rates -- 1971 Group Annuity Mortality Table

Disability mortality before age 65 -- Age 65 mortality under stipulated table.

Termination rates before retirement:

Age	Death*	State Employees (Rate %)			Total*
		Disability	Withdrawal		
20	.05	.06	21.20	21.31	
25	.06	.09	15.80	15.95	
30	.08	.11	11.60	11.79	
35	.11	.15	8.40	8.66	
40	.16	.22	6.20	6.58	
45	.29	.36	4.20	4.85	
50	.53	.61	--	1.13	
55	.85	1.01	--	1.86	
60	1.31	--	--	1.31	

15% of the above disability rates are service-connected.

Age	Death*	Teachers (Rate %)			Total*
		Disability	Withdrawal		
20	.05	.06	12.39	12.50	
25	.06	.09	9.70	9.85	
30	.08	.11	7.50	7.69	
35	.11	.15	5.66	5.92	
40	.16	.22	4.14	4.52	
45	.29	.36	2.75	3.41	
50	.53	.61	--	1.13	
55	.85	1.01	--	1.86	
60	1.31	--	--	1.31	

15% of the above disability rates are service-connected.

* Rates shown are for men; rates for women are slightly lower.

Note: Detail figures may not add to totals shown due to rounding.

Salary scale:

Age	Present salary as a percent of salary at 65	Annual increase (Rate %)
20		
25	17.45	
30	22.07	4.84
35	27.76	4.75
40	34.62	4.59
45	42.68	4.39
50	51.76	4.08
55	61.77	3.72
60	72.98	3.45
	86.08	3.33
		3.16

Includes allowance for inflation of 3% per year

Unknown characteristics of employees: Same as those exhibited by employees with known characteristics. Unknown sex of State Employees is allocated as 58% men, 42% women. Unknown salary is assumed to be \$10,000 for State Employees and \$15,000 for Teachers. Retirement age -- State Employees: 64, or completion of service requirement if later. Teachers: 63, or completion of service requirement if later.

Post-retirement increases -- 3% per annum, based on original benefit
Percent married -- Social Security awards during 1972

Net investment return -- 6½%
Valuation of assets -- At amortized book value for bonds and at cost for stocks.

Funding method -- Entry age normal cost

EXHIBIT III
SUMMARY OF PLAN PROVISIONS

Service pension

	General Employees			Correctional Officers	Legislators	
	60	55	None	50	55	None
Age requirement:	60	55	None	50	55	None
	or	or			or	
Service requirement:	10 yrs.	30 yrs.	35 yrs.	20 yrs.	8 yrs.	20 yrs.

Amount: 1.7% of final average salary up to 10 years of service plus 1.9% per year for the next 10 years of service plus 2.4% for each additional year of service to a maximum of 80%. Final average salary is defined as the average of compensation earned during the highest 3 consecutive years prior to termination. Correctional officers receive 2% of final average salary per year of service. Legislators receive \$300 per year of service to a maximum of \$6,000. Retirement is mandatory at age 70 except for elected officials. For correctional officers, mandatory retirement is at age 55 or completion of 20 years of service if later.

Early retirement

Age requirement: None
Service requirement: 30 years
Amount: Regular pension accrued, reduced by 6% for each year of age less than 55.

Disability

Non-occupational:

Age requirement: None
Service requirement: 7 years
Amount: Regular pension based on service accrued and final average salary at disability (but not less than 26.5%), payable immediately.

Occupational:

Age requirement: None
Service requirement: None
Amount: 66 2/3% of final salary, payable immediately.

Vesting

Age requirement: None
Service requirement: 10 years
Amount: Regular pension accrued, payable at age 60.

Pre-retirement death benefits

Lump sum benefit:

Age requirement: None
Service requirement: None
Amount: (a) \$400 per year of service to a maximum of \$8,000 and with a minimum of \$2,000.
(b) Refund of employee contributions.

Spouse's benefit (applicable only if elected by employee):

Age requirement: 60 or 50 Legislators: none
Service requirement: 10 yrs. or 20 yrs. 8 years

Amount: Benefit employee would have received had he retired the day before he died and elected the joint and survivor option.

Occupational death benefit:

Age requirement: None
Service requirement: None
Amount: (a) 50% of salary to spouse or children under age 18, less workmen's compensation.
(b) Refund of employee contributions.

Post-retirement death benefit

Lump sum benefit:

(a) 100% of employee contributions, less benefits paid.
(b) Pre-retirement death benefit, reduced 25% per year of retirement, but not less than \$2,000.

Employee contribution rate:

Date	State Employees	Teachers	Legislators
Prior to 7/1/78	5 %	6 %	30%
7/1/78 - 6/30/79	5½	6½	30
7/1/79 - 6/30/80	6	7	30
7/1/80 and later	6½	7½	30

Available options:

Joint and survivor with 50% or 100% continued to the beneficiary after the death of the employee.

Post-retirement cost-of-living increases:

3% of original amount, not compounded, to pensioners and beneficiaries. No cost-of-living increases to legislators.

Financial Statements

Comparative Financial Balance Sheet

	<u>June 30</u>	
	<u>1977</u>	<u>1976</u>
<u>Assets</u>		
Cash	\$ 1,193,195	\$ 253,052
Cash	10	
Accrued Interest Receivable	3,632,935	3,450,272
Investments (At Amortized Book Value for Bonds and Cost for Stock)	<u>275,076,476</u>	<u>243,941,049</u>
Total Assets	<u><u>\$ 279,902,616</u></u>	<u><u>\$ 247,644,373</u></u>
<u>Liabilities & Reserves</u>		
<u>Current Liabilities</u>		
Unclaimed Benefits	\$ 71,081	\$ 49,125
<u>Members' Contribution Reserves</u>		
State Employees	48,695,457	44,338,063
Teachers	66,899,231	59,273,244
Teachers Survivors	<u>4,219,680</u>	<u>3,761,603</u>
Total Members Reserves	\$ 119,814,368	\$ 107,372,910
<u>General Reserves</u>		
State Employees	\$ 100,889,055	\$ 89,630,190
Teachers	49,403,817	42,013,056
Teachers Survivors	9,722,545	8,575,648
Certain State Employees	<u>1,750</u>	<u>3,444</u>
Total General Reserves	\$ 160,017,167	\$ 140,222,338
Total Liabilities & Reserves	<u><u>\$ 279,902,616</u></u>	<u><u>\$ 247,644,373</u></u>

STATEMENT OF REVENUES AND EXPENDITURES
YEAR ENDED - JUNE 30, 1977
REVENUES

<u>Member Contributions</u>		
State Employees Legislators	\$ 8,131,918	
Teachers	8,488	
Teachers Survivors	10,289,970	
Ins. Premiums - Legislators	574,840	
State Contributions	<u>975</u>	\$ 19,006,191
State Employees	12,196,935	
Teachers	8,246,412	
Certain State Employees	<u>3,740</u>	20,447,087
<u>Municipal Contributions</u>		
Teachers	8,365,302	
Teachers Survivors	563,309	
<u>Investment Income</u>		
Interest	13,220,011	
Dividends*	4,017,610	
Capital Gain or (Loss)	188,843	
<u>Miscellaneous</u>		
Miscellaneous Receipts	9,860	
Employees Trans. - Municipal	11,420	
Unclaimed Benefits	36,030	
Interest - Service Purchase	119,489	
Total Revenues	<u><u>176,799</u></u>	\$ 65,985,152

	<u>EXPENDITURES</u>	
<u>Pension Benefits</u>		
State Employees	\$ 11,442,338	
Legislators	504,951	
Teachers	17,959,913	
Teachers Survivors	268,167	
Certain State Employees	<u>4,513</u>	\$ 30,179,882
<u>Death Benefits</u>		
State Employees	736,246	
Legislators	44,800	
Teachers	<u>228,040</u>	1,009,086
<u>Refunds of Contributions</u>		
State Employees	1,462,598	
Teachers	843,750	
Teachers Survivors	113,042	
Interest on Refunds - Survivors	17,958	
Municipalities	<u>75,440</u>	2,512,788
<u>Investment Expense</u>		
Postage & Insurance	<u>162</u>	162
<u>Miscellaneous</u>		
Miscellaneous Refunds	10,227	
Employees Transfers - Municipal	690	
Unclaimed Benefits	<u>14,074</u>	24,991
Total Expenditures	<u><u>33,726,909</u></u>	\$ 33,726,909
Excess Revenues over Expenditures		<u><u>\$ 32,258,243</u></u>

*Dividends include Sale of Options Income
of \$ 423,059.53

Analysis of Revenue & Expenditures
Fiscal Year Ended - June 30, 1977

<u>REVENUES</u>	<u>State Employees</u>		<u>Teachers</u>		Total
	Amount	%	Amount	%	
Members Contributions	\$ 8,141,380	27.3	\$10,864,811	30.0	\$19,006,191
State Contributions	12,200,675	40.9	8,246,412	22.8	20,447,087
Municipal Contributions			8,928,611	24.7	8,928,611
Investment Earnings	9,370,122	31.4	8,056,179	22.3	17,426,301
Miscellaneous	104,706	00.4	72,093	00.2	176,799
Total Revenues	\$29,816,883	100.0	\$36,168,106	100.0	\$65,984,989
 <u>EXPENDITURES</u>					
Pensions	\$11,045,772	37.1	\$16,279,438	45.0	\$27,325,210
Cost of Living Adjust.	906,029	03.0	1,948,642	05.4	2,854,671
Death Benefits	781,046	02.6	228,040	00.6	1,009,086
Refunds-Contributions	1,462,598	04.9	1,050,190	02.9	2,512,788
Miscellaneous	17,210	00.1	7,781	00.1	24,991
Total Expenditures	\$14,212,655	47.7	\$19,514,091	54.0	\$33,726,746
Excess Revenues over Expenditures - to Reserves	\$15,604,228	52.3	\$16,654,015	46.0	\$32,258,243
 <u>Distribution of Excess Revenue</u>					
<u>Unclaimed Benefits</u>			\$ 21,956		
<u>Members Reserves</u>					
State			4,357,394		
Teachers			7,625,987		
Survivors			458,077		
<u>General Reserves</u>					
State			11,258,864		
Teachers			7,390,761		
Survivors			1,146,897		
Certain Employees & Teachers			-1,693		
Total			\$32,258,243		

ANALYSIS OF INVESTMENT INCOME
FISCAL YEAR ENDED JUNE 30, 1977

Investment Income - Interest		\$ 12,599,560
Add: Accrued Interest June 30, 1977	\$ 3,632,935	
Accrued Interest July 1, 1976	3,450,272	
	<hr/>	
Discounts Amortized	182,663	
	715,015	
	<hr/>	
<u>Total Additions</u>		897,678
		<hr/>
Total		\$ 13,497,238
		<hr/>
Less: Accrued Interest Purchased	\$ 235,584	
Premiums Amortized	41,643	
	<hr/>	
<u>Total Deductions</u>		277,227
		<hr/>
Net Interest Earned		13,220,011
Dividends		4,017,610
		<hr/>
Total Earned on Investments		\$ 17,237,621
		<hr/>
Capital Gain		188,843
		<hr/>
Total Investment Income		\$ 17,426,464
		<hr/> <hr/>

Distribution of Investment Income
Fiscal Year Ended - June 30, 1977

	<u>State Employees</u>	<u>Teachers</u>	<u>Teachers Survivors</u>	<u>Total</u>
<u>Members Reserves:</u>				
Balance July 1, 1976	\$ 44,338,063	\$ 59,273,244	\$ 3,761,603	\$107,372,910
" June 30, 1977	48,695,456	66,899,231	4,219,680	119,814,367
 <u>General Reserves:</u>				
Balance July 1, 1976	89,630,190	42,013,055	8,575,648	140,218,893
" June 30, 1977	91,518,932	42,215,468	8,854,716	142,589,116
<hr/>				
Total	\$274,182,641	\$210,400,998	\$25,411,647	\$509,995,286
Average	\$137,091,321	\$105,200,499	\$12,705,823	\$254,997,643
%	53.77	41.25	04.98	100.0
Distribution	\$ 9,370,122	\$ 7,188,349	\$ 867,830	\$ 17,426,301
<hr/> <hr/>				

Investments