

*ACTUARIAL VALUATION*  
*CONNECTICUT STATE EMPLOYEES*  
*RETIREMENT SYSTEM*  
*AT JUNE 30, 1993*

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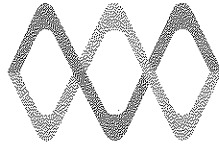
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November 16, 1993

State of Connecticut  
State Employees Retirement Commission  
55 Elm Street  
Hartford, CT 06106

Re: Connecticut State Employees Retirement System

Members of the Commission:

At your request, we have made an actuarial valuation of the Connecticut State Employees Retirement System (SERS) as of June 30, 1993. The results of the valuation are contained in the following report.

Section I contains an Executive Summary in which we present the principal results of this valuation. Details regarding SERS assets, liabilities, and costs are found in Sections II, III, and IV, respectively. Section V contains the disclosure information required by GASB #5. The Appendices contain information regarding SERS membership, an outline of the benefit provisions, a description of the actuarial methods and assumptions employed in this valuation, details on the Actuarial Surplus as of June 30, 1993, and Entry Age Normal Results.

As developed in Section IV, the actuarially determined contribution for the fiscal year beginning July 1, 1994, including Federal reimbursements, is \$535,324,809. In accordance with the provisions of a collectively negotiated agreement (SEBAC III), \$173,318,883 of this amount will not be paid.

*362,006,157*

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November 16, 1993

Re: Connecticut State Employees Retirement System

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In our opinion, this report fairly presents the financial and actuarial position of the Connecticut State Employees Retirement System at June 30, 1993. On the basis of the foregoing, we hereby certify that, to the best of our knowledge, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices set forth by the American Academy of Actuaries.

Respectfully submitted,

MILLIMAN & ROBERTSON, INC.



Althea A. Schwartz, F.S.A.  
Consulting Actuary

SECTION I

*EXECUTIVE SUMMARY*

## **SECTION I**

### **EXECUTIVE SUMMARY**

#### **PURPOSE OF REPORT**

This report presents the results of the June 30, 1993 actuarial valuation of the Connecticut State Employees Retirement System (SERS). The primary purposes of performing the valuation are as follows:

- to determine the contributions to be paid by the Employer for Fiscal Year beginning July 1, 1994
- to disclose asset and liability measures as of June 30, 1993, and
- to analyze and report on trends in SERS contributions, assets, and liabilities over the past several years.

#### **ORGANIZATION OF THE EXECUTIVE SUMMARY**

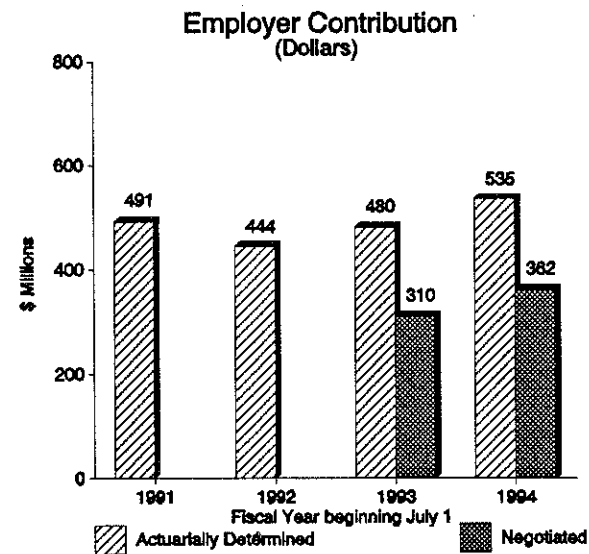
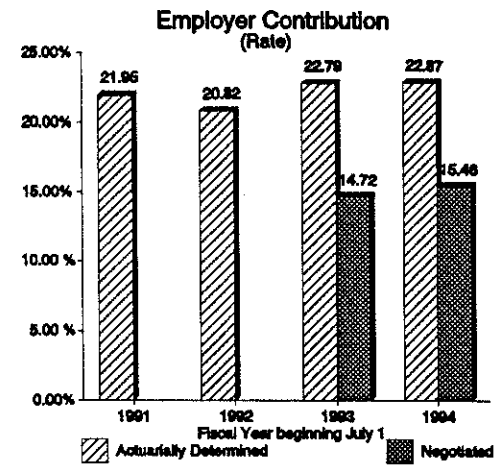
- ▶ **Major Findings...** shows graphically, key results for each of the last four actuarial valuations.
- ▶ **SERS Experience July 1, 1992 to June 30, 1993...** highlights the major events influencing this valuation and summarizes the finds of the gain/(loss) analysis.
- ▶ **Experience Study...** contains a brief summary of the results of the comprehensive study of SERS experience which was the basis for the change in actuarial assumptions.
- ▶ **SERS Contribution...** shows the reconciliation of the contribution from last year to this year.
- ▶ **Principal Results...** contains a summary of comparative statistics for the June 30, 1992 and the June 30, 1993 valuations.

*Executive Summary*

**MAJOR FINDINGS**

The major findings of the 1993 valuation are summarized and compared in the following charts:

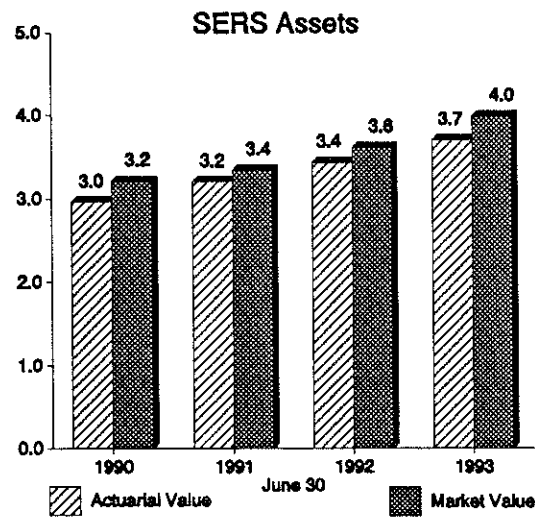
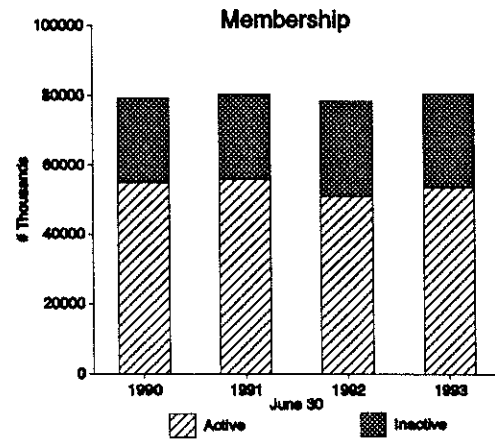
*In the absence of the SEBAC agreements, the Employer's contribution rate has been relatively level. For 1993 and 1994, the actuarially determined contribution rate is shown along with the rate reflecting negotiated changes (see page 5). The actuarially determined rate is higher for 1993 and 1994 due primarily to contribution shortfalls and adverse experience.*



*The dollar amount of the Employer's contribution equals the contribution rate shown above times the projected payroll. For 1994, the actuarially determined dollar amount went up due to the contribution shortfalls, adverse experience and growth in payroll resulting from a 5% growth in active membership. The negotiated contribution amount represents the normal cost payment plus a fixed past service payment.*

*Executive Summary*

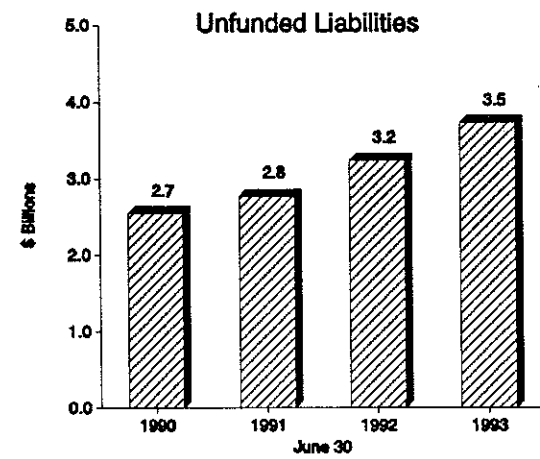
*SERS membership is now above pre-ERIP levels. The active membership is slightly lower than 1990 levels; however, the inactive membership is significantly higher due to the two early retirement incentive programs.*



*The SERS's assets have grown as expected in recent years due to investment performance and positive cashflow.*



*Executive Summary*



*Unfunded actuarial liabilities have generally increased each year for many reasons. Contributing factors include liability losses, early retirement incentives, and contribution shortfalls.*

## *Executive Summary*

### *SERS EXPERIENCE JULY 1, 1992 TO JUNE 30, 1993*

Overall, SERS experience was unfavorable during the valuation period. The normal cost as a percent of pay increased from 8.96% to 9.45%. Since the pay base also increased, the normal cost dollar level went up 17%, from \$189 million for FY93-94 to \$221 million for FY94-95. The unfunded actuarial liability increased again this year due to the contribution shortfall and adverse experience. Favorable investment experience offset to a small extent some of the liability losses. Finally, SERS membership as of June 30, 1993 was at a record high level of 80,596 members.

The following circumstances contributed to the results shown in this report:

- ▶ Two collective bargaining agreements negotiated between the State of Connecticut and the State Employees Bargaining Agent Coalition (SEBAC II and III) included several provisions with funding implications:
  - The negotiated past service contribution for FY 1994-95 represents a shortfall of \$173.3 million to SERS.
  - The costs associated with the two recent retirement incentive programs are amortized over a 40 year period starting with FY94-95. This annual payment is \$10.2 million.
- ▶ The 1991-1992 Early Retirement Incentive Program continues to impact the System:
  - Salaries grew much faster than expected, perhaps due to promotions as a result of positions vacated by retiring employees.
  - During the past year, fewer members retired than expected. However, the active membership is approaching pre-ERIP levels as new employees are hired to fill vacated positions.
- ▶ The investment performance was strong over the past year. The actual return was 11.68% on a market value basis and 8.82% on a smoothed actuarial basis compared to the assumed rate of 8.5%.
- ▶ An experience study was performed in order to determine the actuarial assumptions used in this and subsequent valuations. The study is discussed in more detail later in this executive summary.

## Executive Summary

### Comparison of Results

The following pages detail the impact of the factors discussed above on the increase in SERS Assets and Unfunded Liabilities.

#### *Assets*

Between June 30, 1992 and June 30, 1993, the actuarial value of assets (measured on a five year smoothing basis) increased by \$270.3 million. This change was attributable to the following:

	<u>(\$million)</u>
Actuarial Value of Assets, 7/1/92	\$3,425.9
Change in Assets	
• Employer and Member Contribution	323.8
• Benefits and Expenses	(354.2)
• Expected Total Return on Investments	289.9
• Investment Gain/(Loss)	<u>10.8</u>
Total Changes	270.3
Actuarial Value of Assets, 7/1/93	\$3,696.2

The expected total return on investments shown above is based on an assumed rate of return of 8.5%. However, the effective investment return on the actuarial value of assets was 8.82%, resulting in an actuarial gain of \$10.8 million. More details on SERS assets are presented in Section II of this report.

*Executive Summary*

*Unfunded Liabilities*

The unfunded actuarial liability increased during the past year. Theoretically, if future experience is exactly as assumed, if the Employer makes the actuarially determined contribution, and if there are no benefit improvements, then the unfunded actuarial liability decreases each year. This is because the unfunded actuarial liability is scheduled to be amortized on a level dollar basis over a decreasing number of years. In the absence of the SEBAC III agreement, the amortization period is 38 years for the Fiscal Year beginning July 1, 1994. The following table shows the development of the unfunded actuarial liability from 1992 to 1993.

	<i>(\$ million)</i>
Unfunded Actuarial Liability, 7/1/92	\$3,242.8
Change in Liability	
• Interest and Expected Benefit Accruals	511.1
• Expected Contribution with Interest for FY 92-93	(502.1)
• Contribution Shortfall with Interest	165.9
• Asset Gains	(10.8)
• Liability Losses	319.9
• Impact of Assumption Changes	<u>(233.2)</u>
Total Changes	250.8
Unfunded Actuarial Liability, 7/1/93	3,493.6

The liability loss of \$319.9 million is attributable to the difference between actual and expected experience with respect to number of retirements, employment terminations, disabilities, deaths, salary increases, and new employees. We have performed a formal experience review to determine the particular amount each component contributed to the total liability loss. The results are summarized in broad categories below and explained in more detail on the following pages:

<u>Source of Gain/(Loss)</u>	<u>Gain/(Loss)</u>
Active Decrements	\$ 16,202,173
Other Active Sources	(160,766,856)
Inactive Sources	<u>(175,376,216)</u>
Total Gain/(Loss)	(319,940,899)

## *Executive Summary*

### *Components of the Liability Loss*

#### *Active Decrements*

The System experienced a net gain of \$16.2 million from active decrements. The gains and losses that fall under this heading represent the impact on the liability of members who were active employees last year but are not this year. These members fall into four categories - terminations, retirements, deaths, and disabilities. The majority of the gain is attributable to the following:

- Even though fewer members terminated employment than expected, a number of terminating Tier I members withdrew their employee contributions and forfeited their state provided benefit.
- Fewer members retired than expected (most likely due to the recent ERIP). The adjustment to member benefits for early retirement understates the true cost of the early receipt of benefits, so members who retire early receive subsidized benefits. Therefore, when we expect that members will retire early and they do not, there is a gain to the System.

#### *Other Active Sources of Gain/Loss*

The loss from other active sources was \$160.8 million. The following two events accounted for most of this loss:

- There was a sizable loss due to increases in projected benefits for members who were active last year and also this year. Most of the change in benefit level for these continuing active members was a result of salary increases. For this group of 47,592 members the average salary went up 10.6% from last year to this year. The average salary increase for the Tier I members was 9.5%; for Tier II members, it was 11.8%. This results in a significant salary loss since our actuarial assumptions anticipate salary growth at much more modest levels.
- The System also experienced a loss because there were 5,923 new active members. Since our valuation does not assume there will be any new employees, new hires always result in a liability loss. Over 300 of the new members were in fact former members who have returned to state service.

## *Executive Summary*

### *Inactive Sources of Gain/Loss*

The loss to the System from inactive sources was \$175.4 million. Most of the inactive loss is attributable to the following two events:

- Losses occurred because of benefit increases for retirees who did not have a change in status: that is, they were retirees both a year ago and today. We believe that the increase in benefits is largely the result of the Retirement Division's success in reducing the time lag between retirement and the finalization of the benefit amount. Since the final benefit amount is larger than the preliminary amount, the finalization results in a loss.
- There were almost 400 new retirees who were not in our data for the prior valuation as either actives or inactive. These members were most likely out on Workers Compensation last year and have now retired from state service.

**EXPERIENCE STUDY**

By statute, the actuarial assumptions are based on a study of SERS experience to be conducted at least once every five years. This summer such a study was performed. We reviewed SERS experience with respect to:

- Active decrements: termination, death, disability and rate of retirement;
- Salary growth;
- Inactive mortality; and
- Investment performance.

The study period was generally July 1, 1988 through June 30, 1992. Investment performance was analyzed over a much longer period. The purpose of the study was to provide a more up-to-date basis for our projections. A separate report on the experience investigation has been prepared.

The results of the study are briefly summarized below:

- Actuarial assumptions with respect to active decrements and inactive mortality were fine tuned.
- The previous salary growth assumption was on an age related schedule (10.2% at age 20 grading down to 6% at age 45). The experience review indicated that service was a better indicator of salary increases than age. The new salary growth assumption varies with years of service: 14.00% when first hired, grading down to 3.25% after 25 years of service.
- The interest rate used to discount plan liabilities remains at 8.5%.

The overall impact of the change in actuarial assumptions is to increase the Normal Cost by \$5.2 million and to decrease the amortization payment by \$21.7 million, for a net contribution decrease of \$16.5 million.

## *Executive Summary*

### **SERS CONTRIBUTIONS**

SERS contributions projected to the Fiscal Year beginning July 1, 1994 are \$362.0 million. Below we show the reconciliation of the contribution from the prior year's actuarially determined amount:

	<i>(\$ Million)</i>
Contribution Actuarially Determined for FY 1993-94	\$480.3
• 1993-94 Contribution Shortfall	15.1
• Increase due to Payroll Growth and Changes in Membership Profile	27.6
• Asset Gains	(1.0)
• Liability Losses	29.8
• Change in Assumptions	(16.5)
Contribution before Negotiated Adjustments	535.3
• Negotiated Adjustment to Past Service Cost Payment in SEBAC III	(173.3)
Contribution for FY 1994-95	362.0

### Actuarial Surplus

There is no actuarial surplus as defined in Section 5-162h(b) of the Statute.

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In concluding this executive summary, we present on the following page comparative statistics and actuarial information on both the June 30, 1993 and June 30, 1992 valuations.



*Executive Summary*

**CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM  
PRINCIPAL RESULTS**

	<i>June 30, 1992</i>	<i>June 30, 1993</i>	<i>% Chg</i>
<b><i>SERS Membership</i></b>			
1. Active Membership			
- Number of Participants	51,133	53,537	+4.70%
- Payroll	\$1,931,381,254	\$2,144,793,466	+11.05
- Average Pay	\$37,772	\$40,062	+6.06
2. Inactive Membership			
- Number of Vested			
Deferred Members	693	660	-4.76
- Number of Retired Members	26,572	26,399	-0.65
- Annual Retired Members			
Benefits	\$334,033,224	\$355,144,727	+6.32
- Average Annual Retired			
Member Benefit	\$12,571	\$13,453	+7.02
<b><i>Assets and Liabilities</i></b>			
1. Assets			
- Market Value	3,605,993,231	3,994,950,545	+10.79
- Actuarial Value	3,425,886,181	3,696,176,885	+7.89
2. Liabilities			
- Retired and Deferred Vested	3,622,832,720	3,908,685,002	+7.89
- Active Members	3,045,852,614	3,281,055,492	+7.72
- Total Liability	6,668,685,334	7,189,740,494	+7.81
- Unfunded Liability	3,242,799,153	3,493,563,609	+7.73
<b><i>Employer Contributions</i></b>			
1. Contributions as a Percent of			
Projected Payroll			
- Normal Cost	8.96%	9.45%	-5.19%
- Unfunded Liability	5.76% <sup>(a)</sup>	6.01% <sup>(b)</sup>	+4.34
- Total Contribution %	14.72%	15.46%	+5.03
2. Contribution Dollars Projected			
to the following FY			
- Normal Cost	\$188,906,351	\$221,273,796	+17.13%
- Unfunded Liability	121,300,000 <sup>(a)</sup>	140,732,130 <sup>(b)</sup>	+16.02
- Total Employer Contribution	310,206,351	362,005,926	+16.70

(a) Reflects SEBAC III agreement to fund \$121,300,000 in Past Service Cost.

(b) Reflects SEBAC III agreement to fund \$130,500,000 in Past Service Cost and \$10,232,130 payment for ERIP.

**SECTION II**

***SERS ASSETS***

**SECTION II**  
**SERS ASSETS**

In this section we present the values assigned to the assets held by SERS. These assets are valued on two different bases: the actuarial value and the market value.

*Actuarial Value of Assets*

For purposes of determining ongoing costs, the recognition of gains and losses are spread over five years. The resulting value is called the actuarial value of assets and is further adjusted as necessary so that the final actuarial value is within 20% (plus or minus) of the market value of assets.

*Market Value of Assets*

For certain accounting statement purposes, SERS assets are valued at current market rates. These values represent the "snapshot" or "cash-out" value of SERS assets as of the valuation date. In addition, the market value of assets provides a reference point to compare to current accrued liabilities.

The following tables present information regarding the actuarial and market values of SERS assets as of June 30, 1993.

<u><i>Table</i></u>	<u><i>Contents</i></u>
II-1	Market Value - Summary of Fund Transactions
II-2	Market Value - Breakdown on June 30, 1993
II-3	Actuarial Value of Assets
II-4	Development of Asset Gain/Loss
II-5	Historical Summary (Actuarial and Market)

Table II-1

**MARKET VALUE OF ASSETS  
SUMMARY OF FUND TRANSACTIONS**

Market Value as of July 1, 1992		\$3,605,993,231
<b><u>Contributions</u></b>		
State	\$250,763,428	
Federal	40,064,257	
Employee	<u>32,916,991</u>	
		323,744,676
<b><u>Investment Income</u></b>		
Interest and Dividends	\$158,419,750	
Realized Gains	24,188,054	
Change in Unrealized Gains	<u>236,815,252</u>	
		419,423,056
<b><u>Disbursements</u></b>		
Benefit Payments	\$351,858,430	
Employee Refunds	2,190,261	
Expenses	<u>161,727</u>	
		354,210,418
Market Value as of June 30, 1993		3,994,950,545
Rate of Return as of June 30, 1993		11.68%
Rate of Return as of June 30, 1992		<u>8.00%</u>
Change		Up 3.68%

*Table II-2*

**MARKET VALUE OF ASSETS  
BREAKDOWN ON JUNE 30, 1993**

The following is the Market Value of the State Employees Retirement Fund assets as reported to us by the Retirement Division:

	<u>Amount</u>	<u>% of Total</u>
Cash	\$ (5,761,495)	(0.14)%
Accrued Interest	0	0.00%
Investments		
• Cash Reserve Account	\$ 150,108,434	3.76%
• Fixed Income	916,652,914	22.95%
• Equity	1,333,648,727	33.38%
• Mortgage	10,070,764	0.25%
• Real Estate	394,334,080	9.87%
• International Funds	945,957,196	23.67%
• Commercial Mortgage Fund	193,599,432	4.85%
• Venture Capital Fund	48,495,846	1.21%
• Connecticut Programs Fund	<u>7,844,647</u>	<u>0.20%</u>
	\$4,000,712,040	100.14%
Total Market Value of Assets as of June 30, 1993	\$3,994,950,545	100.00%

*Table II-3*

*ACTUARIAL VALUE OF ASSETS*

<i>Ending</i>	<i>Realized Gains/Losses</i>	<i>Change in Unrealized Gains/Losses</i>	<i>Total Gains/Losses</i>
6-30-93	\$24,188,054	\$236,815,252	\$261,003,306
6-30-92	42,882,763	72,441,760	115,324,523
6-30-91	16,110,453	(45,666,489)	(29,556,036)
6-30-90	17,558,291	145,435,286	162,993,577

Actuarial Value of Assets as of June 30, 1993 is derived as follows:

1.	Market Value of Assets as of June 30, 1993:	\$3,994,950,545
2.	Five-Year Gains and Losses Not Yet Recognized:	
	80% of FY 93	\$208,802,645
	60% of FY 92	69,194,714
	40% of FY 91	(11,822,414)
	20% of FY 90	<u>32,598,715</u>
		298,773,660
3.	20% of (1)	798,990,109
4.	Actuarial Value of Assets as of June 30, 1993 (1)-(2), within (1) +/- (3)	3,696,176,885
	Rate of Return on Actuarial Value of Assets as of June 30, 1993	8.82%
	Rate of Return on Actuarial Value of Assets as of June 30, 1992	<u>7.22%</u>
	Change	Up 1.60%

*Table II-4*

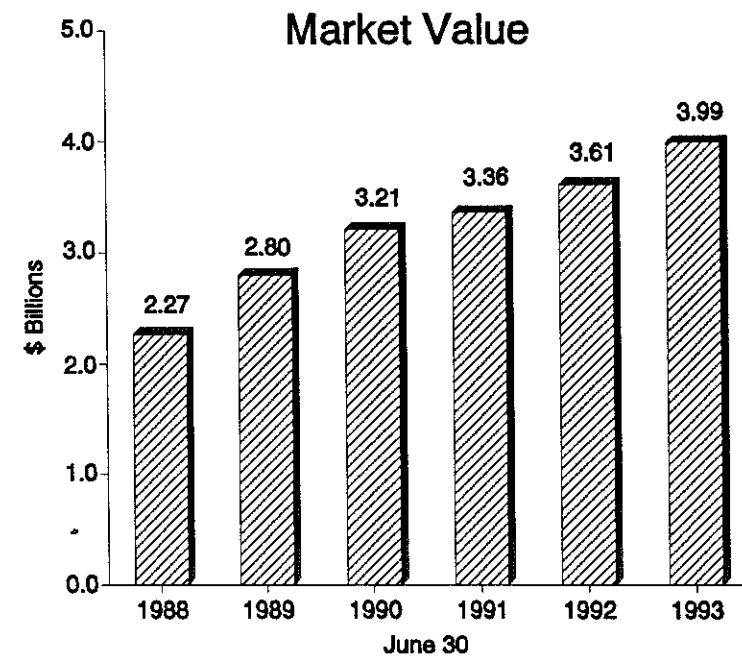
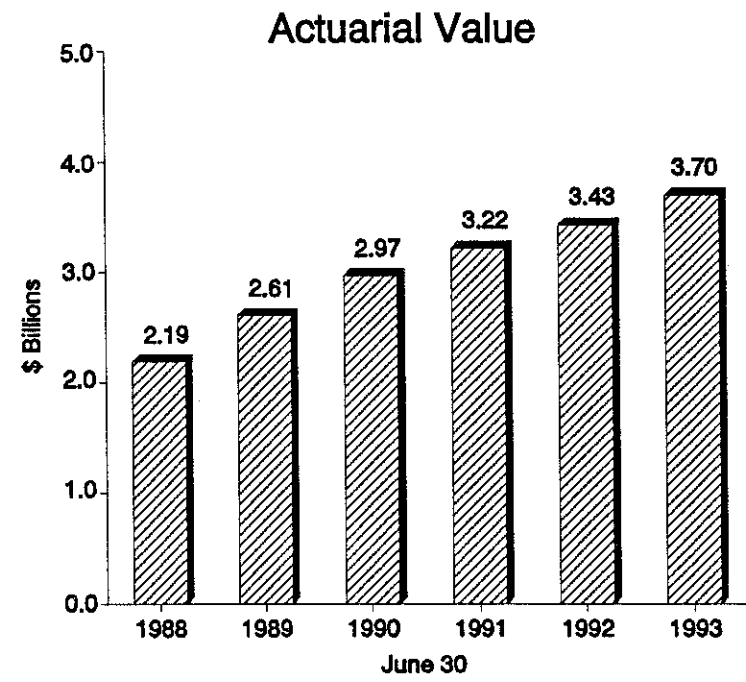
*DEVELOPMENT OF ASSET GAIN/LOSS*

	<i>Market Value of Assets</i>	<i>Actuarial Value of Assets</i>
1. Value of Assets as of July 1, 1992	\$3,605,993,231	\$3,425,886,181
2. Contributions	323,744,676	323,744,676
3. Benefit Payments and Expenses paid during 1992-93	354,210,419	354,210,419
4. Expected Investment Income at 8½% on (1) through (3)	305,241,034	289,931,935
5. Actual Investment Income	419,423,057	300,756,447
6. Expected Value of Assets as of June 30, 1993: (1)+(2)-(3)+(4)	3,880,768,522	3,685,352,373
7. Actual Value of Assets as of June 30, 1993: (1)+(2)-(3)+(5)	3,994,950,545	3,696,176,885
8. Asset Gain/(Loss): (7)-(6)	114,182,023	10,824,512
9. Approximate Effective Yield Represented by Actual Investment Income	11.68%	8.82%

**Note:** The rate shown here is a rough estimate of the return on plan assets used in the valuation. It assumes all transactions occur in the middle of the period. This rate may therefore not be the same as the yield earned on the plan's invested assets.

Table II-5

HISTORICAL SUMMARY OF SYSTEM ASSETS





**SECTION III**

**SERS LIABILITIES**

**SECTION III**

**SERS LIABILITIES**

In this section we present values assigned to the liabilities of SERS and then compare these liabilities to SERS assets.

The actuarial funding method used to determine SERS costs is based on the Projected Unit Credit method. This method is also used to determine the Projected Benefit Obligation (PBO) required by the Government Accounting Standards (GASB). A more detailed description of this method can be found in Appendix C.

The tables in this section present SERS liabilities as follows:

<u>Table</u>	<u>Contents</u>
III-1	SERS Liabilities
III-2	Active Liabilities by Tier and Plan
III-3	Historical Summary of SERS Liabilities

*Table III-1*

*SERS LIABILITIES*

	<u>June 30, 1992</u>	<u>June 30, 1993</u>
1. Liability for Retired Members	\$3,586,975,212	\$3,874,194,605
2. Liability for Deferred Vested Members	<u>35,857,508</u>	<u>34,490,397</u>
3. Total Inactive Liability	3,622,832,720	3,908,685,002
4. Active Members Actuarial Liability	<u>3,045,852,614</u>	<u>3,281,055,492</u>
5. Total SERS Actuarial Liability	<u>6,668,685,334</u>	<u>7,189,740,494</u>
6. Actuarial Value of Assets	3,425,886,181	3,696,176,885
7. Total SERS Unfunded Actuarial Liability	<u>3,242,799,153</u>	<u>3,493,563,609</u>

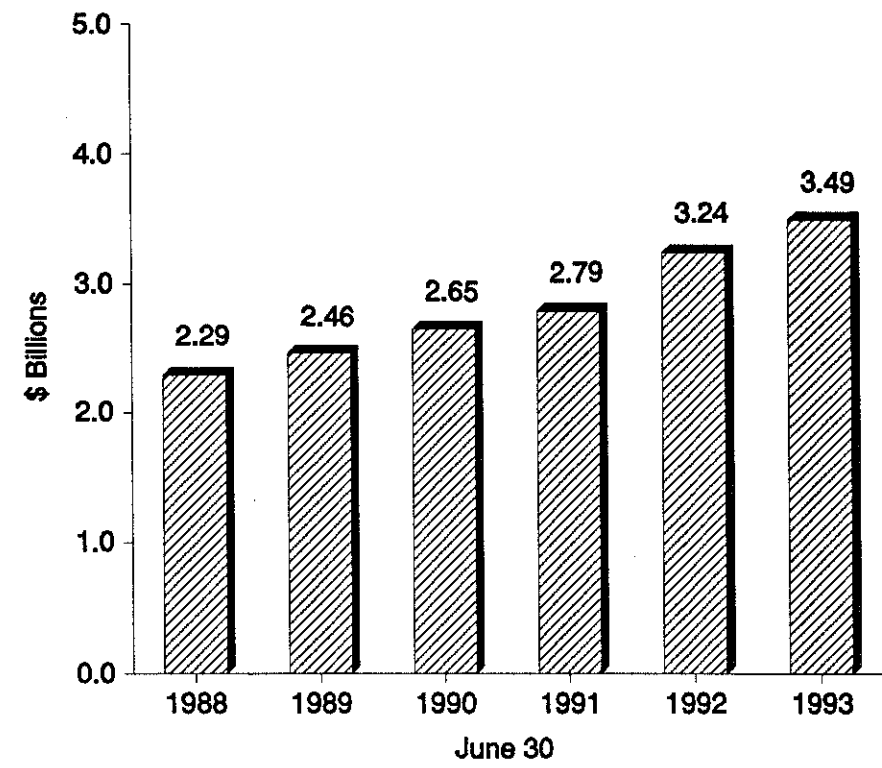
*Table III-2*

*ACTIVE LIABILITIES BY TIER AND PLAN*

	<i>ACTUARIAL LIABILITY</i>	
	<i>June 30, 1992</i>	<i>June 30, 1993</i>
<hr/> <b><i>TIER I</i></b> <hr/>		
Hazardous Duty	\$ 404,751,942	\$ 496,581,970
Plan B	1,997,196,858	2,054,284,754
Plan C	<u>165,376,786</u>	<u>178,432,076</u>
<i>Total</i>	2,567,325,586	2,729,298,800
<hr/> <b><i>TIER II</i></b> <hr/>		
Hazardous Duty	129,958,577	218,645,203
All Others	<u>348,568,451</u>	<u>333,111,489</u>
<i>Total</i>	478,527,028	551,756,692
<hr/> <b><i>GRAND TOTAL</i></b> <hr/>	3,045,852,614	3,281,055,492

*Table III-3*

*HISTORICAL SUMMARY OF  
UNFUNDED PAST SERVICE LIABILITIES*



SECTION IV

*SERS CONTRIBUTIONS*

*SECTION IV*

*SERS CONTRIBUTIONS*

In this section we present the contributions required of the Employer in the upcoming fiscal year. Due to the timing of both the actuarial valuation process and the Employer's budget cycle, valuation results each June 30 must be projected to the following fiscal year in order to determine the Employer's required contribution.

In the following pages we present information on SERS contributions as follows:

<u>Table</u>	<u>Contents</u>
IV-1	Projected Unit Credit Normal Cost Projections
IV-2	Projected Unit Credit Unfunded Liability
IV-3	Projected Unit Credit Total Costs
IV-4	Comparison of Normal Cost Rates

Table IV-1

PROJECTED UNIT CREDIT NORMAL COST PROJECTIONS

Plan	7-1-93 Normal Cost	7-1-93 Earnings	Normal Cost %	7-1-94 Projected Earnings	7-1-94 Normal Cost
<b><u>TIER I</u></b>					
1. Hazardous Duty	\$ 26,538,037	\$ 117,281,337	22.6277%	\$ 121,268,902	\$ 27,440,363
2. Plan B	88,168,905	920,122,919	9.5823	951,407,098	91,166,682
3. Plan C	<u>6,406,033</u>	<u>67,601,671</u>	9.4761	<u>69,900,128</u>	<u>6,623,806</u>
<b>Total</b>	121,112,975	1,105,005,927		1,142,576,128	125,230,851
<b><u>TIER II</u></b>					
1. Hazardous Duty	37,158,290	203,271,183	18.2802%	229,403,727	41,935,460
2. All Others	<u>46,707,234</u>	<u>836,516,356</u>	5.5835	<u>969,060,359</u>	<u>54,107,485</u>
<b>Total</b>	83,865,524	1,039,787,539		1,198,464,086	96,042,945
SERS Normal Cost Projected to 7/1/94: \$221,273,796					
SERS Projected Earnings at 7/1/94: \$2,341,040,214      9.1477%					
SERS Projected Normal Cost % at 7/1/94: 9.4519%					



*Table IV-2*

***PROJECTED UNIT CREDIT UNFUNDED LIABILITY***

1.	Unfunded Actuarial Liability 7-1-93	\$3,493,563,609
2.	One Year's Interest at 8½%	296,952,907
3.	Employer Normal Cost (FY 1993-94)	188,906,351
4.	Employee Normal Cost (Expected Employee Contributions)	33,977,210
5.	Interest on Total Normal Cost [(3) + (4)]	8,555,385
6.	State Payments	(270,142,094)
7.	Expected Federal Payments	(40,064,257)
8.	Expected Employee Contributions	(33,977,210)
9.	Interest on Total Contributions [(6) + (7) + (8)]	<u>(13,211,486)</u>
10.	Unfunded Actuarial Liability 7-1-94	3,664,560,415
11.	Liability for Early Retirement Incentive Programs	120,215,515
12.	Net Unfunded Actuarial Liability [(10) - (11)]	3,544,344,900

Table IV-3

PROJECTED UNIT CREDIT TOTAL COSTS

1.	Net Unfunded Actuarial Liability 7-1-94	\$3,544,344,900
2.	Amortization Period	38 Years
3.	Amortization Payment	303,818,883
4.	Past Service Cost for Early Retirement Incentive Programs	10,232,130
5.	Employer Normal Cost	221,273,796
6.	Total Employer Cost for Fiscal Year beginning 7-1-94: (3)+(4)+(5)	535,324,809
7.	Projected Payroll	2,341,040,214
8.	Total Employer Cost %: (6)/(7)	22.87%
9.	Amortization Payment to be paid per SEBAC Agreement	130,500,000
10.	Total Contribution per SEBAC Agreement: (4)+(5)+(9)	362,005,926
11.	Negotiated Employer Cost %: (10)/(7)	15.46%

*Table IV-4*

*COMPARISON OF NORMAL COST RATES*

	<i>VALUATION DATE</i>	
	<i>July 1, 1992</i>	<i>July 1, 1993</i>
<hr/> <i>TIER I</i> <hr/>		
Hazardous Duty	18.36%	22.63%
Plan B	10.46	9.58
Plan C	9.53	9.48
<i>Total</i>	11.26%	10.96%
<hr/> <i>TIER II</i> <hr/>		
Hazardous Duty	10.94%	18.28%
All Others	5.66	5.58
<i>Total</i>	6.63%	8.07%
<hr/> <i>GRAND TOTAL</i> <hr/>	8.96%	9.45%

**SECTION V**

***GASB #5 ACCOUNTING INFORMATION***

**SECTION V**

**GASB #5 INFORMATION**

Government Accounting Standards Board Statement No. 5, "Disclosure of Pension Information by Public Employee Retirement Systems and State and Local Government Employers", requires that SERS disclose certain information on an annual basis regarding the funding of SERS. In this section we present this information. Additional information regarding SERS Assets, a Summary of Plan Provisions and the Actuarial Method and Assumptions can be found in Section II and Appendices B and C, respectively.

The following tables present the information required for compliance with GASB #5:

<u>Table</u>	<u>Contents</u>
V-1	Summary of Membership
V-2	Standardized Measures
V-3	Historical Contribution Information
V-4	Historical Analysis of Funding Progress

**Background Information**

The Connecticut State Employee Retirement System was created by the State of Connecticut to provide defined benefit pensions to its employees. SERS is described in Chapter 66, State Employees Retirement Act, in Sections 5-152 to 5-192 to Title 5 of the General Statutes of Connecticut.

The Employer's funding policy has been to contribute each year an amount equal to the normal cost plus an amount representing amortization of the unfunded actuarial accrued liability over thirty years (ending June 30, 2022), less amounts reimbursed by the Federal Government. Per SEBAC Agreement, as of June 30, 1992, the unfunded actuarial accrued liability will be amortized over forty years (ending June 30, 2032). The actuarial assumptions used to calculate the figures reported herein are the same as those used to calculate the contribution level.

*Table V-1*

**SUMMARY OF MEMBERSHIP**

	<u>June 30, 1992</u>	<u>June 30, 1993</u>
Current employees:		
Vested		
Hazardous Duty	1,927	3,558
Plan B	16,686	17,354
Plan C	1,457	1,464
Tier II	1,020	1,835
Not yet vested:		
Hazardous Duty	4,563	3,481
Plan B	2,261	1,299
Plan C	152	95
Tier II	<u>23,067</u>	<u>24,451</u>
Total current employees	51,133	53,537
Retirees and beneficiaries currently receiving benefits:	26,572	26,399
Terminated employees entitled to benefits but not yet receiving them:	693	660
Total Members	<u>78,398</u>	<u>80,596</u>

6490  
 18547  
 1,609  
 24,087

7039  
 18653

549  
 1,559  
 26,286

*Table V-2*

**STANDARDIZED MEASURES**

	<u>June 30, 1992</u>	<u>June 30, 1993</u>
<i>Pension Benefit Obligation</i>		
Retired Members	\$3,586,975,212	\$3,874,194,605
Terminated Vested Members	35,857,508	34,490,397
Active Members		
▶ Accumulated employee contributions with interest	270,231,467	307,701,362
▶ Employer-financed vested portion	2,253,664,894	2,566,474,394
▶ Employer-financed non-vested portion	<u>521,956,253</u>	<u>406,879,736</u>
▶ Total	3,045,852,614	3,281,055,492
Total SERS Obligation	<u>6,668,685,334</u>	<u>7,189,740,494</u>
<i>Market Value of Assets</i>	<u>3,605,993,231</u>	<u>3,194,789,949</u>
<i>Unfunded Pension Benefit Obligation</i>	3,062,692,103	3,994,950,545

Table V-3

## HISTORICAL CONTRIBUTION INFORMATION

	<u>FISCAL YEAR</u> <u>1989-1990</u>	<u>FISCAL YEAR</u> <u>1990-1991</u>	<u>FISCAL YEAR</u> <u>1991-1992</u>	<u>FISCAL YEAR</u> <u>1992-1993</u>	<u>FISCAL YEAR</u> <u>1993-1994</u>	<u>FISCAL YEAR</u> <u>1994-1995</u>
Employer Normal Cost	\$137,531,541	\$179,549,626	\$180,005,022	\$191,019,008	\$188,906,351	\$221,273,796
Past Service Cost	258,836,930	218,467,282	251,231,824 <sup>(b)</sup>	256,780,845 <sup>(b)</sup>	121,300,000 <sup>(c)</sup>	140,732,130 <sup>(c)</sup>
Total Employer Cost	396,368,471	398,016,908 <sup>(a)</sup>	431,236,846	447,799,853	310,206,351	362,005,926
Total Employer Cost as a percent of payroll	23.07%	20.77%	21.95%	20.70%	14.72%	15.46%
Employee Contributions	\$ 29,198,019	\$ 33,809,953	33,169,806	32,916,991	N/A	N/A
Employer Contributions	288,368,471	263,818,607	250,324,285	290,827,685	N/A	N/A
Total Contributions	\$317,566,490	\$297,628,560	283,494,091	323,744,676	N/A	N/A

(a) Includes an additional contribution of \$10,241,000 (\$3,381,000 Normal Cost + \$6,860,000 Past Service Cost) needed to fund benefit improvements resulting from negotiations with the Employer Employees Bargaining Agent Coalition.

(b) Includes \$11,858,652 payment of Retirement Incentive Bonus.

(c) Per SEBAC Agreement.

(d) Includes 130,500,000 as required by SEBAC and 10,232,130 for Early Retirement Incentive Programs.



Table V-4

## HISTORICAL ANALYSIS OF FUNDING PROGRESS

(millions)

FISCAL YEAR	(1) NET ASSETS AVAILABLE FOR BENEFITS*	(2) PENSION BENEFIT OBLIGATION	(3) PERCENTAGE FUNDED (1)/(2)	(4) UNFUNDED OBLIGATION (2)-(1)	(5) ANNUAL COVERED PAYROLL	(6) UNFUNDED OBLIGATION AS A % OF PAY (4)/(5)
1988 - 1989	2,273.2	4,550.7	50.0%	2,277.5	1,583.0	143.9%
1989 - 1990	2,798.9	5,071.5	55.2%	2,272.6	1,759.5	129.2%
1990 - 1991	3,212.8	5,624.7	57.1%	2,411.9	1,802.8	133.8%
1991 - 1992	3,361.6	6,009.7	55.9%	2,648.1	1,983.6	133.5%
1992 - 1993	3,606.0	6,668.7	54.1%	3,062.7	1,931.4	158.6%
1993 - 1994	3,995.0	7,189.7	55.6%	3,194.8	2,144.8	149.0%

\* Market Value

*APPENDIX A*

*SUMMARY STATISTICS ON SERS MEMBERSHIP*

*APPENDIX A*

*SUMMARY STATISTICS ON SERS MEMBERSHIP*

<i>Table</i>	<i>Contents</i>
A-1	Summary of Active Membership Data
A-2	Detail of Active Membership Data by Plan
A-3	Summary of Inactive Membership Data
A-4	Analysis by Age and Service - Tier I - Hazardous Duty
A-5	Analysis by Age and Service - Tier I - Plan B
A-6	Analysis by Age and Service - Tier I - Plan C
A-7	Analysis by Age and Service - Tier II - Hazardous Duty
A-8	Analysis by Age and Service - Tier II - All Others
A-9	Analysis of Retired Members by Retirement Year
A-10	Analysis of Retired Members by Current Age

*Table A-1*

**SUMMARY OF ACTIVE MEMBERSHIP DATA**

We received data on a total of 53,691 members, including employees of State Aided Institutions. Of the active records submitted to us, 154 (.26%) were rejected due to missing or invalid dates of birth and/or hire. Cost calculations were not revised to reflect these records. The following analysis compares this data with the July 1, 1992 data (see Exhibit A-4 for distribution by age and service).

	<i>7/1/92</i>	<i>7/1/93</i>	<i>Change</i>	<i>Percent Change</i>
Total Employees	51,133	53,537	2,404	+4.7%
Total Earnings (millions)	\$1,931.4	\$2,144.8	\$213.4	+11.0%
Average Earnings	\$37,772	\$40,062	\$2,290	+6.1%

Earnings figures as of July 1 are actual amounts paid during the previous July 1 to June 30 period, adjusted for negotiated increases and merit adjustments effective through and including July 1; new entrant earnings are annualized.

These figures are broken down by Plan on the following page.

Table A-2

DETAIL OF ACTIVE MEMBERSHIP DATA BY PLAN

	7/1/92	7/1/93	Percent Change
<b>Number of Members</b>			
Tier I Hazardous Duty	2,231	2,135	-4.3%
Tier I Plan B	18,947	18,653	-1.6
Tier I Plan C	1,609	22,347 1,559	-3.1
Tier II Hazardous Duty	4,259	4,904	+15.1
Tier II Others	24,087	31,190 26,286	+9.1
Total	51,133	58% 53,537	+4.7
<b>Total Annual Compensation (millions)</b>			
Tier I Hazardous Duty	\$ 112.1	\$ 117.3	+4.6%
Tier I Plan B	854.5	920.1	+7.7
Tier I Plan C	63.5	67.6	+6.5
Tier II Hazardous Duty	165.3	203.3	+23.0
Tier II Others	736.0	836.5	+13.7
Total	1,931.4	2,144.8	+11.0
<b>Average Compensation</b>			
Tier I Hazardous Duty	\$50,237	\$54,933	+9.3%
Tier I Plan B	45,098	49,328	+9.4
Tier I Plan C	39,484	43,362	+9.8
Tier II Hazardous Duty	38,815	41,450	+6.8
Tier II Others	30,556	31,824	+4.1
Total	37,772	40,062	+6.1
<b>Average Age</b>			
Tier I Hazardous Duty	42.2	43.0	
Tier I Plan B	45.6	46.4	
Tier I Plan C	51.6	52.2	
Tier II Hazardous Duty	33.6	34.2	
Tier II Others	38.4	38.9	
Total	41.2	41.6	
<b>Average Service</b>			
Tier I Hazardous Duty	14.6	15.4	
Tier I Plan B	16.2	17.0	
Tier I Plan C	16.3	17.4	
Tier II Hazardous Duty	3.9	3.9	
Tier II Others	4.9	5.3	
Total	9.7	10.0	

Table A-3

**SUMMARY OF INACTIVE MEMBERSHIP DATA**

	<u>7/1/92</u>	<u>7/1/93</u>	<u>Percent Change</u>
<b><i>Retirees</i></b>			
Number	26,572	26,399	-0.7%
Total Annual Benefit (000s)	\$334,033	\$355,145	+6.3
Average Annual Benefit	12,571	13,453	+7.0
<b><i>Terminated Vested</i></b>			
Number	693	660	-4.8%

Table A-4

ANALYSIS BY AGE AND SERVICE - TIER I - HAZARDOUS DUTY - ACTIVE MEMBERS

YEARS OF SERVICE

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 to 24	0	0	0	0	0	0	0	0	0	0	0	0
25 to 29	1	3	0	0	0	0	0	0	0	0	0	4
30 to 34	2	52	122	4	0	0	0	0	0	0	0	180
35 to 39	13	76	295	154	6	0	0	0	0	0	0	544
40 to 44	9	35	152	256	156	3	0	0	0	0	0	611
45 to 49	9	26	78	126	163	46	2	0	0	0	0	450
50 to 54	1	10	50	43	55	33	12	0	0	0	0	204
55 to 59	2	5	29	27	12	11	4	2	0	0	0	92
60 to 64	0	0	13	14	7	3	0	0	0	0	0	37
65 & Up	0	2	4	6	1	0	0	0	0	0	0	13
<b>Totals</b>	<b>37</b>	<b>209</b>	<b>743</b>	<b>630</b>	<b>400</b>	<b>96</b>	<b>18</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,135</b>

AVERAGE SALARIES

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 to 24	0	0	0	0	0	0	0	0	0	0	0	0
25 to 29	49,180	46,479	0	0	0	0	0	0	0	0	0	47,154
30 to 34	46,576	51,474	52,797	48,494	0	0	0	0	0	0	0	52,250
35 to 39	52,731	49,564	52,758	55,149	50,098	0	0	0	0	0	0	52,958
40 to 44	42,681	52,968	52,072	55,567	59,698	50,096	0	0	0	0	0	55,387
45 to 49	44,760	50,886	52,184	58,141	59,205	63,024	58,911	0	0	0	0	57,310
50 to 54	45,686	48,920	50,562	55,766	56,415	60,633	67,111	0	0	0	0	55,735
55 to 59	56,594	48,787	49,275	54,763	58,946	61,048	69,131	52,458	0	0	0	54,620
60 to 64	0	0	54,855	53,824	69,636	54,123	0	0	0	0	0	57,202
65 & Up	0	52,510	74,145	51,130	27,726	0	0	0	0	0	0	56,624
<b>Totals</b>	<b>47,937</b>	<b>50,708</b>	<b>52,432</b>	<b>55,833</b>	<b>58,973</b>	<b>61,294</b>	<b>66,649</b>	<b>52,458</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>54,933</b>

Table A-5

ANALYSIS BY AGE AND SERVICE - PLAN B - ACTIVE MEMBERS

YEARS OF SERVICE

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 to 24	1	0	0	0	0	0	0	0	0	0	0	1
25 to 29	2	33	50	0	0	0	0	0	0	0	0	85
30 to 34	25	175	874	105	0	0	0	0	0	0	0	1,179
35 to 39	63	229	1,592	1,038	50	0	0	0	0	0	0	2,972
40 to 44	71	221	1,167	1,697	672	62	0	0	0	0	0	3,890
45 to 49	59	158	922	1,050	1,044	597	45	0	0	0	0	3,875
50 to 54	31	108	707	750	677	717	336	27	0	0	0	3,353
55 to 59	21	56	461	499	335	336	170	39	2	0	0	1,919
60 to 64	3	30	277	275	191	131	84	36	5	1	0	1,033
65 & Up	2	12	98	73	46	64	20	21	9	1	0	346
<b>Totals</b>	278	1,022	6,148	5,487	3,015	1,907	655	123	16	2	0	18,653

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AVERAGE SALARIES

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 to 24	334	0	0	0	0	0	0	0	0	0	0	334
25 to 29	30,015	33,769	34,757	0	0	0	0	0	0	0	0	34,262
30 to 34	26,925	38,409	38,107	0	0	0	0	0	0	0	0	37,760
35 to 39	33,127	42,838	42,724	36,371	0	0	0	0	0	0	0	42,851
40 to 44	37,563	44,983	46,752	43,510	45,520	0	0	0	0	0	0	48,555
45 to 49	41,816	45,771	48,143	50,001	50,203	50,339	0	0	0	0	0	52,285
50 to 54	37,406	45,099	45,268	51,960	56,916	53,973	51,501	0	0	0	0	52,844
55 to 59	38,769	49,512	44,038	47,949	57,980	61,435	54,667	56,313	0	0	0	53,380
60 to 64	32,226	43,625	43,196	48,335	55,378	65,517	66,072	65,439	39,825	0	0	53,032
65 & Up	41,812	37,589	43,212	47,568	57,300	62,517	74,422	71,436	70,736	19,227	0	53,032
<b>Totals</b>	36,362	43,270	44,000	48,299	55,353	59,652	60,952	66,802	83,501	70,533	0	49,328



Table A-6

ANALYSIS BY AGE AND SERVICE - PLAN C - ACTIVE MEMBERS

YEARS OF SERVICE

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 to 24	0	0	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	6	0	0	0	0	0	0	0	0	6
30 to 34	1	7	24	1	0	0	0	0	0	0	0	33
35 to 39	6	6	73	56	8	0	0	0	0	0	0	149
40 to 44	5	11	60	69	43	4	0	0	0	0	0	192
45 to 49	0	10	53	58	66	26	0	0	0	0	0	213
50 to 54	1	9	77	72	67	38	11	1	0	0	0	276
55 to 59	2	21	88	98	52	26	12	7	1	0	0	307
60 to 64	1	11	71	77	46	30	7	5	0	0	0	255
65 & Up	1	4	37	33	28	16	4	1	0	3	1	128
<b>Totals</b>	17	79	489	464	310	140	34	16	6	3	1	1,559

AVERAGE SALARIES

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 to 24	0	0	0	0	0	0	0	0	0	0	0	0
25 to 29	0	39,947	0	0	0	0	0	0	0	0	0	39,947
30 to 34	29,528	39,565	36,298	39,390	39,942	0	0	0	0	0	0	37,780
35 to 39	24,959	40,110	46,021	44,890	43,307	43,708	0	0	0	0	0	39,128
40 to 44	29,746	42,117	44,890	44,541	42,832	42,832	0	0	0	0	0	42,995
45 to 49	0	40,643	45,875	48,320	45,676	45,676	0	0	0	0	0	43,466
50 to 54	31,226	40,519	42,030	47,384	49,497	49,497	37,245	53,763	0	0	0	44,289
55 to 59	28,361	38,131	42,029	47,384	50,625	53,823	62,767	35,650	69,870	0	0	42,974
60 to 64	93,478	39,666	42,029	50,625	53,823	51,420	54,515	55,289	37,615	0	0	44,910
65 & Up	36,866	48,273	43,516	47,042	51,420	41,542	27,527	27,527	0	49,367	25,584	46,118
<b>Totals</b>	32,136	37,800	40,647	43,352	46,673	48,204	50,314	44,867	42,991	49,367	25,584	43,362

Table A-7

ANALYSIS BY AGE AND SERVICE - TIER II - HAZARDOUS DUTY - ACTIVE MEMBERS

YEARS OF SERVICE

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 to 24	301	16	0	0	0	0	0	0	0	0	0	317
25 to 29	1,001	417	0	0	0	0	0	0	0	0	0	1,423
30 to 34	606	647	0	0	0	0	0	0	0	0	0	1,287
35 to 39	353	371	28	5	0	0	0	0	0	0	0	757
40 to 44	216	200	33	3	1	0	0	0	0	0	0	453
45 to 49	147	149	33	3	4	0	0	0	0	0	0	337
50 to 54	81	71	11	3	0	1	0	0	0	0	0	169
55 to 59	42	47	5	0	0	2	0	0	0	0	0	94
60 to 64	17	29	6	2	0	0	0	0	0	0	0	54
65 & Up	6	5	1	1	0	0	0	0	0	0	0	13
<b>Totals</b>	<b>2,770</b>	<b>1,952</b>	<b>156</b>	<b>17</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,904</b>

AVERAGE SALARIES

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 to 24	31,211	32,503	0	0	0	0	0	0	0	0	0	31,277
25 to 29	37,600	43,726	0	0	0	0	0	0	0	0	0	39,388
30 to 34	38,683	47,367	35,706	0	0	0	0	0	0	0	0	43,064
35 to 39	39,763	46,505	39,268	0	0	0	0	0	0	0	0	43,368
40 to 44	38,893	45,269	47,504	41,977	0	0	0	0	0	0	0	42,503
45 to 49	39,897	47,644	47,374	60,516	54,437	0	0	0	0	0	0	44,199
50 to 54	38,517	47,927	46,467	42,890	54,325	51,802	0	0	0	0	0	43,592
55 to 59	43,843	49,163	48,650	53,221	0	46,935	55,649	0	0	0	0	46,963
60 to 64	46,967	43,514	48,271	48,935	0	0	0	0	0	0	0	45,331
65 & Up	49,906	50,086	72,225	53,798	0	0	0	0	0	0	0	51,991
<b>Totals</b>	<b>37,847</b>	<b>46,123</b>	<b>45,513</b>	<b>48,908</b>	<b>54,347</b>	<b>48,557</b>	<b>55,649</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41,450</b>

Table A-8

ANALYSIS BY AGE AND SERVICE - TIER II - ALL OTHERS - ACTIVE MEMBERS

YEARS OF SERVICE

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	129	0	0	0	0	0	0	0	0	0	0	129
20 to 24	1,195	176	0	0	0	0	0	0	0	0	0	1,371
25 to 29	2,171	2,077	43	0	0	0	0	0	0	0	0	4,291
30 to 34	1,838	2,939	250	5	0	0	0	0	0	0	0	5,032
35 to 39	1,446	2,404	255	19	1	0	0	0	0	0	0	4,125
40 to 44	1,333	1,991	257	35	37	2	0	0	0	0	0	3,655
45 to 49	1,071	1,656	217	22	55	13	1	0	0	0	0	3,055
50 to 54	707	1,150	148	15	25	8	2	0	0	0	0	2,055
55 to 59	393	789	109	16	15	5	0	0	0	0	0	1,327
60 to 64	218	491	93	5	7	4	0	1	0	0	0	819
65 & Up	105	251	83	6	1	1	0	0	0	0	0	447
<b>Totals</b>	10,606	13,924	1,455	123	141	33	3	1	0	0	0	26,286

AVERAGE SALARIES

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	2,325	0	0	0	0	0	0	0	0	0	0	2,325
20 to 24	14,387	21,766	0	0	0	0	0	0	0	0	0	15,334
25 to 29	24,999	32,689	30,555	0	0	0	0	0	0	0	0	28,777
30 to 34	26,856	36,032	34,054	24,449	0	0	0	0	0	0	0	32,571
35 to 39	28,639	37,385	38,137	23,218	25,577	0	0	0	0	0	0	34,297
40 to 44	27,981	38,104	40,036	46,783	43,623	53,893	0	0	0	0	0	34,696
45 to 49	28,161	37,048	42,163	38,444	56,774	48,247	21,597	0	0	0	0	34,688
50 to 54	28,302	35,774	40,277	50,840	50,337	52,392	31,741	0	0	0	0	33,876
55 to 59	28,285	35,069	38,937	45,103	49,320	46,747	0	0	0	0	0	33,704
60 to 64	28,652	34,190	37,871	22,738	45,102	45,771	0	36,892	0	0	0	33,217
65 & Up	18,868	28,176	39,486	50,976	20,268	48,216	0	0	0	0	0	28,423
<b>Totals</b>	25,396	35,721	38,485	40,247	50,329	49,066	28,359	36,892	0	0	0	31,824

Table A-9

ANALYSIS OF RETIRED MEMBERS BY RETIREMENT YEAR

Retirement Year	NUMBER OF RETIREES					AVERAGE BENEFIT				
	Service Retirement	Service Connected Disability	Non-Service Connected Disability	Hazardous Duty Retirement	Other Retirement	Service Retirement	Service Connected Disability	Non-Service Connected Disability	Hazardous Duty Retirement	Other Retirement
pre-1965	359	38	57	18	176	7,505	5,845	5,526	8,999	6,354
1966	54	2	4	2	26	8,174	5,061	5,466	9,592	5,569
1967	84	7	13	0	19	7,751	5,957	6,359	0	6,704
1968	87	3	14	0	22	7,097	4,542	7,307	0	6,307
1969	133	10	10	1	20	8,047	6,990	6,479	7,308	6,056
1970	207	12	18	2	38	8,173	7,302	7,892	10,777	8,004
1971	214	10	38	3	40	9,748	7,119	7,873	10,407	8,141
1972	314	14	49	6	47	10,794	8,486	7,631	13,460	8,244
1973	400	21	49	19	85	10,515	9,323	8,840	13,881	8,761
1974	471	25	52	21	69	10,831	11,215	9,110	15,931	7,917
1975	399	20	31	21	103	9,974	9,878	9,517	18,289	8,322
1976	662	41	50	17	92	10,467	10,028	8,860	18,398	7,636
1977	717	13	37	22	84	9,699	8,997	8,688	17,200	7,136
1978	570	10	24	12	86	9,176	7,293	8,001	16,221	6,854
1979	654	9	35	24	67	8,791	8,185	6,350	18,306	6,339
1980	1241	11	33	40	95	9,371	9,494	7,078	18,347	6,712
1981	799	17	30	29	90	8,345	6,404	5,952	17,188	6,181
1982	648	23	28	50	53	9,090	8,052	6,373	16,547	8,820
1983	578	15	19	33	48	9,466	9,826	8,663	18,030	7,587
1984	595	14	34	42	80	10,874	10,355	9,264	19,088	8,207
1985	755	32	33	58	106	11,375	10,269	9,535	19,571	8,566
1986	850	33	36	68	130	12,240	10,043	11,062	21,086	9,194
1987	944	46	38	52	170	13,889	9,653	12,439	24,453	7,610
1988	925	34	43	78	197	14,632	12,314	11,117	24,029	8,530
1989	1086	45	36	95	177	15,662	12,447	12,558	24,964	10,150
1990	378 3109 542	56	36	254	325	17,631	12,732	11,177	31,611	15,172
1991	254	12	14	89	173	13,792	14,915	12,105	26,162	9,821
1992	574	8	32	86	239	17,842	16,237	16,195	28,552	12,022
1993	2636 132	9	29	249	166	21,460	19,304	17,422	31,192	13,179
		2	8	43	57	9,595	22,080	15,470	27,251	14,774

MILLIMAN & ROBERTSON, INC.

Table A-10

ANALYSIS OF RETIRED MEMBERS BY CURRENT AGE

Current Age	NUMBER OF RETIREES						AVERAGE BENEFIT								
	Service Retirement	Service Connected Disability	Non-Service Connected Disability	Hazardous Duty Retirement	Other Retirement	Service Retirement	Service Connected Disability	Non-Service Connected Disability	Hazardous Duty Retirement	Other Retirement	Service Retirement	Service Connected Disability	Non-Service Connected Disability	Hazardous Duty Retirement	Other Retirement
Less than 40	2	23	5	0	84	10,505	11,066	5,693	0	12,104					
40 to 44	0	23	24	22	83	0	15,998	10,453	27,023	15,402					
45 to 49	3	71	42	181	136	15,124	12,165	18,222	28,229	13,288					
50 to 54	178	74	70	285	144	20,838	13,154	13,275	30,185	14,883					
55 to 59	1,488	89	108	295	469	22,707	11,527	11,892	26,329	11,172					
60 to 64	3,002	94	152	247	593	18,305	9,313	9,490	24,764	9,386					
65 to 69	4,600	83	145	216	420	14,193	7,438	7,791	21,380	8,093					
70 to 74	4,338	55	143	118	386	12,138	6,421	7,209	17,799	7,727					
75 to 79	3,424	43	97	43	302	9,958	8,024	7,828	15,630	7,556					
80 to 84	1,974	21	73	18	234	9,521	9,136	8,114	13,378	8,195					
85 to 89	962	12	48	5	133	9,475	8,119	7,184	13,121	7,277					
90 to 94	337	2	18	2	61	7,595	7,142	5,843	8,835	7,023					
95 to 99	89	0	1	0	9	5,607	0	2,465	0	5,258					
<b>Final Totals</b>	<b>20,397</b>	<b>590</b>	<b>926</b>	<b>1,432</b>	<b>3,054</b>	<b>13,508</b>	<b>10,136</b>	<b>9,358</b>	<b>25,073</b>	<b>9,521</b>					

*APPENDIX B*

*SUMMARY OF PLAN PROVISIONS*

**APPENDIX B**

**SUMMARY OF PLAN PROVISIONS**

**CONNECTICUT STATE EMPLOYEES  
RETIREMENT SYSTEM**

*Established September 1, 1939*

**1. Membership**

Tier I [Sec. 5-160]: Each state employee appointed to classified service shall become a member on the first day of the pay period following permanent appointment.

Each officer elected by the people and each appointee of such officer exempt from classified service may elect to become a member, effective on the first day of the pay period following receipt of such election.

Each other state employee exempt from classified service shall become a member on the first day of the pay period following six months of employment.

Except as noted below employees hired prior to January 1, 1984 could elect (no later than January 2, 1984) to be covered under either Plan B or Plan C. Employees under contracts with Union Independent and CSEA unions hired prior to October 1, 1982 had until October 1, 1984 to make such election.

Tier II [Sec. 5-192e]: Tier II consists of employees first joining the retirement system on or after January 1, 1984 plus employees hired between July 1, 1982 and January 1, 1984 who elected Tier II. Each state employee becomes a member on the first day of employment.

**2. Normal Retirement Eligibility**

Tier I - Hazardous Duty [Sec. 5-173]: 20 years of service.

Tier I - Plans B and C [Sec. 5-162]: Age 55 and 25 years of service, age 60 and 10 years of service, or age 70.

Tier II [Sec. 5-192l]: Age 62 and 10 years of service (effective 7/1/92) or age 60 and 25 years of service or age 70 and 5 years of service, except hazardous duty members may retire after 20 years.

3. Normal Retirement Benefit

Tier I - Hazardous Duty [Sec. 5-173]: 50% of Final Average Earnings plus 2% for each year in excess of 20.

Tier I Plan B [Sec. 5-162]: Same as Plan C up to age 65; thereafter 1% of Final Average Earnings up to \$4,800 plus 2% of Final Average Earnings in excess of \$4,800 times years, reduced for retirement prior to age 65 with less than 25 years. Minimum benefit with 25 years, \$300 per month.

Tier I Plan C [Sec. 5-162]: 2% of Final Average Earnings times years of service, reduced for retirement prior to age 65 with less than 25 years. Minimum with 25 years, \$300 per month.

Tier II Hazardous Duty Members [Sec. 5-192n]: 2½% of Final Average Earnings times up to 20 years of service plus 2% of Final Average Earnings times years of service in excess of 20 years, if any. Minimum with 25 years, \$300 per month (or less if retirement before 7-1-87).

Tier II All Other [Sec. 5-192l]: 1 1/3% of Final Average Earnings plus ½% of Final Average Earnings in excess of the year's breakpoint\*, times up to 35 years of service from 10-1-82 plus 1 5/8% of Final Average Earnings times years of service in excess of 35 years, if any. Minimum with 25 years, \$300 per month (or less if retirement before 7-1-87).

\* \$10,700 increased by 6% each year after 1982, rounded to the nearest \$100, but not greater than Social Security Covered Compensation.

4. Early Retirement

Tier I - Hazardous Duty: None.

Tier I [Sec. 5-162]: Age 55 and 10 years of service; Normal Retirement Benefit reduced actuarially for retirement prior to age 60.

Tier II [Sec. 5-192m]: Age 55 and 10 years of service; Normal Retirement Benefit reduced ¼% (effective 7/1/91) for each month prior to age 65; Minimum benefit with 25 years, \$300 per month (or less if retirement prior to 7-1-87).



5. Deferred Retirement

Tier I [Sec. 5-162]: May be deferred but not beyond age 70.

Tier II [Sec. 5-192l]: May be deferred but not beyond age 70. Benefit is based on salary and service to actual retirement.

6. Vesting

Tier I [Sec. 5-166]: Ten years of service; actuarially reduced benefit payable at age 55; in addition employees are always fully vested in their own contributions (after 1-1-83, Tier I, contributions with 5% interest from 1-1-82).

Tier I - Hazardous Duty [Sec. 5-173(f)]: As above.

Tier II [Sec. 5-192o]: Ten years of service or age 70 and 5 years; benefit payable at Normal Retirement Age or early retirement benefit payable at age 55; minimum benefit with 25 years, payable after age 55, \$300 per month (or less if retirement before 7-1-87).

7. Member Contributions

Tier I - Hazardous Duty [Sec. 5-161]: 4% of earnings up to Social Security Taxable Wage Base plus 5% above that level.

Tier I - Plan B [Sec. 5-161]: 2% of earnings up to Social Security Taxable Wage Base plus 5% above that level.

Tier I - Plan C [Sec. 5-161]: 5% of earnings.

Tier II - All Other [Sec. 5-192u]: None.

Tier II - Hazardous Duty [Sec. 5-192u]: 4% of earnings

8. Cost of Living

[Sec. 5-162b, 5-162d]: Annual adjustment each July 1 of up to 5% for retirements prior to 7-1-80; 3% for retirements after 7-1-80. For members (or beneficiaries) not covered by Social Security and age 62 and over, the maximum increase is 6%. If an actuarial surplus (as defined in the law) exists, the Commission may further increase retired benefits.

9. Death Benefits

Tier I - State Police [Sec. 5-146]: Survivor benefits to spouse of \$670 per month plus \$300 to a surviving dependent child (or \$700 to surviving dependent children).

Tier I [Sec. 5-165a]: If eligible for early or normal retirement, spouse benefit equal to 50% of average of Life Benefit and 50% J&S benefit member would have received. If not eligible to retire but 25 years, same benefit calculated as though age 55 using service and earnings at death.

[Sec. 5-168]: If not eligible for retirement, return of contributions (after 10-1-82, Tier I, with interest from 1-1-82 at 5%).

Tier II [Sec. 5-192r]: If eligible for early or normal retirement, spouse benefit equal to 50% of member's benefit under a 50% J&S. If not eligible to retire but 25 years, same benefit calculated as though age 55 using service and earnings at death.

[Sec. 5-192t]: If death is due to employment, a spouse with dependent children under 18 will be paid \$7,500 in not less than 60 installments while living and not remarried; also \$20 per month per child under 18. If no children under 18, spouse [or dependent parent(s), if no spouse] will be paid \$4,000 in not less than 60 installments.

10. Disability Benefits

Tier I [Sec. 5-142, 5-169, 5-173]: For non-service disabilities occurring prior to age 60 and after 5 years of service, benefit equals 3% times base salary times years of service (Maximum  $1\frac{2}{3}\%$  times service to 65). If disability occurs prior to age 60 and is due to service, benefit equals  $1\frac{2}{3}\%$  of salary times service projected to 65 (maximum 30 years) and is payable regardless of length of service. Exception: State Police benefit is accrued benefit if more than 20 years of service. State Police receive an additional benefit of \$360 per month plus \$300 to spouse plus \$300 to a surviving dependent child (or \$700 to surviving dependent children).

## Appendix B

Maximum disability benefit is lesser of: 100% of salary less Workers Compensation and Social Security and less non-rehabilitation earnings, or 80% of salary less Workers Compensation and Social Security. Social Security is primary plus family.

Tier II [5-192p]: Prior to age 65 and due to service or after 10 years of service, benefit is 1 1/3% of final average earnings, plus 1/2% of excess earnings times service projected to 65 (maximum 30 years of service to Date of Disability if greater than 30 years). Same maximum as Tier I.

Minimum disability benefit including Workers Compensation and Social Security is 60% of salary.

### 11. Optional Forms of Payment

Tier I [Sec. 5-165]: 50% Qualified Joint and Survivor (Normal Form if married at least 12 months).

Tier II [Sec. 5-192q]: 50% or 100% Joint and Survivor (Normal Form if married at least 12 months). Ten years certain and life. Twenty years certain and life. Life (Normal Form if not married at least 12 months).

### 12. Part-Time Employment

[Sec. 5-162g & Sec. 5-192k]: Service treated as if full-time for eligibility. If consistent part-time for all periods, treat as full-time. If varying schedule or some part-time, some full-time, service and salary proportionately adjusted.

APPENDIX C

*ACTUARIAL METHOD AND ASSUMPTIONS*

*APPENDIX C*

*ACTUARIAL METHOD AND ASSUMPTIONS*

*A. Funding Method*

1. The actuarial valuation method used is the Projected Unit Credit Cost Method. Recommended annual contributions until the accrued liability is completely funded will consist of two pieces: Normal Cost plus a payment towards the Unfunded Accrued Liability.
  - a. The Accrued Liability is determined directly as the present value of benefits accrued to date, where the accrued benefits for each Member is the pro-rata portion (based on service to date) of the projected benefit payable at death, disability, retirement or termination.
  - b. The Normal Cost is then similarly determined as the present value of the portion of the projected benefit attributable to the current year.
2. The Unfunded Accrued Liability is the Accrued Liability less Current Assets.
3. Since the valuation was done as of June 30, 1993, costs have been projected to July 1, 1994 in order to correspond to the fiscal year as follows:
  - a. Normal Costs were determined as a percentage of earnings, by Tier, as of July 1, 1993. Earnings were projected to July 1, 1994, separately for each Tier because of the shifting Tier populations, and the projected earnings were then multiplied by each Tier's normal cost factor.
  - b. The Unfunded Accrued Liability was determined as of June 30, 1993, and brought forward to June 30, 1994 by adding the Normal Cost plus interest and subtracting expected State and Federal contributions, also with interest. This amount was amortized over the 38 years specified in the SEBAC Agreement.
  - c. Normal Cost and Past Service Amortization payments were adjusted to reflect payment in twelve equal installments at the end of each month.

*Appendix C*

*B. Actuarial Assumptions*

*Mortality:* 1983 Group Annuity Mortality Table.

Service connected deaths are assumed to comprise 20% of total Death for Hazardous Duty employees and 0% for all other employees.

*Investment Return:*

*Salary Scale:* Varies by service as follows:

<u>Years</u>	<u>Rate</u>
0	14.00
1	12.00
2	10.00
3	9.00
4	8.20
5	7.50
10	5.45
15	4.45
20	3.75
25	3.25

*Disability:*

*Annual Rate of Disability  
(Per 1,000 Lives)*

<u>Age</u>	<u>Hazardous Duty</u>	<u>All Others</u>
20	.90	.38
25	1.02	.43
30	1.16	.49
35	1.45	.61
40	2.04	.85
45	3.35	1.40
50	6.11	2.55
55	11.10	4.63
60	17.30	7.21

Service connected disabilities are assumed to comprise 50% of total Disability for Hazardous Duty employees and 20% for all other employees.

**Appendix C**

**B. Actuarial Assumptions (cont'd)**

**Social Security Wage  
Base Increases:**

6½% compounded annually.

**Retirement Ages:**

**Hazardous Duty Employees**

<u>Age</u>	<u>First Year</u>	
	<u>Eligible</u>	<u>Thereafter</u>
47	40%	30%
50	40	30
55	60	30
60	80	50
62	100	100
65	100	100
70	100	100

**Non Hazardous Duty Employees**

<u>Age</u>	<u>First Year</u>	
	<u>Eligible</u>	<u>Thereafter</u>
47	0%	0%
50	0	0
55	20	0
60	20	15
62	40	40
65	80	60
70	100	100

*Appendix C*

*B. Actuarial Assumptions (cont'd)*

*Turnover:*

Three year select and ultimate rates as shown below for non-hazardous duty males; the same table with rates increased by a factor of 10% for females and decreased by a factor of 60% of hazardous duty employees.

<i>Age</i>	<i>Years of Participation</i>			
	<i>0</i>	<i>1</i>	<i>2</i>	<i>3+</i>
20	30	30	20	10
25	17	15	10	8
30	15	11	8	5
35	13	10	8	3
40	10	9	7	3
45	5	8	6	2
50	3	6	4	2
55	2	4	2	0
60	0	0	0	0

*Cost of Living  
Increases:*

3% per year for retirees on or after 7-1-80.  
4½% per year for retirees prior to 7-1-80.

*Asset Valuation:*

Adjusted market value: assets are written up (or down) by spreading recognition of gains and losses over five years, plus an additional write-up (or write-down) as necessary so that the final adjusted value is within 20% of market value.



APPENDIX D

*ACTUARIAL SURPLUS TEST*

APPENDIX D

ACTUARIAL SURPLUS TEST AS OF JUNE 30, 1993

Section 5-162h(b) of the General Statutes of Connecticut provides that the Retirement Commission may grant additional cost of living adjustments for retired employees if an actuarial surplus exists. An actuarial surplus is deemed to exist if three criteria are met:

I. Investment Income: actual rate of return for the Fiscal Year ending June 30, 1993 must exceed the actuarial assumption of 8.5%.

A.	Market Value of Assets July 1, 1992	\$3,605,993,231
B.	Market Value of Assets June 30, 1993	3,994,950,545
I.	Investment Income for FY 92-93	419,423,056

$$\text{Actual Rate of Return for FY 92-93} = \frac{2I}{A+B-I} = 11.68\%$$

Actual Rate of Return of 11.68% is greater than the assumption of 8.5%, so first criteria is met.

II. Assets Versus Liabilities: Market value of assets must exceed 50% of specified liabilities.

A.	Market Value of Assets June 30, 1993	\$3,994,950,545
B.	Specified Liabilities June 30, 1993	
	Liability for Retired Members	3,874,194,605
	Liability for Terminated Vested Members	34,490,397
	Active Member Contributions	259,391,090
	Interest on Active Member Contributions	<u>68,434,825</u>
	Total	4,236,510,917
C.	50% of Specified Liabilities	2,118,255,459

Market Value of Assets exceeds 50% of Specified Liabilities, so second criteria is met.

*Appendix D*

III. **Unfunded Liability:** actual unfunded liability must be less than the projected unfunded liability five years from determination date.

A.	Actual Unfunded Liability June 30, 1993	\$3,493,563,609
B.	Projected Unfunded Liability June 30, 1998	1,755,050

Actual Unfunded Liability exceeds Projected Unfunded Liability so third criteria is not met and there is no actuarial surplus.

Projection of Unfunded Liability

Section 5-162-h(b)(2) of the General Statutes of Connecticut specifies the means of calculating the Projected Unfunded Liability used in the third criteria of the Actuarial Surplus Test. The Projection reflects the actual unfunded liability as of December 31, 1983 adjusted for changes in actuarial assumptions and cost methods through the determination date. The following Projection reflects the following changes: data correction (June 30, 1987), change in actuarial assumptions (June 30, 1987), change in actuarial cost method (June 30, 1988), change in actuarial assumptions - interest rate only (June 30, 1989), change in actuarial cost method -amortization period only (June 30, 1992), change in actuarial assumptions (June 30, 1993).

<i>Year</i>	<i>(000) June 30 Unfunded Liability</i>	<i>Year</i>	<i>(000) June 30 Unfunded Liability</i>	<i>Year</i>	<i>(000) June 30 Unfunded Liability</i>
1984	2,155,459	2000	1,734,339	2016	1,364,443
1985	2,201,605	2001	1,722,646	2017	1,321,309
1986	2,206,090	2002	1,709,958	2018	1,274,507
1987	2,524,556	2003	1,696,191	2019	1,223,727
1988	1,954,257	2004	1,681,255	2020	1,168,632
1989	1,432,333	2005	1,665,050	2021	1,108,853
1990	1,939,758	2006	1,647,466	2022	1,043,992
1991	1,930,524	2007	1,628,388	2023	973,619
1992	1,920,505	2008	1,607,689	2024	897,265
1993	1,794,192	2009	1,585,229	2025	814,419
1994	1,787,586	2010	1,560,861	2026	724,533
1995	1,780,419	2011	1,534,422	2027	627,005
1996	1,772,643	2012	1,505,736	2028	521,188
1997	1,764,205	2013	1,474,610	2029	406,377
1998	1,755,050	2014	1,440,840	2030	281,377
1999	1,745,116	2015	1,404,198	2031	146,648

*APPENDIX E*

*ENTRY AGE NORMAL VALUATION RESULTS*

**APPENDIX E**

**ENTRY AGE NORMAL VALUATION RESULTS**

	<i>June 30, 1992</i>	<i>June 30, 1993</i>
<b>A. Current Results</b>		
1. Present Value of Future Benefits		
- Active Members	\$5,670,333,462	\$5,462,816,433
- Retired and Beneficiaries	3,586,975,212	3,874,194,605
- Deferred Vested Members	<u>35,857,508</u>	<u>34,490,397</u>
- Total Present Value	9,293,166,182	9,371,501,435
2. Present Value Future Normal Cost Contributions	1,841,767,847	1,611,942,903
3. Total Actuarial Liability: (1)-(2)	7,451,398,335	7,759,558,532
4. Actuarial Value of Assets	3,425,886,181	3,696,176,885
5. Unfunded Actuarial Liability: (3)-(4)	4,025,512,154	4,063,381,647
6. Total Normal Cost	175,402,031	174,565,782
7. Expected Employee Contributions	30,836,060	30,267,541
8. Employer Normal Cost: (6)-(7)	144,565,971	144,298,241
<b>B. Projections to Following Year</b>		
1. Employer Normal Cost	164,831,497	164,572,786
2. Unfunded Actuarial Liability	4,241,468,887	4,257,814,019
3. Past Service Cost	362,237,226	364,976,981
4. Total Cost: (1)+(3)	527,068,723	529,549,767
5. Total Cost as a Percent of Pay	25.01%	22.62%