

CONNECTICUT  
STATE EMPLOYEES'  
RETIREMENT SYSTEM

Actuarial Valuation  
as of  
December 31, 1972

*MARTIN E. SEGAL COMPANY*

CONSULTANTS AND ACTUARIES

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November 20, 1973

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State Employees' Retirement Commission  
State of Connecticut  
30 Trinity Street  
Hartford, Connecticut 06115

Dear Commissioners:

We are pleased to submit herewith our Actuarial Valuation of the State Employees' Retirement System as of December 31, 1972.

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

The actuarial work has been under my direction. Others participating included Mr. Sherman G. Sass, a Senior Vice President and Manager of our New England operations, and Mr. Louis J. Zebedeo, a Vice President and Manager of our Hartford Office.

We received a great deal of help from State employees in obtaining the information which forms the basis of this report. Mr. Hugo F. Benigni of the Auditor's office, Mr. Phillip D. Hurley of the Personnel Department, Mr. William Brooks of the Payroll Department, and Mr. Ronald Oneto of the Comptroller's Data Center were most helpful in uncovering possible sources of data and making them available to us as needed. Most important, Mr. Henry J. Rigney and Mr. Robert Ruth, Chief and Assistant Chief of the Retirement Division, 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.

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

- I. SUMMARY
- II. BENEFIT PROVISIONS
- III. EMPLOYEE DATA
- IV. RETIREE DATA
- V. RETIREMENT FUND
- VI. ACTUARIAL 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  
Thomas D. Levy, F.S.A.  
Actuary

TDL: jas

## I. SUMMARY

### Benefit Provisions

The Connecticut State Employees' Retirement System covers most State employees except legislators, judges, State's attorneys, and those teachers electing coverage under the Teachers Retirement System. There are two levels of benefits -- Part B, providing benefits coordinated with Social Security, and Part C, providing maximum benefits. Employees contribute 5% of their annual earnings, except that Part B members contribute only 2% on earnings covered under Social Security (\$10,800 in 1973 and \$12,600 in 1974).

The System provides unreduced benefits of 2% per year of service. Such benefits are available to men at least age 55 with 25 years service or age 65 with 10 years service. Women may take their benefits 5 years younger than men. State police\* can retire at age 47 if they have 20 years service, at 50% of salary plus 2% for each year of service over 20. Benefits are based on the highest 3 years' earnings. After retirement, cost-of-living increases based on the Consumer Price Index are provided up to 3% per year.

The plan also provides disability and vesting benefits after 10 years of service.

### Employee Data

We received data on 39,942 active employees as of December 31, 1972. Of these, 33,455 were participating in the State System. Their average salary was \$10,100. We excluded 2,915 members from the calculation because they had less than one year of service, leaving 30,540 active employees included in the valuation. On the average, these employees were age 45 1/2, had 10 years of service, and were earning \$10,300 per year. This average salary has been increasing at a rate of 7.9% per year since our last valuation, three years ago.

\* As used in this report, "state police" also includes certain correctional department employees described in Section 5-173, for retirement (but not survivor) benefits.

### Retiree Data

We received data on 8,558 pensioners and 173 beneficiaries as of December 31, 1972. The pensioners' average monthly benefit was \$311. In the last three years, the number of pensioners has increased by 10.8% per year, the average amount by 6.9% per year; and the total pension payroll by 18.4% per year. Almost 16% of the pensioners retired in 1972.

### Retirement Fund

As of December 31, 1972, the Fund had assets of \$66.4 million available as an offset to the liabilities for future benefits.

### Actuarial Valuation

Our valuation was prepared as of December 31, 1972. Our calculations were based on what we feel are reasonable assumptions as to mortality, disability, terminations from employment, and retirement ages. For salary projections, we used a scale reflecting the State's salary schedules. We assumed that investment yield over the long term would be 4%. 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 assumptions and methods are identical to those used in our previous actuarial valuation (December 31, 1969).

The normal cost\* (or current service cost) to the State is 27.7 million. This is 8.8% of the payroll of participating employees with at least one year of service.

The past service liability\* (for benefits earned before 1973) is \$955 million, of which \$334 million represents the liability to those already receiving pensions. The unfunded past service liability at the end of 1972 was \$889 million. (This is not a deficit, in the usual accounting sense, but rather is a figure calculated so as to be a basis for determining an appropriate pension contribution.)

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\*Please refer to the "Actuarial Valuation" section of the report for definitions of these terms.

Based on the normal cost plus 40 year amortization of the unfunded past service liability, the annual cost is 23.95% of payroll. In Fiscal 1974-75, the State's funding scheme calls for 45% of this amount to be contributed (10.78% of payroll). Using our estimate of the expected 1974-75 payroll, this produces a required appropriation of \$39,697,600.

The costs are very close to what would have been predicted based on our previous valuation. This indicates that the actuarial assumptions, taken as a whole, remain reasonable.

The incidence of disability retirement has been much higher than predicted by our assumptions. In 1972, there were 215 disability awards, compared to 75 expected awards. ✓

The recommended reimbursement rate for programs which are billed at "full cost" is 22.3% of payroll, effective July 1, 1974.

## II. BENEFIT PROVISIONS

### Coverage

Virtually all non-teaching employees of the State are eligible to be covered except for those covered under the General Assembly, State's Attorneys' and Probate Court Retirement Systems. Teachers in State employment may elect either the State Employees' Retirement System or the Retirement System for Teachers. Prior to becoming a permanent employee in the classified service, each employee (except police) may elect either "Part B," which provides benefits integrated with Social Security benefits, or "Part C," providing maximum benefits unreduced for Social Security. Prior to 1973, he could also elect not to participate. Once an employee becomes a permanent employee in the classified service, he may not change his election except to upgrade his benefits from Part B to Part C.

State police are covered for benefits similar to those of Part C; they are not under Social Security.

### Employee Contributions

State police and Part C employees contribute 5% of their salary. Part B employees contribute 2% of that part of their earnings on which Social Security contributions are deducted (\$10,800 in 1973 and \$12,600 in 1974) plus 5% on salary in excess of that amount. In addition, State police pay 1 3/4% of the first \$4,800 of salary to pay for survivor's benefits.

### Retirement Benefits

Normal unreduced benefits are available after 25 years of service to men age 55 and women age 50, and after 10 years of service to 65 year old men and 60 year old women. Benefits are based on "base salary" -- the average salary of the three highest years of State service.

Part C members receive a pension of 2% of base pay per year of service. Part B members receive the same benefit until age 65, at which time their benefit is recomputed based on 1% of the first \$4,800 of base pay plus 2% of base pay in excess of \$4,800 per year of service.

State police can take unreduced benefits at age 47 if they have 20 years of service. Their benefit is 50% of base salary plus 2% of salary per year of service over 20.

Men retiring after age 70 and women retiring after age 65 with at least 5 years of service get a benefit of 2 1/2% of salary ( 1 1/4% on the first \$4,800 under Part B) per year of service (maximum 20 years) if this will provide a larger benefit.

Note that Part B benefits are integrated based on a \$4,800 salary, although contributions are based on the actual Social Security wage base each year. Thus each time the Social Security wage base is increased, the Part B contributions are decreased but the Part B benefits are not.

A member may elect an option that gives him a reduced pension but guarantees that some or all of his pension will be payable to his widow after his death.

If a pensioner dies before a fixed portion (currently 25%) of his pension payments exceeds his own contributions, the balance of his contributions will be paid to his beneficiary.

After retirement, there is a cost-of-living adjustment every year. Each person's pension is increased by the percentage increase in the Consumer Price Index over the previous year. If this would give more than a 3% increase, then only a 3% increase is in fact given; the excess over 3% does not carry forward to the cost-of-living calculation for the following year.



### Disability Benefits

A member who becomes unable to perform his job due to disability will get a pension if he has ten years of service or if the cause of disability was job-connected. The pension is 50% of base salary plus 2% of salary per year of service in excess of 25 years (20 years for State Police). At age 65 (or qualification for Social Security disability benefits if earlier), Part B members will get a reduction based on the first \$4,800 of salary.

### Death Benefits

In general, the beneficiary of an employee who dies in active service will receive a refund of the employee's own contributions. If an option is in effect, however, there may be a pension payable to the widow. The widow of a policeman receives \$175 per month as long as she has children under 18 or is herself over age 55, provided she has not remarried. In addition, there is a payment of \$100 a month for one child under 18 and \$175 a month for more than one such child.

### Withdrawal Benefits

An employee who terminates employment after 10 years of service (with at least the last 5 continuous) may choose either a deferred pension (based on his accumulated credits) or a refund of his contributions. Any other former employee is entitled only to a refund of his contributions, unless he is already eligible for a pension.

Table 1A

Census and Average Salaries of Employees in Active Service  
As of December 31, 1972  
By Age and By Years of Service

Age	Total	Years of Service								
		0 - 4	5 - 9	10-14	15-19	20-24	25-29	30-34	35 and over	Unknown
Total	33,455 \$10,100	12,830 \$ 8,700	8,740 \$10,200	4,636 \$10,600	3,145 \$11,500	1,807 \$12,300	874 \$12,800	379 \$13,900	192 \$14,000	852 \$13,700
Under 20	166 \$ 5,800	165 \$ 5,800	-- --	-- --	-- --	-- --	-- --	-- --	-- --	1 \$ 5,600
20 - 24	1,894 7,300	1,694 7,200	153 \$ 8,200	-- --	-- --	-- --	-- --	-- --	-- --	47 7,800
25 - 29	3,179 9,100	2,090 8,800	935 9,600	68 \$ 9,100	-- --	-- --	-- --	-- --	-- --	86 9,700
30 - 34	3,185 10,400	1,435 9,700	1,155 11,000	427 10,600	63 \$11,500	-- --	-- --	-- --	-- --	105 12,700
35 - 39	3,207 11,000	1,173 9,800	917 11,700	595 11,700	382 11,500	42 \$10,800	-- --	-- --	-- --	98 13,900
40 - 44	3,912 10,900	1,390 9,400	985 11,200	601 12,000	541 12,100	232 12,200	44 11,800	-- --	-- --	119 14,300
45 - 49	4,729 10,700	1,434 9,000	1,244 10,500	692 11,000	583 12,600	441 12,600	181 11,400	30 \$11,800	-- --	124 14,500
50 - 54	4,741 10,300	1,415 8,500	1,157 9,700	713 10,600	562 11,400	419 13,200	259 12,900	114 12,500	10 \$13,100	92 15,300
55 - 59	4,037 10,000	994 8,300	1,052 9,200	667 9,300	509 10,400	347 12,000	212 13,100	120 15,500	62 12,500	74 15,600
60 - 64	2,519 10,100	486 8,100	662 8,800	462 9,800	357 10,600	231 11,800	125 14,100	76 13,600	72 14,000	48 14,800
65 and over	787 10,800	101 9,400	224 9,700	156 10,300	109 10,500	71 11,700	39 12,700	27 17,100	39 15,100	21 13,000
Unknown	1,099 9,700	453 8,300	256 9,400	255 9,600	39 11,000	24 13,100	14 15,200	12 10,300	9 20,300	37 20,100

Table 1C

Census and Average Salaries of Employees in Active Service  
as of December 31, 1972  
By Age and By Years of Service  
Women

Age	Total	Years of Service								
		0 - 4	5 - 9	10-14	15-19	20-24	25-29	30-34	35 and over	Unknown
Total	13,389 \$ 8,200	5,687 \$ 7,200	3,649 \$ 8,300	1,724 \$ 8,400	961 \$ 9,100	560 \$10,000	257 \$10,500	138 \$11,300	79 \$12,100	334 \$12,000
Under 20	98 \$ 5,400	97 \$ 5,400	-- --	-- --	-- --	-- --	-- --	-- --	-- --	1 \$ 5,600
20 - 24	957 6,600	860 6,600	78 \$ 7,100	-- --	-- --	-- --	-- --	-- --	-- --	19 7,000
25 - 29	1,075 8,100	694 7,900	326 8,400	27 \$ 7,200	-- --	-- --	-- --	-- --	-- --	28 9,100
30 - 34	909 8,300	493 7,800	287 9,000	92 8,500	10 \$ 7,700	-- --	-- --	-- --	-- --	27 10,900
35 - 39	937 8,400	493 7,700	255 8,900	86 9,000	66 8,700	10 \$ 8,300	-- --	-- --	-- --	27 12,300
40 - 44	1,427 8,100	663 7,300	388 8,400	156 9,000	102 9,400	73 9,300	10 \$ 9,000	-- --	-- --	35 10,000
45 - 49	1,967 8,300	730 7,300	593 8,400	272 8,600	137 9,400	102 9,800	71 9,600	13 \$10,000	-- --	49 11,600
50 - 54	2,172 8,300	732 7,000	645 8,300	314 8,600	195 9,100	115 10,600	67 10,700	57 11,800	2 \$13,100	45 11,600
55 - 59	1,917 8,300	473 7,000	569 8,000	359 8,000	232 8,700	121 10,000	59 10,700	32 12,000	29 9,900	43 13,600
60 - 64	1,064 8,600	190 7,400	309 7,800	222 8,300	146 9,200	93 10,200	32 11,400	20 10,000	29 10,500	23 12,400
65 & over	288 9,000	35 7,900	66 7,400	55 8,500	52 9,200	31 9,000	13 12,100	9 10,800	15 15,700	12 9,500
Unknown	578 8,200	227 6,400	133 7,300	141 7,800	21 9,100	15 11,200	5 11,500	7 11,400	4 26,300	25 23,800

COMMISSION

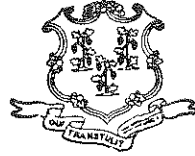
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State of Connecticut

STATE EMPLOYEES'  
RETIREMENT COMMISSION  
OFFICE OF THE STATE COMPTROLLER  
30 TRINITY STREET  
HARTFORD, CONNECTICUT 06115

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DR. VINCENT ANNUNZIATA

January 15, 1974

Honorable Gerald McCann  
Deputy Commissioner  
Department of Finance and Control  
State Capitol  
Hartford, Connecticut 06115

Dear Deputy Commissioner McCann:

At the request of Honorable J. Frederick Bitzer, Chairman, it is our pleasure to enclose the Connecticut State Employees' Retirement System Actuarial Valuation as of December 31, 1972 prepared by the Martin E. Segal Company, Inc.

Very truly yours,

STATE RETIREMENT COMMISSION  
NATHAN G. AGOSTINELLI, SECRETARY

BY: *Henry J. Rigney*

Henry J. Rigney, Chief  
Retirement Division

HJR:sar  
encl.

Table 2A

Statistical Data on Employees  
As of December 31, 1972

## All Participants

	Total	Male	Female
Covered Employees	33,455	20,066	13,389
Less: employees with less than 1 year of service	2,915	1,603	1,312
Active employees included in valuation:			
Number	30,540	18,463	12,077
Total annual salary	\$314,825,200	\$214,680,400	\$100,144,800
Average age	45 1/2	44 1/2	46 1/2
Average years of service <sup>+</sup>	10	10 1/2	9 1/2
Average annual salary	\$ 10,300	\$ 11,600	\$ 8,300
Number* eligible at end of year to retire on:			
Normal retirement pension	1,788	759	1,029
Early retirement pension	2,734	1,398	1,336
Number* as of end of year with vested right to deferred pension	6,227	5,000	1,227

## CONNECTICUT SERS

<sup>+</sup>Includes purchased service adjustment.

\*Includes only employees with known age and service.

Table 2B

Statistical Data on Employees  
As of December 31, 1972

## Police

	Total	Male	Female
Covered employees	797	786	11
Less: employees with less than 1 year of service	78	78	--
Active employees included in valuation:			
Number	719	708	11
Total annual salary	\$8,393,100	\$8,268,300	\$ 124,800
Average age	37	36 1/2	39
Average years of service <sup>+</sup>	10 1/2	10 1/2	10 1/2
Average annual salary	\$ 11,700	\$ 11,700	\$ 11,300
Number eligible at end of year to retire on:			
Normal retirement pension	39	37	2
Early retirement pension	--	--	--
Number as of end of year with vested right to deferred pension	257	256	1

## CONNECTICUT SERS

<sup>+</sup>Includes purchased service adjustment.

Table 2C

Statistical Data on Employees  
As of December 31, 1972

## Part B

	Total	Male	Female
Covered employees	20,750	13,196	7,554
Less: employees with less than 1 year of service	1,611	870	741
Active employees included in valuation:			
Number	19,139	12,326	6,813
Total annual salary	\$199,097,300	\$143,809,800	\$55,287,500
Average age	43 1/2	43 1/2	43 1/2
Average years of service <sup>+</sup>	10	11	8 1/2
Average annual salary	\$ 10,400	\$ 11,700	\$ 8,100
Number* eligible at end of year to retire on:			
Normal retirement pension	550	267	283
Early retirement pension	1,482	820	662
Number* as of end of year with vested right to deferred pension	4,705	3,912	793

## CONNECTICUT SERS

<sup>+</sup>Includes purchased service adjustment.

\*Includes only employees with known age and service.

Table 2D

Statistical Data on Employees  
As of December 31, 1972

## Part C

	Total	Male	Female
Covered employees	11,908	6,084	5,824
Less: employees with less than 1 year of service	1,226	655	571
Active employees included in valuation:			
Number	10,682	5,429	5,253
Total annual salary	\$107,334,800	\$ 62,602,300	\$ 44,732,500
Average age	49 1/2	49	50 1/2
Average years of service <sup>+</sup>	10 1/2	10 1/2	10 1/2
Average annual salary	\$ 10,000	\$ 11,500	\$ 8,500
Number* eligible at end of year to retire on:			
Normal retirement pension	1,199	455	744
Early retirement pension	1,252	578	674
Number* as of end of year with vested right to deferred pension	1,265	832	433

## CONNECTICUT SERS

<sup>+</sup>Includes purchased service adjustment.

\*Includes only employees with known age and service.



#### IV. 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>Item</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>
Pensioners:			
Number	8,558	4,592	3,966
Average age	68	68	68 1/2
Average monthly benefit	\$ 311	\$ 366	\$ 248
Beneficiaries:			
Number	173	6	167
Average age	70 1/2	71	70 1/2
Average monthly benefit	\$ 201	\$ 255	\$ 199

Our 1969 review showed 6,296 pensioners. Thus there has been a 35.9% three-year increase -- a 10.8% annual compound rate. The average benefit increased from \$255 to \$311 -- a 22.0% increase (6.9% per year). These two items have combined to increase the total pensioner payroll (excluding beneficiaries) from \$1.6 million to \$2.7 million per month. This is a 65.8% increase in only three years -- about 18.4% per year. As the 1973 amendment revising the method of computing cost-of-living increases takes effect, the rate of increase in the average amount should escalate still more. This is one of the main reasons for the transition to "level" actuarial funding of retirement costs -- to get away from the drastic year-to-year increases that necessarily occur on "pay-as-you-go" type funding.

Tables 3A, 3B, and 3C give amount distributions of the 1,365 new pensions in 1972 by type of pension and sex. Tables 4A, 4B, and 4C do the same for age at retirement.

Tables 5A, 5B, and 5C give amount distributions for all 8,558 pensions in force at the end of 1972 by type and by sex. Tables 6A, 6B, and 6C do the same thing by age.

In addition to the active employees, pensioners and beneficiaries, there are 232 former employees who will be eligible for a vested pension.

Table 3A

Pensions Awarded in the Year Ended December 31, 1972  
by Type and by Monthly Amount

Monthly Amount	Total	Type of Pension				
		Regular	Service Disability	Regular Disability	Police	Sec.5-173
Total	1,365	1,115	34	181	9	26
Under \$49	7	7	--	--	--	--
\$50 - 99	68	68	--	--	--	--
100 - 149	142	141	1	--	--	--
150 - 199	142	136	--	6	--	--
200 - 249	104	96	--	8	--	--
250 - 299	126	94	2	30	--	--
300 - 349	118	86	2	30	--	--
350 - 399	123	72	9	41	--	1
400 - 449	86	58	9	19	--	--
450 - 499	61	43	7	9	--	2
500 - 599	100	72	2	11	--	16
600 - 699	84	73	1	6	1	3
700 - 799	51	36	--	6	7	2
800 - 899	39	33	--	3	1	2
900 - 999	33	29	--	4	--	--
1,000 - 1,099	21	17	--	4	--	--
1,100 - 1,199	13	13	--	--	--	--
1,200 - 1,299	23	21	--	2	--	--
1,300 - 1,399	6	6	--	--	--	--
1,400 - 1,499	9	8	--	1	--	--
1,500 - 1,999	6	4	1	1	--	--
2,000 - 2,499	2	2	--	--	--	--

Table 3B

Pensions Awarded in the Year Ended December 31, 1972  
by Type and by Monthly Amount  
Male

Monthly Amount	Total	Type of Pension				
		Regular	Service Disability	Regular Disability	Police	Sec.5-173
Total	756	574	25	122	9	26
Under \$49	5	5	--	--	--	--
\$50 - 99	34	34	--	--	--	--
100 - 149	53	53	--	--	--	--
150 - 199	50	48	--	2	--	--
200 - 249	42	37	--	5	--	--
250 - 299	48	30	1	17	--	--
300 - 349	58	37	1	20	--	--
350 - 399	78	41	7	29	--	1
400 - 449	51	27	9	15	--	--
450 - 499	40	26	5	7	--	2
500 - 599	71	45	2	8	--	16
600 - 699	58	50	--	4	1	3
700 - 799	44	32	--	3	7	2
800 - 899	31	26	--	2	1	2
900 - 999	27	23	--	4	--	--
1,000 - 1,099	18	15	--	3	--	--
1,100 - 1,199	11	11	--	--	--	--
1,200 - 1,299	19	18	--	1	--	--
1,300 - 1,399	5	5	--	--	--	--
1,400 - 1,499	8	7	--	1	--	--
1,500 - 1,999	4	3	--	1	--	--
2,000 - 2,499	1	1	--	--	--	--

CONNECTICUT SERS

Table 3C

Pensions Awarded in the Year Ended December 31, 1972  
by Type and by Monthly Amount  
Female

Monthly Amount	Total	Type of Pension		
		Regular	Service Disability	Regular Disability
Total	609	541	9	59
Under \$49	2	2	--	--
\$50 - 99	34	34	--	--
100 - 149	89	88	1	--
150 - 199	92	88	--	4
200 - 249	62	59	--	3
250 - 299	78	64	1	13
300 - 349	60	49	1	10
350 - 399	45	31	2	12
400 - 449	35	31	--	4
450 - 499	21	17	2	2
500 - 599	30	27	--	3
600 - 699	26	23	1	2
700 - 799	7	4	--	3
800 - 899	8	7	--	1
900 - 999	6	6	--	--
1,000 - 1,099	3	2	--	1
1,100 - 1,199	2	2	--	--
1,200 - 1,299	4	3	--	1
1,300 - 1,399	1	1	--	--
1,400 - 1,499	1	1	--	--
1,500 - 1,999	2	1	1	--
2,000 - 2,499	1	1	--	--

CONNECTICUT SERS

Table 4A

Pensions Awarded in the Year Ended December 31, 1972  
By Type and by Age on Effective Date

Age on Effective Date	Total	Type of Pension				
		Regular	Service Disability	Regular Disability	Police	Sec.5-173
Total	1,365	1,115	34	181	9	26
25 - 29	1	--	1	--	--	--
30 - 34	2	--	2	--	--	--
35 - 39	5	--	2	3	--	--
40 - 44	17	--	7	10	--	--
45 - 49	27	2	2	15	4	4
50	26	17	1	5	1	2
51	24	12	--	8	2	2
52	17	10	1	4	--	2
53	16	11	--	3	--	2
54	17	8	1	6	--	2
55	91	79	3	6	--	3
56	49	40	2	6	--	3
57	48	36	--	9	1	2
58	53	43	--	9	1	--
59	47	39	--	7	--	1
60	63	48	2	12	--	1
61	72	54	2	15	--	1
62	108	93	4	10	--	1
63	84	75	--	9	--	--
64	63	49	1	12	--	1
65	130	124	1	5	--	--
66	81	73	2	5	--	1
67	63	54	--	9	--	--
68	41	35	--	6	--	--
69	47	43	--	4	--	--
70	118	115	--	3	--	--
71	28	28	--	--	--	--
72	14	14	--	--	--	--
73	11	11	--	--	--	--
75	1	1	--	--	--	--
76	1	1	--	--	--	--

Table 4B

Pensions Awarded in the Year Ended December 31, 1972  
By Type and By Age on Effective Date  
Male

Age on Effective Date	Total	Type of Pension				
		Regular	Service Disability	Regular Disability	Police	Sec. 5-173
Total	756	574	25	122	9	26
25 - 29	1	--	1	--	--	--
30 - 34	2	--	2	--	--	--
35 - 39	5	--	2	3	--	--
40 - 44	14	--	6	8	--	--
45 - 49	24	2	2	12	4	4
50	9	--	1	5	1	2
51	12	1	--	7	2	2
52	8	1	1	4	--	2
53	6	1	--	3	--	2
54	6	--	--	4	--	2
55	68	60	2	3	--	3
56	29	24	2	2	--	1
57	30	20	--	7	1	2
58	24	18	--	5	1	--
59	30	26	--	3	--	1
60	44	32	2	9	--	1
61	40	29	1	9	--	1
62	56	48	1	6	--	1
63	39	36	--	3	--	--
64	35	27	--	7	--	1
65	57	53	1	3	--	--
66	38	33	1	3	--	1
67	33	26	--	7	--	--
68	18	14	--	4	--	--
69	18	15	--	3	--	--
70	82	80	--	2	--	--
71	14	14	--	--	--	--
72	6	6	--	--	--	--
73	6	6	--	--	--	--
75	1	1	--	--	--	--
76	1	1	--	--	--	--

Table 4C

Pensions Awarded in the Year Ended December 31, 1972  
By Type and By Age on Effective Date  
Female

Age on Effective Date	Total	Type of Pension		
		Regular	Service Disability	Regular Disability
Total	609	541	9	59
40 - 44	3	--	1	2
45 - 49	3	--	--	3
50	17	17	--	--
51	12	11	--	1
52	9	9	--	--
53	10	10	--	--
54	11	8	1	2
55	23	19	1	3
56	20	16	--	4
57	18	16	--	2
58	29	25	--	4
59	17	13	--	4
60	19	16	--	3
61	32	25	1	6
62	52	45	3	4
63	45	39	--	6
64	28	22	1	5
65	73	71	--	2
66	43	40	1	2
67	30	28	--	2
68	23	21	--	2
69	29	28	--	1
70	36	35	--	1
71	14	14	--	--
72	8	8	--	--
73	5	5	--	--

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Table 5A

Pensions in Force on December 31, 1972  
by Type and by Monthly Amount

Monthly Amount	Total	Type of Pension				
		Regular	Service Disability	Regular Disability	Police	Sec.5-173
Total	8,558	7,222	248	1,045	15	28
Under \$49	335	335	--	--	--	--
\$50 - 99	985	964	9	12	--	--
100 - 149	992	885	16	91	--	--
150 - 199	866	704	26	136	--	--
200 - 249	857	647	40	170	--	--
250 - 299	926	647	53	226	--	--
300 - 349	771	580	27	163	1	--
350 - 399	628	483	27	116	1	1
400 - 449	478	410	19	49	--	--
450 - 499	370	327	15	25	--	3
500 - 599	486	438	5	25	2	16
600 - 699	316	298	6	6	2	4
700 - 799	174	154	1	10	7	2
800 - 899	116	107	2	3	2	2
900 - 999	83	78	--	5	--	--
1,000 - 1,099	49	45	--	4	--	--
1,100 - 1,199	35	35	--	--	--	--
1,200 - 1,299	39	36	1	2	--	--
1,300 - 1,399	18	18	--	--	--	--
1,400 - 1,499	16	15	--	1	--	--
1,500 - 1,999	16	14	1	1	--	--
2,000 - 2,499	2	2	--	--	--	--

CONNECTICUT SERS

Table 5B

Pensions in Force on December 31, 1972  
by Type and by Monthly Amount  
Male

Monthly Amount	Total	Type of Pension				
		Regular	Service Disability	Regular Disability	Police	Sec.5-173
Total	4,592	3,743	155	651	15	28
Under \$49	143	143	--	--	--	--
\$50 - 99	383	373	5	5	--	--
100 - 149	391	341	9	41	--	--
150 - 199	405	307	15	83	--	--
200 - 249	385	276	17	92	--	--
250 - 299	449	294	25	130	--	--
300 - 349	450	312	20	117	1	--
350 - 399	385	278	23	82	1	1
400 - 449	294	239	17	38	--	--
450 - 499	275	239	13	20	--	3
500 - 599	354	313	4	19	2	16
600 - 699	234	220	4	4	2	4
700 - 799	142	126	--	7	7	2
800 - 899	88	80	2	2	2	2
900 - 999	68	63	--	5	--	--
1,000 - 1,099	42	39	--	3	--	--
1,100 - 1,199	27	27	--	--	--	--
1,200 - 1,299	32	30	1	1	--	--
1,300 - 1,399	16	16	--	--	--	--
1,400 - 1,499	14	13	--	1	--	--
1,500 - 1,999	14	13	--	1	--	--
2,000 - 2,499	1	1	--	--	--	--

CONNECTICUT SERS

Table 5C

Pensions in Force on December 31, 1972  
by Type and by Monthly Amount  
Female

Monthly Amount	Total	Type of Pension		
		Regular	Service Disability	Regular Disability
Total	3,966	3,479	93	394
Under \$49	192	192	--	--
\$50 - 99	602	591	4	7
100 - 149	601	544	7	50
150 - 199	461	397	11	53
200 - 249	472	371	23	78
250 - 299	477	353	28	96
300 - 349	321	268	7	46
350 - 399	243	205	4	34
400 - 449	184	171	2	11
450 - 499	95	88	2	5
500 - 599	132	125	1	6
600 - 699	82	78	2	2
700 - 799	32	28	1	3
800 - 899	28	27	--	1
900 - 999	15	15	--	--
1,000 - 1,099	7	6	--	1
1,100 - 1,199	8	8	--	--
1,200 - 1,299	7	6	--	1
1,300 - 1,399	2	2	--	--
1,400 - 1,499	2	2	--	--
1,500 - 1,999	2	1	1	--
2,000 - 2,499	1	1	--	--

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Table 6A

Pensions in Force on December 31, 1972  
By Type and By Age

Age on December 31, 1972	Total	Type of Pension				
		Regular	Service Disability	Regular Disability	Police	Sec. 5-173
Total	8,558	7,222	248	1,045	15	28
25 - 29	4	--	4	--	--	--
30 - 34	7	--	6	1	--	--
35 - 39	13	--	6	7	--	--
40 - 44	52	1	24	27	--	--
45 - 49	99	13	19	58	5	4
50 - 54	303	154	31	102	6	10
55 - 59	870	657	49	152	4	8
60 - 64	1,554	1,271	42	236	--	5
65 - 69	2,141	1,874	34	232	--	1
70 - 74	1,821	1,655	18	148	--	--
75 - 79	1,017	970	8	39	--	--
80 - 84	489	457	5	27	--	--
85 - 89	151	137	2	12	--	--
90 - 94	29	25	--	4	--	--
95 - 99	6	6	--	--	--	--
100 - 104	2	2	--	--	--	--

CONNECTICUT SERS

Table 6B

Pensions in Force on December 31, 1972  
by Type and by Age  
Male

Age on December 31, 1972	Total	Type of Pension				
		Regular	Service Disability	Regular Disability	Police	Sec. 5-173
Total	4,592	3,743	155	651	15	28
25 - 29	2	--	2	--	--	--
30 - 34	5	--	4	1	--	--
35 - 39	8	--	3	5	--	--
40 - 44	37	--	16	21	--	--
45 - 49	70	11	14	36	5	4
50 - 54	139	31	20	72	6	10
55 - 59	503	365	34	92	4	8
60 - 64	850	681	23	141	--	5
65 - 69	1,117	956	20	140	--	1
70 - 74	975	878	8	89	--	--
75 - 79	524	489	6	29	--	--
80 - 84	272	253	4	15	--	--
85 - 89	72	63	1	8	--	--
90 - 94	13	11	--	2	--	--
95 - 99	4	4	--	--	--	--
100 - 104	1	1	--	--	--	--

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Table 6C

Pensions in Force on December 31, 1972  
By Type and By Age  
Female

Age on December 31, 1972	Total	Type of Pension		
		Regular	Service Disability	Regular Disability
Total	3,966	3,479	93	394
25 - 29	2	--	2	--
30 - 34	2	--	2	--
35 - 39	5	--	3	2
40 - 44	15	1	8	6
45 - 49	29	2	5	22
50 - 54	164	123	11	30
55 - 59	367	292	15	60
60 - 64	704	590	19	95
65 - 69	1,024	918	14	92
70 - 74	846	777	10	59
75 - 79	493	481	2	10
80 - 84	217	204	1	12
85 - 89	79	74	1	4
90 - 94	16	14	--	2
95 - 99	2	2	--	--
100 - 104	1	1	--	--

V. RETIREMENT FUND

In connection with the State Employees' Retirement System, the State Treasurer maintains the State Employees' Retirement Fund. The Retirement Division provided us with financial statements as of December 31, 1972.

The Fund receives all employee and State contributions. The assets are invested in accordance with the State's trust law, with the income being added to the Fund. In general, the bulk of the assets are invested in the State's mutual investment accounts for retirement funds.

Payments out of the Fund are primarily for refunds of employee contributions and for 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 a portion of his payments from the Fund equal to his total contributions.

As of December 31, 1972, the Fund Balance was \$66,369,897.62. A detailed breakdown of these assets is shown in Table 7.

Table 7  
Assets as of December 31, 1972

Cash		\$ 530,918.97
Investments		
Mutual fixed income fund	\$44,767,541.51	
Mutual equity fund	15,890,437.14	
Short-term investment fund	5,088,155.00	
Savings accounts	<u>100,000.00</u>	<u>65,846,133.65</u>
Total assets		\$66,377,052.62
Less: Accounts payable		<u>7,155.00</u>
Net assets		<u>\$66,369,897.62</u>

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## VI. ACTUARIAL VALUATION

### Valuation as of December 31, 1972

Our valuation was prepared as of December 31, 1972, the latest date for which the necessary data was available.

### Actuarial Assumptions

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 true 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 or 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 error. 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 are identical to those used in our previous valuation, as of December 31, 1969.

We assumed that mortality rates would conform with the Group Annuity Mortality Table for 1951, projected to 1960, set back 5 years for females. This has proven to be a reasonable basis for predicting the current mortality of white collar groups. It is one of the tables in general use in valuing pension plans in the United States.

### Disability Rates

We have assumed employees will become disabled according to the following rates:

<u>Age</u>	<u>Rate (%)</u>
37	.1
42	.1
47	.2
52	.6
57	1.1
62	3.2

These rates are based on Railroad Retirement studies and are generally conservative - that is, they predict fairly high rates of disability. It is one of the tables in general use today.

### Salary Projections

The System provides benefits that are based on the three highest 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 therefore 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 cost 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 percent of his pay when he was young and a lower percent 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 ignored the effect of general salary (as opposed to career type) increases in the future. It is our feeling that the State should not set aside today's "hard" dollars to meet comparatively "soft" dollar obligations in the future. Rather, such benefits should be funded with the same, post-inflation dollars that gave rise to those benefits.

Our basic calculation therefore reflects salary increases only 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, which have only seven steps in each salary group. The salary scale factors are:

<u>Age</u>	<u>Present Salary as a % of Age 65 Salary</u>
22	48.4%
27	56.8
32	65.1
37	73.4
42	81.8
47	89.4
52	95.0
57	98.7
62	100.0

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 funds that may have been accumulated for such people, thus resulting in a reduced

ongoing cost. Our termination data, although limited, showed quite high turnover rates for new employees. As a result, we decided to include no cost for employees with less than one year of service. For employees with more than one year of service, we assumed that terminations each year from all causes except retirement would be as follows:

<u>Age</u>	<u>Rate (%)</u>	
	<u>Men</u>	<u>Women</u>
22	6.0%	7.9%
27	5.1	7.7
32	4.8	7.0
37	4.4	6.0
42	3.9	4.9
47	3.2	3.9
52	1.7	2.7
57	2.4	2.4
62	5.1	5.1

These rates are moderately high.

#### Retirement Ages

The System provides unreduced benefits as early as age 55 for men, 50 for women and 47 for State police. Experience in recent years, however, has been that, on the average, men retire around age 62 and women at a slightly younger age. We have assumed men will retire when they are both over age 60 and have completed 30 years of service, but not later than age 65 with 10 years of service. Women, we have assumed, will retire at age 60, or completion of 10 years of service if later. State police retirements are assumed to occur when the officer is both age 52 and has 25 years of service. In any case where the employee already meets these assumed conditions of age and service, it is projected that he will retire immediately.

#### Post-Retirement Increases

Cost-of-living increases are regularly provided to pensioners. Our calculation assumes no future benefit increases due to changes in the cost of living. The reasons for this are the same as the ones given above for omitting general increases from the salary scale.

### Investment Yield

Investment yield has a profound 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 5% - in contrast to a 4% yield - will reduce cost by 16-20 percent.

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 interest rate assumption of 4% per year for our calculation. In the light of current practices, the 4% assumption is conservative, that is, it projects higher contribution requirements than would a 4 1/2% or 5% assumption, both of which are in current usage. ✓  
On the other hand, we have made our calculation without including the ultimate effect of continuing general increases in salary levels. As explained earlier, that fact tends to understate the actual cost that will emerge. The two factors are - in a very broad sense - compensating.

### 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 past service 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). We also made an adjustment for purchased service and estimated the current value of each employee's past contributions.

### Results of Valuation

The plan provides benefits on four different occurrences: retirement, death, disability, and withdrawal from employment. We calculated costs separately for each of these types of benefits. The cost factors are shown in Table 8. As previously indicated in our discussion of employee turnover, these cost factors do not include either State or employee contributions for employees with less than one year of service.

The costs are based on the following distribution of salaries and employees by plan. Excluded are employees with less than one year of service and employees who have not elected to be covered under the System.

	<u>Number</u>	<u>Total Salary</u>
Police	719	\$ 8,393,100
Part B	19,139	199,097,300
Part C	<u>10,682</u>	<u>107,334,800</u>
	30,540	\$314,825,200

Table 8

## Summary of Cost Factors as of December 31, 1972

Item	Retirement Benefits	Death Benefits	Disability Benefits	Withdrawal Benefits	Total
Current Service Cost --					
Police	\$ 1,430,300	\$ 63,700	\$ 14,000	\$ 95,300	\$ 1,603,300
Part B	15,995,800	219,800	2,397,600	2,875,200	21,488,400
Part C	12,178,800	277,200	1,753,600	1,343,400	15,553,000
Total	<u>\$ 29,604,900</u>	<u>\$ 560,700</u>	<u>\$ 4,165,200</u>	<u>\$ 4,313,900</u>	<u>\$ 38,644,700</u>
Less Employee Contributions					- 10,987,500
Normal Cost to State					<u>\$ 27,657,200</u>
Past Service Liability --					
Police	\$ 25,804,300	\$ 117,900	\$ 89,100	\$ ( 16,800)	\$ 25,994,500
Part B	277,617,900	2,723,500	31,203,400	17,583,900	329,128,700
Part C	236,119,300	1,938,100	17,762,100	( 784,400)	225,035,100
Total Active Employees	<u>\$539,541,500</u>	<u>\$4,779,500</u>	<u>\$49,054,600</u>	<u>\$16,782,700</u>	<u>\$610,158,300</u>
Vested Former Employees					6,650,300
Pensioners					334,119,700
Beneficiaries					4,521,700
Total Past Service Liability					<u>\$955,450,000</u>
Less Assets in Fund					66,369,900
Unfunded Past Service Liability					<u>\$889,080,100</u>

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The normal cost to the State is 8.8% (\$27.7 million) of the payroll of participating employees with at least one year of service. This is slightly higher than the 8.5% figure in 1969. However, the difference is entirely attributable to the shift from Part B to the higher cost Part C and the increase in the Social Security wage base from \$7,800 in 1970 to \$12,600 in 1974 (which decreases Part B employee contributions without decreasing the Part B benefits payable).

The past service liability for benefits earned before 1973 totals almost a billion dollars - \$955,450,000. About 35% - \$339,119,700 - of this represents the value of benefits to present pensioners. That sum of about a third-of-a-billion dollars is the amount required to meet lifetime payments to present pensioners, if one were to assume no additional contributions. The calculation of that lump-sum takes account of the monthly benefit amount of each pensioner, the life expectancy of each pensioner, based on sex and attained age, and investment yield of 4% on the sum before it is expended in pension payments. Three years ago the pensioner liability was 30% of the total. This shows that over time the pensioners become an increasing burden compared to the employees actively at work for the State - a key factor in the decision to adopt level funding.

As an offset to this liability, there are assets in the State Employees' Retirement Fund of \$66.4 million. The unfunded past service liability of the System is therefore \$889.1 million. (This does not represent a deficit in the usual sense -- it is a calculated amount used to establish the required level of pension fund contributions).



Scheduled Contribution

The scheduled State contribution for the 1974-75 fiscal year is \$39,697,600, calculated as follows:

	<u>Item</u>	<u>Amount</u>	<u>% of 12/31/72 Payroll</u>
(1)	Payroll, 12/31/72	\$314,825,200	--
(2)	Normal cost to State	27,657,200	8.78%
(3)	Unfunded past service liability	889,080,100	--
(4)	Payment on unfunded liability*	43,192,800	13.72
(5)	Total annual cost = (2) + (4)	70,850,000	22.50
(6)	Adjustment for future transfer of Part B members to Part C	799,000	0.25
(7)	Adjustment for amendment revising post-retirement cost-of-living calculation	3,750,000	<u>1.19</u>
(8)	Total annual cost, adjusted = (5)+(6)+(7)	75,399,000	23.95
(9)	Estimated payroll increase, 12/31/72 to Fiscal 1974-75	17%	--
(10)	Total annual cost, Fiscal 1974-75, = (8)x[1+(9)]	88,216,800	--
(11)	Scheduled portion of total cost to be contributed	45%	--
(12)	Scheduled contribution, Fiscal 1974-75 = (10)x(11)	39,697,600	--

\*40 years remaining from January 1, 1973. This schedule will have 40 years remaining until the full cost of the System is being contributed, at which time the period will be decreased annually.

Several items in the above schedule require explanatory comments.

As discussed in Section III on Employee Data, far more pensions are awarded under Part C than would be expected from the active employee data. In Fiscal 1972-73, it was decided to make advance allowance for transfers, since it was clear that they were going to continue to occur. In this way, the State will not be faced with an unexpected additional cost as members convert to Part C. We have calculated that the added cost of these transfers is \$1,198,500. This is the increase in State normal cost plus 40 year amortization payment if Part B employees transfer to Part C in sufficient numbers to make the non-police active group 60% Part C. The cost of potential future transfers is being added in three annual steps. Fiscal 1974-75 is the second year of the transition, so the cost included in line (6) is two-thirds of \$1,198,500, or \$799,000.

Public Act 534 of 1973 changed the frequency of cost-of-living increases to pensioners. The retirement law requires that this improvement be funded. Since there is no specific allowance for increases in the cost of living in the actuarial assumptions, the added cost of this amendment is not automatically reflected in the valuation. We have estimated that, with 3% or greater annual inflation, the level added cost of the change is \$3,750,000. This amount is included as line (7), above. (With regard to this act, we note that the Fiscal 1973-74 appropriation of \$350,000 was well below the required contribution. The calculations assume that an additional amount will be appropriated for that fiscal year.)

Our data included salaries as of December 31, 1972. Obviously, the covered payroll in Fiscal 1974-75 will be higher. Based on the changes in payroll that occurred from 1969 to 1972, we have estimated that the 1974-75 payroll will be 17% higher than the pay rates at the end of 1972. Since the costs are intended to remain level as a percent of payroll, we have applied this 17% increase to the costs as calculated as of December 31, 1972 in arriving at the 1974-75 contribution.

The 23.95 percent of payroll cost is very close to what we would have predicted based on our previous valuation. This indicates that our actuarial assumptions are, in total working out to be quite reasonable. We recommend that no changes be made at the present time in those assumptions.

#### Disability Experience

The Commission has been studying the incidence of disability pension awards, with an eye to possible recommendations for changes in the retirement law.

In 1972, there were 215 new disability pensions -- about 16% of all new pension awards in the year. Applying our assumed disability rates (which are conservative for most private employment), we would have expected only 75 new disabilities, which is less than half the actual number. This confirms what previous studies have indicated was likely; there are far more disability pensions than is customary in most pension plans.

Note that in spite of this we have not recommended a change in the assumed disability rates. This reflects our belief that the assumptions in total are reasonable. While we are clearly understating the disability cost, we do not suggest that changes be made in one or two assumptions under these circumstances. If at a future date a major overhaul of assumptions is indicated, we would then recommend that the disability rates be increased significantly. For now, however, we reiterate that there is sufficient margin in the other assumptions to compensate for the understatement of the disability cost.

#### Reimbursement Rate

Throughout the State, there are various programs which are billed at "full cost," rather than the fraction of cost that the State contributes to the Retirement Fund. The full cost figure is 23.95% of payroll, based on the actual valuation, as shown on line (8), above. However, this figure is overstated for such programs, since the unfunded liability is based on the actual assets (which include contributions at less than the full actuarial cost). We estimate that, if the State had been contributing the full cost, the actuarial cost would instead be 22.3% of payroll, and we recommend that outside programs be billed at this rate starting July 1, 1974. (Note that this is the same as the rate currently in effect.)

#### Overall Status of System

We believe that the State is progressing as expected on its plan to put the System on a sound financial basis, and look forward to assisting the Commission as it continues towards this goal.

MARTIN E. SEGAL COMPANY

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November 20, 1973

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CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM

Actuarial Valuation

This is to certify that we have prepared an actuarial valuation of the System as of December 31, 1972, taking into account the amendments adopted in the 1973 Session of the General Assembly.

The valuation was made with respect to the following participants as of the valuation date:

- a. 8,731 pensioners (including 173 beneficiaries of deceased pensioners and active employees)
- b. 33,455 active employees
- c. 232 inactive employees with vested right to immediate or deferred pension

The cost factors as of the valuation date and scheduled contribution for the Fiscal Year beginning July 1, 1974 are as follows:

1. Current service cost.....	\$ 38,644,700
2. Projected employee contributions.....	10,987,500
3. Normal cost to State (Item 1 less Item 2).....	27,657,200
4. Past service liability --	
a. Active employees.....	610,158,300
b. Vested former employees.....	6,650,300
c. Pensioners.....	334,119,700
d. Beneficiaries.....	4,521,700
e. Total.....	955,450,000
5. Assets in fund.....	66,369,900
6. Unfunded past service liability (Item 4e less Item 5).....	889,080,100
7. Payment on unfunded liability (Amortization of Item 6 over 40 years from January 1, 1973).....	43,192,800
8. Total annual cost (Item 3 plus Item 7).....	70,850,000

CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM

Actuarial Valuation.....-2-

9. Adjustment for future transfer of Part B members to Part C.....	\$ 799,000
10. Adjustment for amendment revising post-retirement cost-of-living calculation.....	3,750,000
11. Total annual cost, adjusted (Item 8 plus Item 9 plus Item 10).....	75,399,000
12. Estimated payroll increase from valuation date to contribution year.....	17%
13. Total annual cost in contribution year (Item 11 increased by Item 12 percentage).....	88,216,800
14. Scheduled portion of total cost to be paid in contribution year.....	45%
15. Scheduled contribution for Fiscal Year beginning July 1, 1974 (Item 13 times Item 14).....	39,697,600

The actuarial assumptions and funding method are as follows:

Mortality rates -- Group Annuity Table for 1951, projected to 1960, set back five years for females

Disability rates:

<u>Age</u>	<u>Rate (%)</u>
37	.1
42	.1
47	.2
52	.6
57	1.1
62	3.2

CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM

Actuarial Valuation.....-3-

Termination rates before retirement, all causes (no cost included for 2,915 active employees with less than one year of actual State service):

<u>Age</u>	<u>Rate (%)</u>	
	<u>Men</u>	<u>Women</u>
22	6.0	7.9
27	5.1	7.7
32	4.8	7.0
37	4.4	6.0
42	3.9	4.9
47	3.2	3.9
52	1.7	2.7
57	2.4	2.4
62	5.1	5.1

Salary scale:

<u>Age</u>	<u>Present salary as a % of age 65 salary</u>
22	48.4
27	56.8
32	65.1
37	73.4
42	81.8
47	89.4
52	95.0
57	98.7
62	100.0

Retirement age -- Men: The earlier of  
 (1) age 60 and completion of 30 years of service  
 (2) age 65 and completion of 10 years of service  
 Women: Age 60 and completion of 10 years of service  
 State police: Age 52 and completion of 25 years of service

Interest rate -- 4%

Funding method - Entry age normal cost

*Thomas D. Levy*  
 Thomas D. Levy, F.S.A.  
 Actuary