

**PRELIMINARY 1994 VALUATION RESULTS  
CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM**

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**I. Reconciliation of Members**

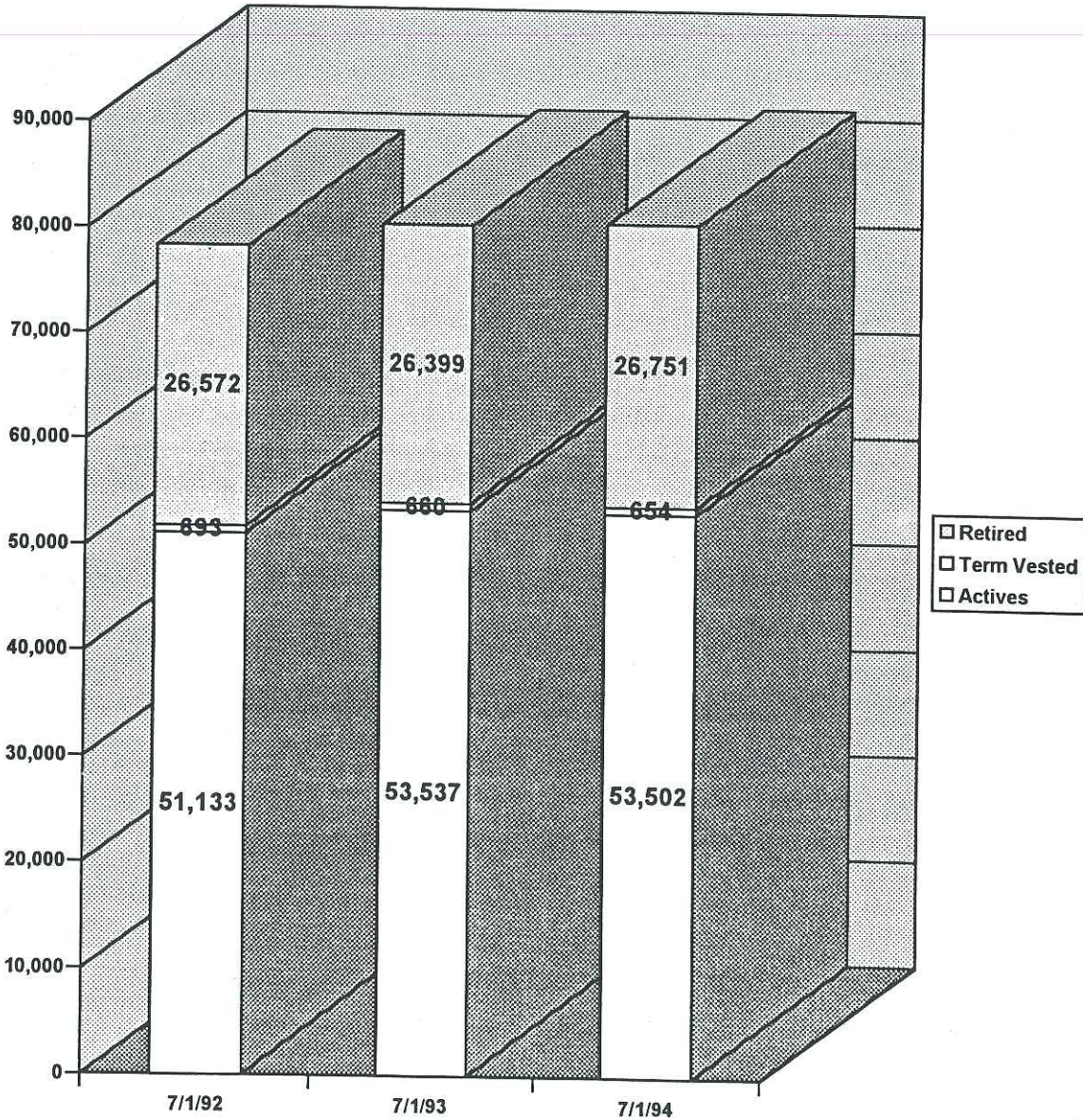
	Active Members	Deferred Vested Members	Retired Members	Total
Total Members as of July 1, 1993	53,537	660	26,399	80,596
New Terminated Vested	(10)	62	0	52
New Retired	(841)	(44)	885	0
New Disabled	(30)	0	30	0
Died (no Beneficiary)	0	0	(998)	(998)
Died (with beneficiary)	(1)	0	1	0
Rehired from Inactive Status	6	(6)	0	0
New Active Members	5,514	0	0	5,514
*Other <i>Texas</i>	(4,673)	(18)	434	(4,257)
Total Members as of July 1, 1994	53,502	654	26,751	80,907

\* Includes:  
Former active members who terminated without a vested benefit  
Terminated vested members who withdrew employee contributions  
Active or Inactive Members who died and beneficiary received a refund of employee contributions



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## System Members



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**II. Summary of Active Membership Data**

	7/1/93	7/1/94	Percent Change
<b>Number of Members</b>			
Tier I Hazardous Duty	2,135	1,967	- 7.9%
Tier I Plan B	18,653	17,806	- 4.5%
Tier I Plan C	1,559	1,387	-11.0%
Tier II Hazardous Duty	4,904	5,855	+19.4%
Tier II Others	26,286	26,487	+ 0.8%
<b>Total</b>	53,537	53,502	- 0.1%
<b>Total Annual Compensation (Millions)</b>			
Tier I Hazardous Duty	\$117.3	108.5	- 7.5%
Tier I Plan B	920.1	877.6	- 4.6%
Tier I Plan C	67.6	60.7	-10.2%
Tier II Hazardous Duty	203.3	239.6	+17.9%
Tier II Others	836.5	869.4	+ 3.9%
<b>Total</b>	2,144.8	2,155.9	+ 0.5%
<b>Average Compensation</b>			
Tier I Hazardous Duty	\$54,933	55,178	+ 0.4%
Tier I Plan B	49,328	49,288	- 0.1%
Tier I Plan C	43,362	43,728	+ 0.8%
Tier II Hazardous Duty	41,450	40,930	- 1.3%
Tier II Others	31,824	32,824	+ 3.1%
<b>Total</b>	40,062	40,295	+ 0.6%
<b>Average Age</b>			
Tier I Hazardous Duty	43.0	43.5	+ 1.2%
Tier I Plan B	46.4	47.1	+ 1.5%
Tier I Plan C	52.2	52.6	+ 0.8%
Tier II Hazardous Duty	34.2	34.7	+ 1.5%
Tier II Others	38.9	39.5	+ 1.5%
<b>Total</b>	41.6	42.0	+ 1.0%
<b>Average Service</b>			
Tier I Hazardous Duty	15.4	16.0	+ 3.9%
Tier I Plan B	17.0	18.0	+ 5.9%
Tier I Plan C	17.4	18.3	+ 5.2%
Tier II Hazardous Duty	4.4	3.9	-11.4%
Tier II Others	5.3	5.8	+ 9.4%
<b>Total</b>	10.0	10.4	+ 4.0%



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**III. Summary of Retired Membership Data**

	7/1/93	7/1/94	Percent Change
<b>Retirees</b>			
Number	26,399	26,751	+1.3%
Total Annual Benefit (000s)	\$355,145	\$373,087	+5.1%
Average Annual Benefit	13,453	13,947	+3.7%
<b>Terminated Vested</b>			
Number	660	654	-0.9%

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**IV. Development of Actuarial Value of Assets**

Plan Year Ending	Realized Gain/Losses	Change in Unrealized Gain/Losses	Total Gains/Losses
6/30/94			
6/30/93	\$10,676,524	620,866	\$11,297,390
6/30/92	24,188,054	236,815,252	\$261,003,306
6/30/91	42,882,763	72,441,760	115,324,523
	16,110,453	(45,666,489)	(29,556,036)
<p>The Actuarial Value of Assets as of June 30, 1994 is derived as follows:</p>			
(1) Market Value of Assets as of June 30, 1994			\$4,150,379,946
(2) Five-Year Gains and Losses Not Yet Recognized			
80% of FY 94			
60% of FY 93		9,037,912	
40% of FY 92		156,601,984	
20% of FY 91		46,129,809	
		<u>(5,911,207)</u>	
			205,858,498
(3) 20% of (1)			830,075,989
(4) Actuarial Value of Assets as of June 30, 1994:			
(1) - (2), within (1) ± (3)			3,944,521,448

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**V. Development of Asset Gain/Loss**

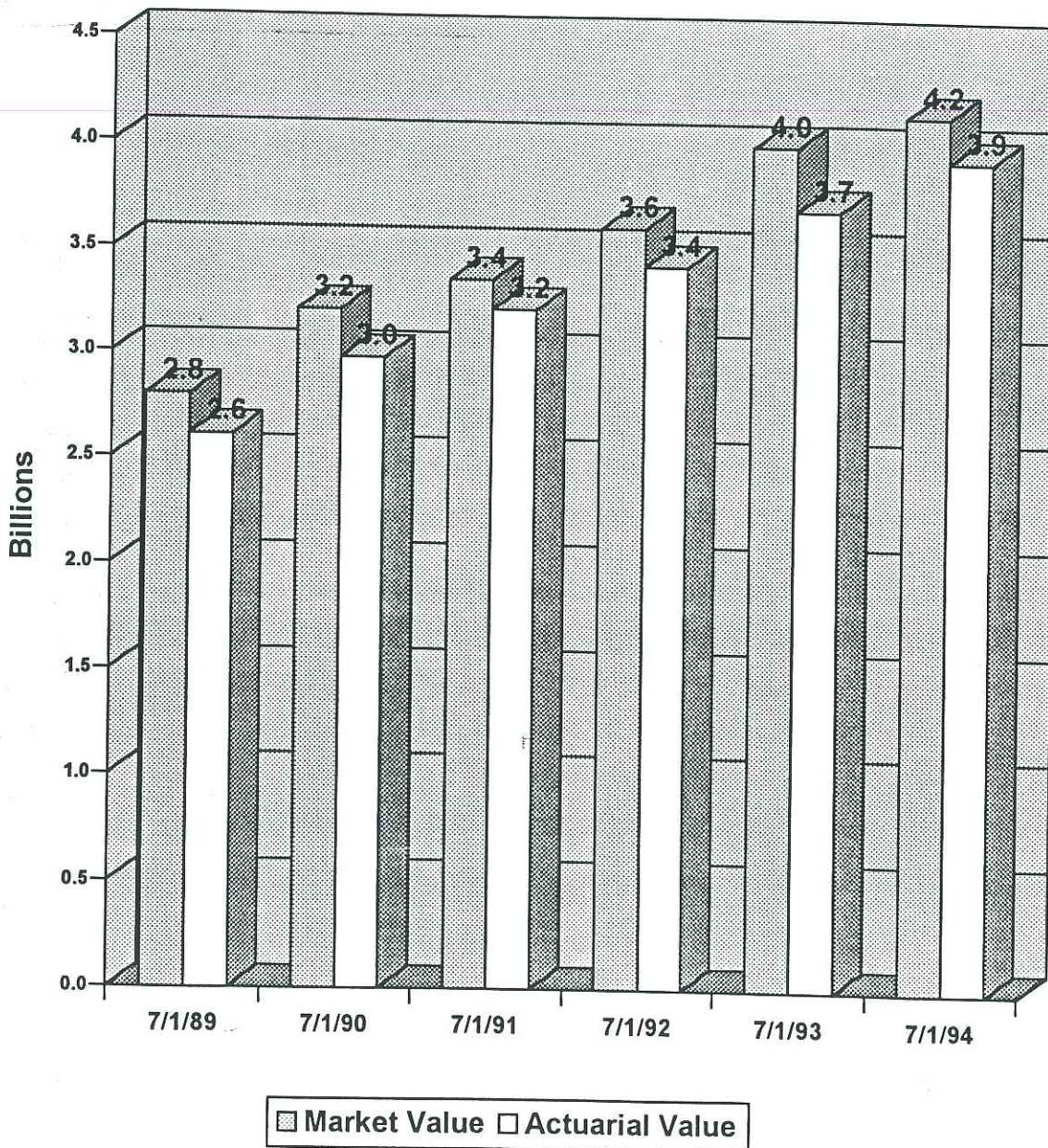
	Market Value of Assets	Actuarial Value of Assets
(1) Value of Assets as of July 1, 1993	\$3,994,950,545	\$3,696,176,885
(2) Contributions	345,960,319	345,960,319
(3) Benefit Payments during 1993-94	369,945,045	369,945,045
(4) Expected Investment Income at 8 1/2% on (1) through (3)	338,650,142	313,254,382
(5) Actual Investment Income	179,414,127	272,329,290
(6) Expected Value of Assets as of June 30, 1994: (1) + (2) - (3) + (4)	4,309,615,961	3,985,446,540
(7) Actual Value of Assets as of June 30, 1994: (1) + (2) - (3) + (5)	4,150,379,946	3,944,521,448
(8) Assets Gain/(Loss): (7) - (6)	(159,236,015)	(40,925,092)
(9) Approximate Effective Yield Represented by Actual Investment Income	4.50%	7.39%

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 on the plan's invested assets.



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## System Assets



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**VI. Normal Cost Percentages**

	1989	1990	1991	1992	1993	1994
<b>Tier I</b>						
Hazardous Duty	19.0514%	18.8737%	17.9397%	18.3565%	22.6277%	16.5805%
Plan B	10.9914%	10.6310%	10.4280%	10.4638%	9.5823%	9.8117%
Plan C	8.6174%	7.6448%	9.9627%	9.5261%	9.4761%	9.6759%
<b>Tier II</b>						
Hazardous Duty	9.3785%	12.2340%	10.2468%	10.9393%	18.2802%	9.4258%
All Others	4.3529%	5.1166%	5.1892%	5.6637%	5.5835%	5.7485%
<b>Total</b>	<b>9.1932%</b>	<b>9.1602%</b>	<b>8.8303%</b>	<b>8.9634%</b>	<b>9.4519%</b>	<b>8.4672%</b>



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**VII. System Liabilities**

	1993	1994
(1) Liability for Active Members		
(a) Tier I Hazardous Duty	\$ 496,581,970	\$ 407,704,392
(b) Tier I Plan B	2,054,284,754	2,096,007,655
(c) Tier I Plan C	178,432,076	170,016,203
(d) Tier II Hazardous Duty	218,645,203	196,238,302
(e) Tier II All Others	<u>333,111,489</u>	<u>380,635,824</u>
(f) Total Liability for active Members	3,281,055,492	3,250,602,376
(2) Liability for Deferred Vested Members	34,490,397	32,951,832
(3) Liability for Retired Members	3,874,194,605	4,045,626,976
(4) Total System Liability	7,189,740,494	7,329,181,184



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**VIII. Reconciliation of Unfunded Actuarial Liability**

Unfunded Actuarial Liability 7/1/93	\$3,493,563,609
● interest and expected benefit accruals	493,110,428
● true actuarial contribution with interest FY93-94	(498,793,712)
● contribution shortfall with interest	176,680,090
● asset (gain)/loss	40,925,092
● liability (gain)/loss (balancing item) <i>salaries - good gain Δ in valuation assumptions</i>	(320,825,771)
Actual Unfunded Actuarial Liability 7/1/94	\$3,384,659,736

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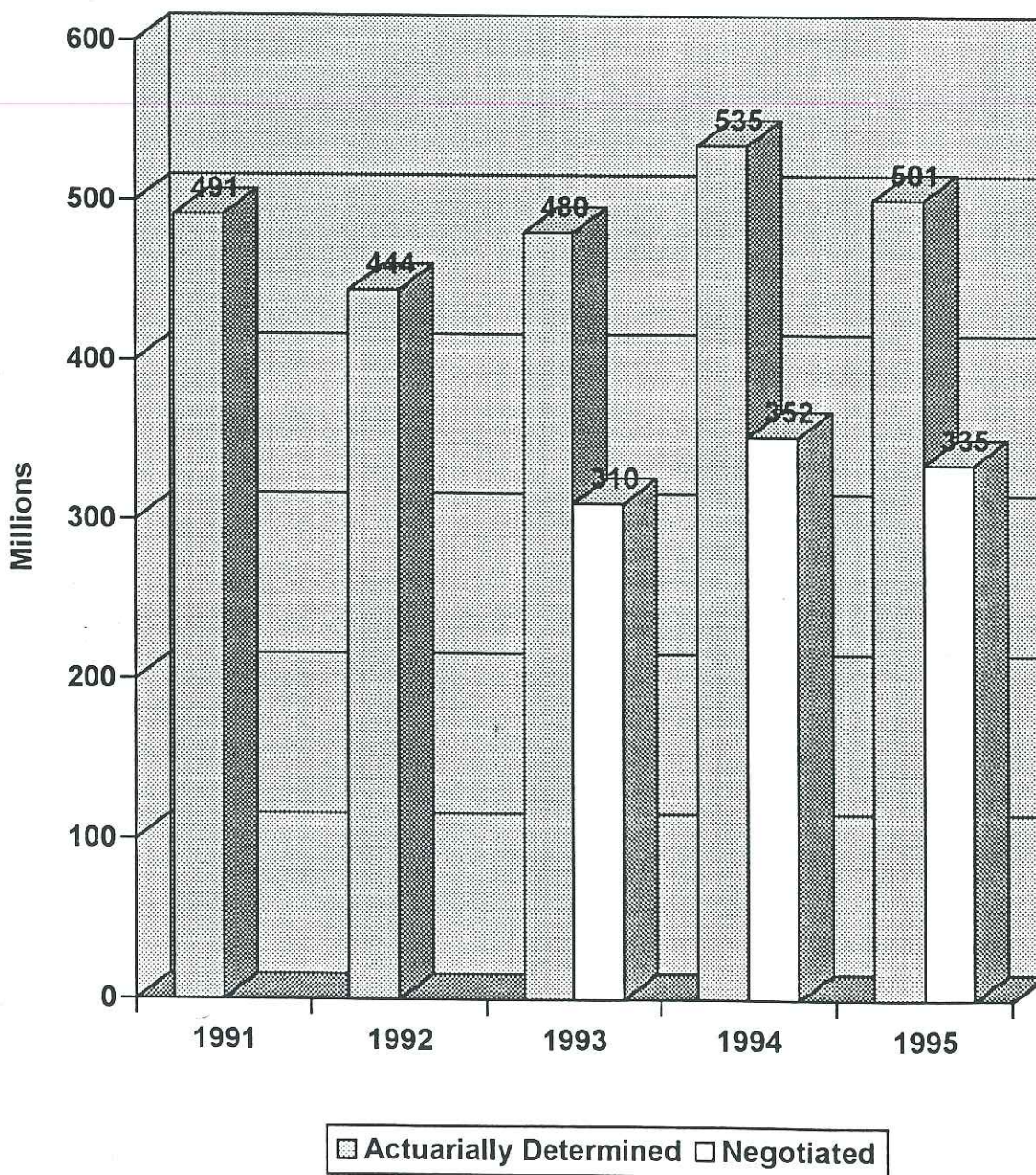
**IX. System Contributions**

(1)	Total System Liability	\$7,329,181,184
(20)	Actuarial Value of Assets	3,944,521,448
(3)	Unfunded Actuarial Liability as of July 1, 1994	3,384,659,736
(4)	Projected Unfunded Actuarial Liability as of June 30, 1995	3,536,846,571
(5)	Past Service Cost	304,396,657
(6)	Employer Normal Cost	196,711,972
(9)	Total System Contribution (before SEBAC)	501,108,629
(10)	Past Service Cost per SEBAC	138,400,000
(11)	Total System Contribution (after SEBAC)	335,111,972
(12)	Impact of SEBAC	165,996,657



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## Employer Contribution (Dollars)





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**X. Summary of Assumptions**

Interest Rate	8 1/2%				
Salary Scale	Varies by service as follows:				
	Years	Rate			
	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			
Mortality	1983 Group Annuitant Mortality Male and Female Tables.				
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% for hazardous duty employees.				
	<u>Years of Participation</u>				
	<u>Age</u>	<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
	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
Retirement	One year select and ultimate rates separately for hazardous and non-hazardous duty employees.				
		<u>Hazardous</u>		<u>Non-Hazardous</u>	
	<u>Age</u>	<u>0</u>	<u>1+</u>	<u>0</u>	<u>1+</u>
	47	40	30	0	0
	50	40	30	0	0
	55	60	30	20	0
	60	80	50	20	15
	62	100	100	40	40
	65	100	100	80	60
	70	100	100	100	100

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Disability	The current table of rates increased by a factor of 1.2 for hazardous duty employees and decreased by a factor of .5 for non-hazardous duty employees.		
	<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	
Disabled Mortality	50% of 1965 Railroad Retirement Board Disabled Mortality Table.		

## PRELIMINARY 1994 VALUATION RESULTS CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM

### ANALYSIS OF RESULTS

- System membership has remained stable.
- Total annual compensation was flat, largely because there were no negotiated pay increases effective 7/1/94.
- Asset performance was disappointing. On a market value basis, the performance was about 4.5%. On the smoothed basis, the approximate rate of return was 7.4%. Our investment return assumption is 8.5% so the System experienced asset losses of about \$41 million.
- Normal cost percentages for the nonhazardous duty groups show no surprises. For the hazardous duty groups, the normal cost percentages are lower than the prior year because of coding refinements in our valuation model. The select and ultimate rates of withdrawal from our recent experience study were not operating in the intended manner. Reworking this part of our valuation model yields the lower normal cost percentages for the hazardous duty groups.
- Total System liabilities are now at \$7.3 billion compared to \$7.2 billion last year. The active liabilities are down slightly from last year, due in part to the hazardous duty coding refinement.
- The reconciliation of the unfunded liability yields an asset loss of \$41 million discussed above and a liability gain of \$321 million. We will provide a breakdown of the liability gain by source at our meeting on Thursday.
- The Employer contribution before reflecting the SEBAC agreement is \$501 million. Because SEBAC limits the past service cost to \$138.4 million, the contribution after SEBAC is \$335 million.

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