

CONNECTICUT TEACHERS'
RETIREMENT SYSTEM

REPORT ON THE ACTUARIAL
VALUATION AS OF
JUNE 30, 1984

January, 1985

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SECTION I

REPORT SUMMARY AND ACTUARIAL CERTIFICATION

William M. Mercer-Meidinger, Inc. was retained by the Connecticut Teachers' Retirement Board to prepare an actuarial valuation of the assets and liabilities of the Connecticut Teachers' Retirement System as of June 30, 1984. The purpose of the valuation was to determine:

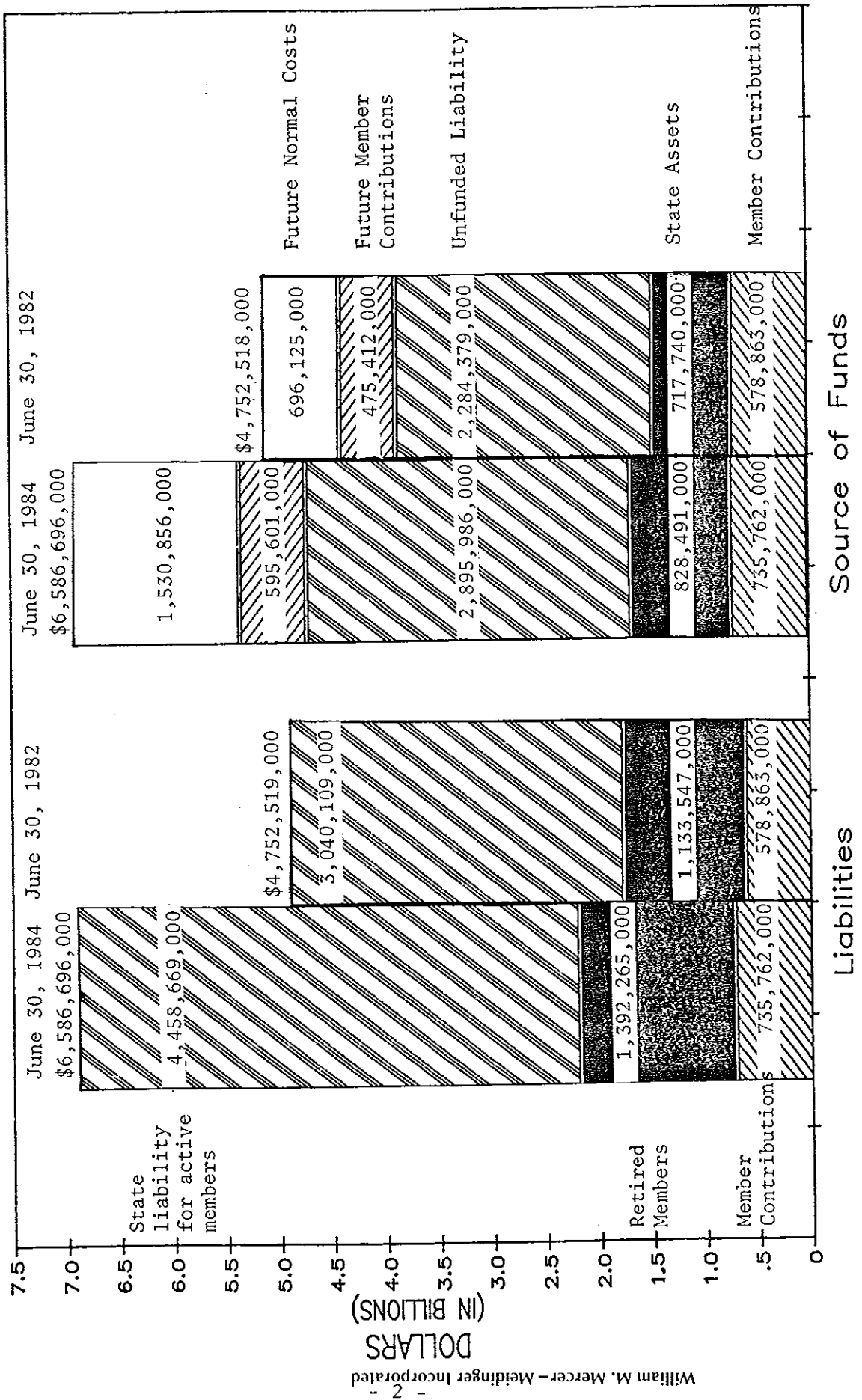
1. the normal cost to meet the actuarial cost of current service;
2. the unfunded actuarial accrued liability;
3. the funded status of benefits earned to date.

A. Report Summary

	<u>Current Valuation (6/30/84)</u>	<u>Prior Valuation (6/30/82)</u>	<u>Percent Change</u>
1. Normal Cost	\$138,192,000	\$ 69,601,000	98.5%
2. Unfunded actuarial accrued liability	2,895,986,000	2,284,380,000	26.8%
3. Assets			
a. Market value	1,696,074,000	1,154,963,000	46.9%
b. Valuation assets	1,564,253,000	1,296,603,000	20.6%
4. Actuarial present value of benefits earned to date			
a. At current average salary	3,138,296,000	2,600,567,000	20.7%
b. At projected final average salary	4,398,687,000	3,244,804,000	35.6%
5. Current annual salaries	886,409,000	769,500,000	15.2%
6. Number of members			
a. Active members	38,418	39,489	(2.7%)
b. Pensioners, beneficiaries and survivors receiving benefits	11,624	10,772	7.9%
c. Terminated vested members not yet receiving benefits	548	739	(25.8%)
d. Total	<u>50,590</u>	<u>51,000</u>	(0.8%)

CONNECTICUT TEACHERS RETIREMENT SYSTEM

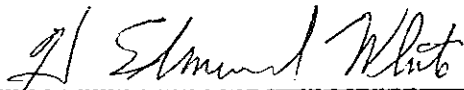
Actuarial Balance Sheet



C. Actuarial Certification

The information and valuation results shown in this report are, to the best of my knowledge, complete and accurate and are based upon:

1. Member census data as of June 30, 1984 submitted by the Board. This data was not audited by us, but appears to be sufficient and reliable for purposes of the report.
2. Financial data as of June 30, 1984 submitted by the State Treasurer's Office. This data was not audited by us, but appears to be sufficient and reliable for purposes of the report.
3. Actuarial assumptions which, in the aggregate, are reasonably related to the experience of the plan and to reasonable expectations and which represent my best estimate of anticipated experience under the plan.
4. Actuarial methods as stated in the report and my interpretation of plan provisions as summarized in the report.



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SECTION II

COMMENTS ON THE VALUATION

A. Changes in plan provisions, actuarial assumptions and cost methods from June 30, 1982 valuation:

1. Plan Changes. No plan changes since the June 30, 1982 valuation affect the calculated cost of the plan.
2. Actuarial Assumptions
 - a. Inflation assumption. This assumption is not explicitly included in the statement of assumptions, but it does underlie the interest, salary increase, and cost-of-living increase assumptions. It was changed from 6% to 5% to produce a more realistic relationship to the interest assumption, which remains 8%.
 - b. Salary increase assumption. Salary increases for the period July 1, 1980 - June 30, 1984 were compared with cost-of-living increases for that period. The comparison showed that salary increases were about four percentage points more than expected in relation to inflation. The Board concluded that this in part compensated for small salary increases in the past and in part was the result of salary increases that are more economically competitive. This pattern of the past few years is expected to continue a few more years. Thus, economically competitive increases of inflation plus 3 points for the first 15 years of a teacher's career and inflation plus 1/2 point thereafter are assumed. Furthermore, all salary increases for July 1, 1984 through June 30, 1988 are assumed to be an additional 2 points higher.
 - c. Interest Assumption. Based on historical rates of return and on the asset allocations targeted to be achieved by June 30, 1989, the expected return of the portfolio is 3.72 points above inflation. Thus, an investment return assumption of inflation plus 3 points should prove conservative over the next 10 years.
 - d. Termination assumption. Experience for the past two years showed significantly higher turnover rates after 10 years of service than prior studies. This is expected to continue. Accordingly, the assumption was changed from a 1% to a 2% annual rate of termination after ten years.
 - e. Disability incidence assumption. Experience for the past two years showed a much lower incidence of disability than had been assumed. Accordingly, rates were modified to be intermediate between this experience and the prior assumption.

B. Analysis of Increase in Unfunded Actuarial Accrued Liability and Normal Cost:

	Unfunded Liability <u>(1,000s)</u>	Normal Cost <u>(1,000s)</u>
1. June 30, 1982	\$2,284,380	\$ 69,601
2. Expected increase in unfunded liability because required contribution was less than full actuarial cost	187,794	-
3. Expected increase in normal cost from pay increases	-	8,603
4. Increase from Public Act 82-91	<u>27,389</u>	<u> </u>
5. Expected 6/30/84 amounts	2,499,563	78,204
6. Increase from experience	-*	40,224 *
7. Increase from assumption changes	<u>396,423</u>	<u>19,764</u>
8. Actual 6/30/84 amounts	2,895,986	138,192

* Pay increases for the two year period were roughly 9.5% more than assumed in the 1982 valuation.

The effect of this was to increase the present value of benefits for active members by roughly 9.5%, or \$450,000,000 (see page 9, items 1.a plus 1.e). Since all of the increase is funded through the normal cost under the actuarial cost method being used, it is increased roughly by \$40,000.

SECTION III

ACTUARIAL VALUATION RESULTS

This section of the report provides further information with respect to the valuation of plan assets and liabilities. First, a financial summary of the assets is shown for the period covered by this report. This is followed by an exhibit showing the development of assets used for purposes of the valuation. Next, detailed information is shown with respect to the determination of the unfunded actuarial accrued liability and the normal cost. Finally, information is presented regarding the funded status of the System.

The valuation of the benefits of a retirement plan involves a determination of the present value of the future benefit amounts that will be paid under the plan. The usual technique, and the one employed in this valuation, is to determine this present value with respect to only present members -- active, retired, survivor and terminated with vested rights. No specific allowance is made for future entrants to the plan. This valuation technique does, however, require a projection of the future amounts that may become payable to each member, a determination of the probability that each such payment will have to be made, and a computation of the discounted value of all probable future payments.

Once the discounted value of all probable future payments for current members has been calculated, the actuarial cost method used allocates a portion of the discounted value to the past and labels it "actuarial accrued liability" and allocates the remainder of the discounted value to the future and labels it the "actuarial cost of current and future service." Once the actuarial cost of current and future service has been calculated the next calculation is to determine the portion of this actuarial cost which is the normal cost for the current fiscal year.

The normal cost for death benefits for active members is handled in a manner different from the method explained above. This normal cost is simply the lump sum value of benefits from expected deaths of active members during the fiscal year.

A. Financial Summary

1. Reconciliation	<u>1982-1983</u>	<u>1983-1984</u>
a. Market value of fund beginning of year	\$1,154,963,000	\$1,635,035,000
b. Contributions		
. State (excluding Health Insurance)	96,798,000	120,163,000
. Teacher (and Health Insurance)	53,166,000	56,385,000
c. Benefit Payments		
. Pensions	(103,791,000)	(114,558,000)
. Refund of contributions	(10,824,000)	(9,730,000)
. Survivorship benefits	(2,293,000)	(2,735,000)
d. Net investment results	447,016,000	11,514,000
e. Market value of fund, end of year	\$1,635,035,000	\$1,696,074,000
2. Net rate of return at market	37.8%	0.7%
3. Change in CPI for Social Security (1st quarter to 1 quarter)	3.5%	3.6%
4. Summary of Investments (Amounts in Millions)		

	<u>Market Value</u> 6/30/82		<u>Market Value</u> 6/30/84		<u>6/30/89</u> <u>Objective</u>
	<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>	<u>%</u>
a. Equity Fund	410.3	35.5%	581.1	34.3%	40%
b. Real Estate Fund	34.0	2.9	120.8	7.1	15
c. Total Equity	444.3	38.4	701.9	41.4	55
d. Fixed Income Fund	613.2	53.1	598.5	35.3	25
e. G.I.C.s	31.8	2.7	44.0	2.6	3
f. Yankee Mac Fund	60.8	5.3	186.5	11.0	12
g. Real Estate Fund	1.8	0.2	2.9	0.1	
h. Total Fixed	707.6	61.3	831.9	49.0	40
i. Cash and STIF	3.1	0.3	150.9	8.9	5
j. Total Investments	1,155.0	100.0	1,684.7	99.3	100
k. Accrued Income	N/A	-	11.4	0.7	N/A
l. Total Market Value	1,155.0	100.0%	1,696.1	100.0%	100%

B. Development of Valuation Assets

	<u>1982 - 1983</u>	<u>1983 - 1984</u>
1. Valuation assets beginning of year	\$1,296,603,000	\$1,401,881,000
2. Contributions	149,964,000	176,548,000
3. Benefit payments	116,908,000	127,023,000
4. Net of transactions	<u>33,056,000</u>	<u>49,525,000</u>
5. Expected rate of return (change in CPI for Social Security +2.0%)	5.5%	5.6%
6. Expected investment results = (5)x(1)+1/2(4)	72,222,000	79,892,000
7. Expected valuation assets end of year (1)+(4) +(6)	\$1,401,881,000	\$1,531,298,000
8. Market value June 30, 1984		1,696,074,000
9. Valuation assets = .8x(7) + .2x(8)		1,564,253,000

C. Determination of Unfunded Actuarial Accrued Liability

1. Unfunded actuarial accrued liability beginning of year	\$2,284,380,000	\$2,410,980,000
2. Plus normal cost	69,601,000	73,777,000
3. Plus interest on (1) and (2) for one year at 5.5%/5.6%	129,469,000	139,146,000
4. Less contributions	96,798,000	120,163,000
5. Less interest on contributions to end of year	3,305,000	4,177,000
6. Additional unfunded actuarial accrued liability effective July 1, 1983 on account of Public Act No. 82-91	27,633,000	-
7. Increase due to change in assumptions	<u>-</u>	<u>396,423,000</u>
8. Unfunded actuarial accrued liability end of year	\$2,410,980,000	\$2,895,986,000

D. Determination of the Normal Cost

1. Present value of retirement, termination and disability benefits

a. Member contributions	\$ 735,762,000 *	
b. Retired members	1,378,738,000	
c. Survivors of deceased members	9,902,000	
d. Terminated members	13,527,000	
e. Active members	<u>4,448,767,000</u>	
f. Total		\$6,586,696,000

2. Actuarial Accrued liability

a. Valuation assets	\$1,564,253,000	
b. Unfunded actuarial accrued liability	<u>2,895,986,000</u>	
c. Total = actuarial accrued liability		\$4,460,239,000

3. Discounted value of future member contributions

595,601,000

4. Actuarial cost of present and future service for active members (1) - (2) - (3)

\$1,530,856,000

5. Present value of future salaries of current members

9,926,680,000

6. Normal cost accrual rate: (4) / (5)

15.4216%

7. Current annual salaries of members

886,409,000

8. Normal cost for retirement, termination and disability benefits: (6) x (7)

136,699,000

9. Normal cost for death benefits for active members

1,493,000

10. Total normal cost: (8) + (9)

\$ 138,192,000

* Shown separately in this report for consistency with presentation of liability numbers in the next section. In previous reports, member contributions were included in the terminated and active member items.

E. Analysis of Funded Status of System

In evaluating the funded status of a public system, two measures are generally looked at:

- . What percentage of the liabilities are covered by the assets, and are coverage ratios improving satisfactorily? (There is not a consensus as to what the coverage ratios ought to be.)
- . What is the ratio of unfunded liabilities to payroll? The point of this test is that a plan can be financially healthy even if the unfunded liability is increasing in dollars, provided it is not increasing as a percentage of payroll of plan members. The reason is that payroll of plan members is one measure of the State's ongoing ability to pay the required contributions. As indicated on page 12, in reviewing these ratios, one has to know whether pay increases are more, less or the same as inflation and whether the number of members is stable, increasing or decreasing.

1. Liability Coverage Percentages

Liabilities of public plans are calculated in three separate ways:

a. Level Percentage of Pay Measure:

For purposes of determining contributions to public plans, the actuarial liability is traditionally calculated as the reserve that is accumulated by contributing every year for every teacher the level percentage of pay that is required for each teacher to fully fund his/her pension on the date he/she retires. Thus, the \$4,460,239,000 actuarial accrued liability shown on the previous page as item D.2.c. is shown on the following page as the 6/30/84 total liability under the level Percentage of Pay Measure.

- b. For purposes of evaluating how well funded is a public plan, a different calculation is used. For this purpose, the value of normal retirement benefits earned to date is used (whether or not these benefits are vested). Two primary variations of this calculation are used:

- . Earned Benefit Measure: The value of the normal retirement benefit earned to date is based on actual pay history.
- . Projected Benefit Measure: The value of the normal retirement benefit earned to date is based on projected pay at retirement.

The following table shows the percentage of liabilities (for all three liability measurements) covered by plan assets. The percentages are shown for the plan as a whole, and separately for the primary classes of liabilities. These classes are member contributions, retired members, and active members. Two sets of numbers are shown for 1984 for the Level Percentage and Projected Measures because they are affected by the assumption change in 1984. The Earned Benefit Measure numbers are not affected by the change.

Level Percentage of Pay Measure

Date	Liabilities (Millions)			Total	Assets (4) (Millions)	Coverage Ratios			
	Members Contri- bution (1)	Retired Members (2)	Active Members (3)			Members Contri- bution	Retired Members	Active Members	Total
6/30/80	\$490.8	\$ 904.3	\$1,472.7	\$2,867.9	\$1,049.3				37%
6/30/82	578.9	1,133.5	1,868.6	3,581.0	1,296.6				36%
6/30/84	735.8	1,392.3	1,935.8	4,063.8	1,564.3				38%
	(Old Assump.)								
6/30/84	735.8	1,392.3	2,332.2	4,460.3	1,564.3				35%
	(New Assump.)								

Earned Benefit Measure

6/30/80	\$490.8	\$ 904.3	\$ 665.0	\$ 2,060.1	\$1,049.3	100%	62%	0%	51%
6/30/82	578.9	1,133.5	888.2	2,600.6	1,296.6	100%	63%	0%	50%
6/30/84	735.8	1,392.3	1,010.3	3,138.3	1,564.3	100%	60%	0%	50%

Projected Benefit Measure

6/30/80	\$490.8	\$ 904.3	\$1,208.6	\$ 2,603.7	\$1,049.3	100%	62%	0%	40%
6/30/82	578.9	1,133.5	1,532.4	3,244.8	1,296.6	100%	63%	0%	40%
6/30/84	735.8	1,392.3	1,906.3	4,034.3	1,564.3	100%	60%	0%	39%
	(Old Assump.)								
6/30/84	735.8	1,392.3	2,270.7	4,398.7	1,564.3	100%	60%	0%	36%
	(New Assump.)								

- (1) Contributions of active members and members with deferred benefits.
- (2) Retired members, beneficiaries, co-participants, and survivors.
- (3) State liability for active members and members with deferred benefits.
- (4) Assets shown are the valuation assets as used in the actuarial valuation to determine contributions.

Comment: Total funded ratios were expected to stay level for the time period shown above because contributions for 1983-1984 were still only 45% of full actuarial cost.

In the future, ratios should increase each year more than they did in the prior year, because the contribution percentage increases each year.

SECTION IV

ACTUARIAL ASSUMPTIONS AND METHODS, PLAN SUMMARY AND PARTICIPANT DATA

This section of the report presents the actuarial assumptions and methods used in the valuation, a summary of the major provisions of the plan, and a reconciliation of member data used in the calculations.

The actuarial assumptions used in this valuation are the same as in the previous valuation except for the termination of employment, salary increase and disability increase assumptions. The changes and their reasons are discussed in "Comments on the Valuation", Section II of this report.

A. Actuarial Assumptions

1. Investment return 8%, compounded annually
2. Mortality The Unisex Pension Table for 1984, set back five years in age for females.
3. Termination of employment rates, based on prior System experience, as follows:

<u>Years of Service</u>	<u>Rate</u>
1-5	10%
6-10	6%
11 and over	2%

4. Salary increases Annual increases of 8% for first 15 years of service; annual increases of 5-1/2% thereafter, plus an additional 2% for all years of service July 1, 1984 through June 30, 1988.
5. Cost-of-living increases Annual increases of 5% in pensions after retirement.
6. Retirement age It is assumed that teachers will retire when first eligible for normal retirement benefits as follows:
 - . after 35 years of service if before age 60
 - . at age 60 if after 20 years of service and before 35 years of service
 - . at 20 years of service if after age 60 and before age 70
 - . at age 70 if after 10 years of service and before 20 years of service
 - . if currently eligible to retire on the valuation date under one of the age and service combinations cited above, it is assumed that the teacher will retire on the following June 30th.

2. Ratio of Unfunded Liability to Member Payroll

Level Percentage of Pay Measure

<u>Date</u>	<u>Member Payroll</u> (Millions)	<u>Unfunded Liability</u> (Millions)	<u>Ratio</u>
6/30/80	\$692.5	\$1,818.6	263%
6/30/82	769.5	2,284.4	297%
6/30/84 (Old Assump.)	886.4	2,499.6	282%
6/30/84 (New Assump.)	886.4	2,896.0	327%

Earned Benefit Measure

6/30/80	\$692.5	\$1,010.8	146%
6/30/82	769.5	1,304.0	169%
6/30/84	886.4	1,574.0	178%

Projected Benefit Measure

6/30/80	\$692.5	\$1,554.4	224%
6/30/82	769.5	1,948.2	253%
6/30/84 (Old Assump.)	886.4	2,470.0	279%
6/30/84 (New Assump.)	886.4	2,834.4	320%

Comment: The increasing percentages reflect both the increase in unfunded liabilities at a rate greater than inflation and the decrease in the number of active members. Because of these factors, the above ratios don't give a precise picture of the financial health of the System. Even so, the significant increase in ratios suggests that State contributions, as a percent of payroll, are not high enough yet.

7. Disability incidence Based on experience of System. Sample rate are:
- | | |
|--------|--------|
| Age 30 | .00059 |
| Age 40 | .00105 |
| Age 50 | .00262 |
8. Active member death benefit 85% of males are married with a spouse 3 years younger, 50% of females are married with a spouse 3 years older; wives have one child at age 25 and second child at age 27.
9. Expenses Paid directly by the State.
10. Valuation of assets The valuation assets are updated with actual contributions and benefit payments, and with interest at a rate equal to the Cost-of-Living Adjustment to Social Security benefits (as determined under prior law for June adjustments), plus two percentage points, for the two year period. This tentative amount is compared with the market value of assets and 20% of the difference is recognized. The starting value used with this technique is the market value of assets as of June 30, 1980.

B. Actuarial Cost Method

The actuarial cost method used in the valuation is known as the frozen entry age actuarial cost method. To determine the initial unfunded actuarial accrued liability as of June 30, 1980 under this method, a normal cost was first determined for each member which is the level percentage of the member's salary needed annually as a contribution from entry age to retirement age to fund her projected benefits. The initial unfunded actuarial accrued liability is the accumulated value of such normal costs for each member from entry age to initial valuation date, less any plan assets. This initial unfunded actuarial accrued liability is redetermined only for changes in plan benefits or actuarial assumptions and so is labeled the "frozen" initial actuarial accrued liability.

The unfunded actuarial accrued liability in subsequent valuations is the prior unfunded plus normal cost less contributions, with interest at a rate equal to the Cost-of-Living Adjustment to Social Security benefits plus two percentage points. For the purpose of determining required contributions by the State, the unfunded actuarial accrued liability is projected forward using the valuation rate of interest.

The normal cost rate is (a) the discounted value of projected benefits less the unfunded actuarial accrued liability, the actuarial value of assets and the discounted value of future member contributions, divided by (b) the present value of future salaries for current members. The normal cost is the normal cost rate multiplied by current salaries of members under assumed retirement age.

Actuarial gains and losses from sources other than inflation are automatically spread over the future service of current members under this method. Actuarial gains and losses from inflation are funded through the unfunded actuarial accrued liability.

The active member's death benefit was valued on a one year term cost basis which produced an annual cost equal to the lump sum value of benefits from expected deaths of active members during the fiscal year.

C. Summary of Major Plan Provisions

An actuarial valuation involves the projection of the amount and timing of future benefit payments. Summarized below are the principal provisions of the plan which were used to estimate future benefit payments.

1. Covered Employees

Any teacher, principal, superintendent or supervisor engaged in service of public schools plus professional employees at state schools of higher education if they choose to be covered.

2. Salary

Amount paid to a teacher as specified in a contract of employment excluding amounts paid for extra duty assignments, coaching, unused sick time, unused vacation or terminal pay.

3. Average Annual Salary

Average of annual salary received during three years of highest salary.

4. Credited Service

One month for each month of service as a teacher in Connecticut public schools, maximum 10 months for each school year. Certain other types of teaching service, State employment, or military service may be purchased at retirement if the member pays one-half of the cost.

5. Normal Retirement

Eligibility: Age 60 and 20 years of service in Connecticut or 35 years of service including at least 25 years of service in Connecticut.

Benefit: 2% times years of credited service times average annual salary (maximum percentage is 75%)
plus

any additional amounts derived from 6th% and voluntary contribution by the teacher.

6. Early Retirement

Eligibility: At any age after the completion of 25 years of service including 20 years of Connecticut service or at or after age 55 after the completion of 20 years of service including 15 years of Connecticut service, with the last 5 years in Connecticut.

Benefit: Actuarially reduced normal retirement benefit.

7. Pro-ratable Retirement

Eligibility: Age 60 and 10 years of service (the last 5 years in Connecticut).

Benefit: 2% less .1% for each year less than 20 years times years of Connecticut service plus 1% times years of other service times average salary.

8. Disability Retirement

Eligibility: Disability prior to age 60 and after 5 years of service in Connecticut if not incurred in performance of duty and without regard to service if incurred in performance of duty.

Benefit: Lesser of:

- . 3% times credited service to date of disability times average annual salary;
- . 1 2/3% times credited service projected to 60 times average annual salary;
- . 50% times average annual salary;
- . 75% times average annual salary less initial Social Security benefit.

9. Termination of Employment

With less than 5 years: Return of 5% contribution with interest.

With 5 or more years: Return of 5% contributions with interest and 1% contributions without interest.

With 10 or more years: 100% vested. Members may elect return of all contributions plus interest on 5% contributions in lieu of vested benefit. Benefit is payable at age 60, but actuarially reduced if normal retirement age is later.

10. Pre-retirement Death Benefits

Lump Sum: \$1,000 for first 5 years of Connecticut service plus \$200 per year for each year of service from 6 to 10 years of service.
Maximum benefit: \$2,000.

Survivor's Benefit: \$200 per month to a single dependent child under age 18 or over 18 if disabled. \$300 per month divided equally among 2 or more such children in a family.

\$300 per month to a surviving spouse or dependent former spouse receiving child support.

\$300 per month to a dependent parent over age 65 if there is no surviving spouse.

11. Form of Annuity

Normal: Partial Refund Option - 75% of total benefit is paid as a life annuity. If 25% of benefits paid prior to death do not exceed 5% contributions plus interest, the difference is paid to beneficiary.

Optional Forms: 5, 10, 15, 20 or 25 year certain and life. 33 1/3%, 50%, 66 2/3%, 75%, or 100% co-participant (if co-participant dies first, benefit reverts to unreduced amount).

12. Cost of Living Allowance

Pension benefit adjustments are made in accordance with increases in the consumer price index, with a minimum of 3% and a maximum of 5% per annum.

13. Contributions

Each is required to contribute 6% of annual salary. The 6th% is refundable to teacher if termination is by reason other than death. The state funds the balance of the liability for benefits with annual contributions determined in accordance with Section 10-183z.

D. Participant Data

1. Retired members, co-participants and beneficiaries

Age	June 30, 1984		June 30, 1982	
	Number	Ave. Mon. Benefit	Number	Ave. Mon. Benefit
- 49	54	\$ 637	50	\$571
50 - 54	151	720	131	633
55 - 59	649	995	547	901
60 - 64	1,792	1,028	1,571	896
65 - 69	2,077	963	2,001	880
70 - 74	2,151	945	2,238	847
75 - 79	1,906	933	1,744	819
80 - 84	1,504	827	1,208	673
85 - 89	498	768	484	493
90 -	298	657	234	493
	<u>11,080</u>	<u>\$ 927</u>	<u>10,208</u>	<u>\$814</u>

2. Terminated members with rights to future benefits	548	\$ 372	739	\$379
3. Survivors and dependents	544	\$ 248	539	\$232
4. Active members				
a. Number	38,418		39,849	
b. Average service	13.1		12.8	
c. Average salary	\$23,070		\$19,490	

The following three pages give the distribution of active members by age at hire and by years of completed service. The next three pages give the distribution by attained age and years of completed service. The average salary numbers shown are tens of dollars (i.e., female average salary of 2,140 equals \$21,400).

William M. Mercer-Meindinger, Incorporated

M & F - DISTRIBUTION BY ENTRY AGE AND SVC

SVC	NO.	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65	TOTAL											
		SAL NO.	SAL NO.	SAL NO.	SAL NO.	SAL NO.	SAL NO.	SAL NO.	SAL NO.	SAL NO.	SAL NO.	SAL NO.											
0	0	80	1271	92	1343	93	1490	110	1780	74	1657	8,1600											
1	1	1196	322	1259	338	1355	254	1517	151	1614	47	1719											
2	0	0	266	1342	277	1428	207	1613	192	1738	117	1762											
3	0	0	378	1389	288	1539	236	1792	197	1826	134	1832											
4	0	0	363	1495	395	1536	268	1818	224	1870	116	1950											
5	1	1595	451	1537	435	1603	261	1874	194	1994	110	2062											
6	0	0	538	1608	460	1759	246	1989	175	1958	93	2050											
7	0	0	507	1717	401	1832	191	1996	150	2152	79	1976											
8	0	0	494	1794	295	1922	177	2047	119	2195	71	2158											
9	0	0	492	1877	311	2049	140	2203	103	2162	83	2129											
10	0	0	785	1957	393	2134	179	2352	129	2249	91	2254											
11	0	0	877	2095	449	2301	186	2390	162	2323	85	2300											
12	0	0	859	2187	432	2361	165	2470	153	2513	100	2509											
13	0	0	914	2297	392	2486	189	2489	156	2444	120	2490											
14	0	0	1063	2406	447	2596	220	2576	180	2534	153	2584											
15	0	0	1120	2513	376	2610	238	2628	194	2614	155	2596											
16	0	0	845	2575	349	2706	199	2627	200	2696	137	2542											
17	0	0	657	2628	306	2690	201	2690	168	2710	105	2668											
18	0	0	584	2649	249	2718	169	2630	182	2633	81	2573											
19	0	0	588	2715	225	2655	153	2631	129	2724	73	2746											
20	0	0	435	2719	211	2731	147	2626	122	2707	49	2691											
21	1	2825	390	2776	225	2765	161	2737	107	2667	34	2698											
22	0	0	344	2804	259	2864	141	2730	86	2681	24	2840											
23	0	0	281	2844	255	2804	124	2713	77	2681	35	2764											
24	0	0	264	2872	237	2807	125	2769	54	2676	21	2745											
25	0	0	252	2907	271	2800	119	2765	33	2747	9	2541											
26	0	0	237	2935	239	2936	85	2766	27	2673	6	2703											
27	0	0	204	2904	217	2935	79	2862	24	2689	10	2679											
28	0	0	189	2926	183	2913	72	2793	14	2853	1	2880											
29	0	0	177	2959	187	2941	49	2814	18	3193	2	2682											
30	0	0	157	2922	157	2945	34	2996	5	2374	0	0											
31	0	0	153	3053	112	2996	32	2798	10	2534	0	0											
32	0	0	154	3066	100	3002	17	2828	5	2818	1	2757											
33	0	0	111	3009	80	2959	14	3155	2	4610	0	0											
34	1	2492	107	3033	61	3020	8	3059	1	3047	0	0											
35	0	0	68	3065	41	2995	6	2930	0	0	0	0											
36	0	0	49	2992	32	3197	6	2658	0	0	0	0											
37	0	0	25	2978	14	2682	2	3304	1	3384	0	0											
38	0	0	19	2907	8	2845	1	2807	0	0	0	0											
39	0	0	10	2785	5	3016	0	0	0	0	0	0											
40	0	0	6	3198	3	2838	0	0	0	0	0	0											
41	0	0	11	3007	1	3624	0	0	0	0	0	0											
42	0	0	9	2749	2	3182	0	0	0	0	0	0											
43	0	0	5	3309	0	0	0	0	0	0	0	0											
44	0	0	5	2937	2	2929	0	0	0	0	0	0											
45	0	0	1	2763	0	0	0	0	0	0	0	0											
46	0	0	3	2695	0	0	0	0	0	0	0	0											
47	0	0	1	2330	0	0	0	0	0	0	0	0											
48	0	0	0	0	0	0	0	0	0	0	0	0											
49	0	0	1	3543	0	0	0	0	0	0	0	0											
TOTAL	4	202715853	2304	9812	2330	5194	2315	3927	2290	2320	2266	928	2292	299	2166	71	2169	9	1947	1	3748	38418	2307

William M. Mercer-Meidinger, Incorporated

MALES - DISTRIBUTION BY ATTAINED AGE AND SVC

SVC	≤ 19		20-24		25-29		30-34		35-39		40-44		45-49		50-54		55-59		60-64		≥ 65		TOTAL			
	NO.	SAL	NO.	SAL	NO.	SAL	NO.	SAL	NO.	SAL	NO.	SAL	NO.	SAL	NO.	SAL	NO.	SAL	NO.	SAL	NO.	SAL		NO.	SAL	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

