

William M. Mercer—Meidinger, Incorporated

ACTUARIAL VALUATION REPORT

STATE OF CONNECTICUT
STATE TEACHERS'
RETIREMENT SYSTEM

AS OF JUNE 30, 1985

William M. Mercer—Meidinger, Incorporated
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ABOUT THIS REPORT

The report has been prepared by William M. Mercer—Meidinger, Incorporated to:

- Present the results of an actuarial valuation of the State Teachers' Retirement System as of June 30, 1985;
- Review experience under the System for the year ended June 30, 1985;
- Provide to the System the contribution required under Public Act 79-436 (as amended) for the year ending June 30, 1987; and
- Provide supplementary information concerning the financial status of the System.

The report is divided into three sections. The Summary section provides highlights and the actuarial certification. Essentially, the Summary reduces to writing the content of a presentation made to the State Teachers' Retirement Board in January, 1986. Many users of this report may find that all the information they need is contained in the Summary.

The second section of this report -- Results -- includes backup for the Summary section and additional information about the actuarial valuation.

The third section of the report -- Basis -- describes the actuarial assumptions and methods, the plan and the participant data used in the actuarial valuation process.

SUMMARY AND ACTUARIAL CERTIFICATION

The following table shows important results of the actuarial valuation and other statistics. (Financial items in millions of dollars):

	Current Valuation <u>(6/30/85)</u>	Prior Valuation <u>(6/30/84)</u>	Percent Change
Required Contributions under P.A. 79-436 for fiscal year shown	\$ 204.0 (Fiscal 1987)	\$ 175.3 (Fiscal 1986)	16.4%
Liabilities*	\$4,882.5	\$4,398.7	11.0%
Assets at Market Value	\$2,157.9	\$1,696.1	27.2%
Funded ratio (assets divided by liabilities)	44.2%	38.6%	14.6%
Current annual salaries	\$ 975.2	\$ 886.4	10.0%
Number of teachers			
Active teachers	39,085	38,418	1.7%
Retired teachers, beneficiaries, and other inactive members			
	<u>12,367</u>	<u>12,172</u>	<u>1.6%</u>
Total	51,452	50,590	1.7%

*As defined in this section. Based on service to date and projected earnings at retirement.

Why the Contribution Changed

As shown on the preceding page, the contribution increased from \$175.3 million for fiscal 1986 to \$204.0 million for fiscal 1987. The increase of \$28.7 million comes from three sources as follows:

Fiscal 1986 Contribution: \$175.3

Pension costs are calculated to be level as a percent of payroll. Since payroll increased as a result of anticipated raises and a net increase in the number of covered teachers, the pension cost in dollars also went up. The amount of the increase is: + 12.8

Contributions under Public Act 79-436 are a percentage of the full actuarial contributions. The percent is 65 percent for fiscal 1986 and 70 percent for fiscal 1987. The increase in the percentage increased the contribution by: + 15.9

The plan contribution is affected by experience different than expected as follows:

- Investment return at market was 22.8 percent. To insulate contributions from dramatic swings due to market fluctuations, an actuarial "smoothing" technique is used to dampen fluctuations. The smoothed assets returned 11.9 percent -- still in excess of the 8 percent expectation. This reduced costs by: - 1.4
- As mentioned above, salaries are expected to increase, which increases costs. However, salaries increased more rapidly than expected; they were assumed to increase by 8.7 percent and they actually increased by 10.7 percent. Since pensions are based on salaries, this increased expected pensions and thus increased costs by: + 1.4
- All other gains and losses offset each other: 0.0

Fiscal 1987 Contribution: \$204.0

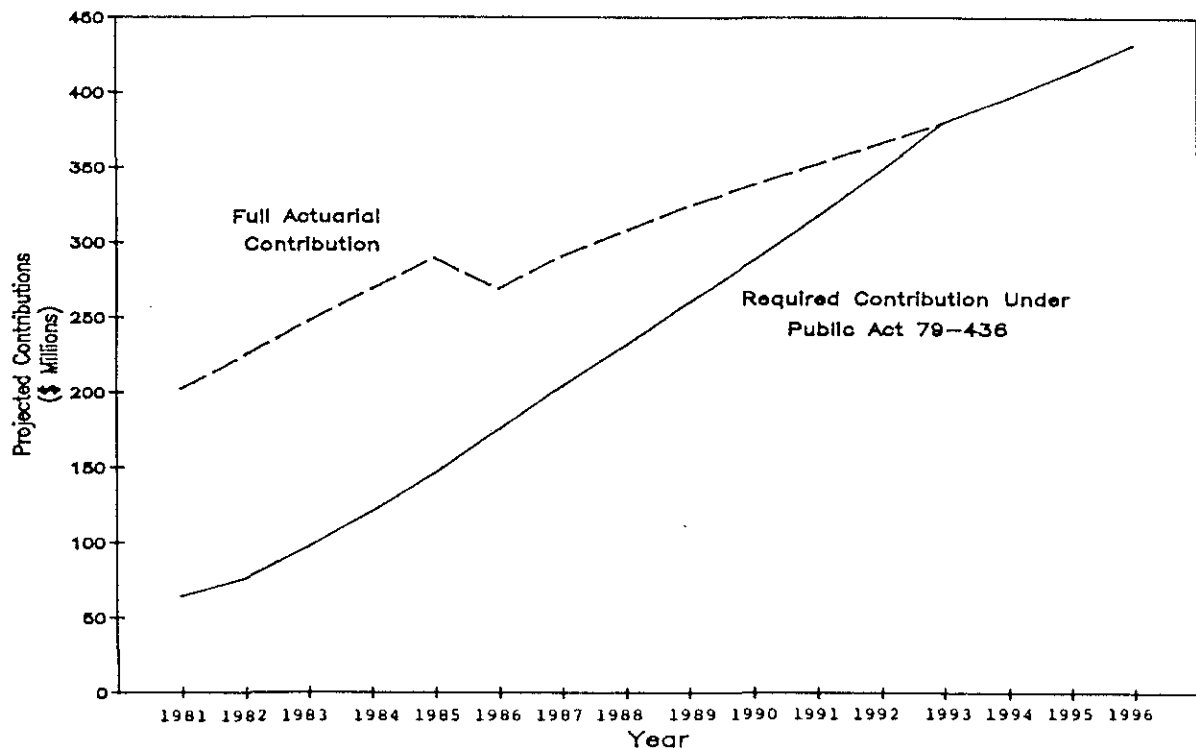
It is especially interesting to note that, in total, actual experience during fiscal 1985 had no impact on the fiscal 1987 contribution. While actuarial assumptions must be continually monitored, we feel that this is compelling evidence to leave the current actuarial assumption package in place for the next year.

Future Contributions

As part of the actuarial valuation process, we prepared projections of future contribution levels. The following paragraphs describe the results of these projections.

Graph 1 illustrates estimated future contribution levels in millions of dollars. Also illustrated is the "full actuarial contribution". (Under law, the State funds a specified percentage of the full actuarial contribution. For fiscal 1987, the actual contribution is 70 percent of the full actuarial contribution. This percentage will increase by 5 percent each year until fiscal 1993, at which the full actuarial contribution will be funded.)

Graph 1
Projected Contributions Based on the
June 30, 1985 Valuation



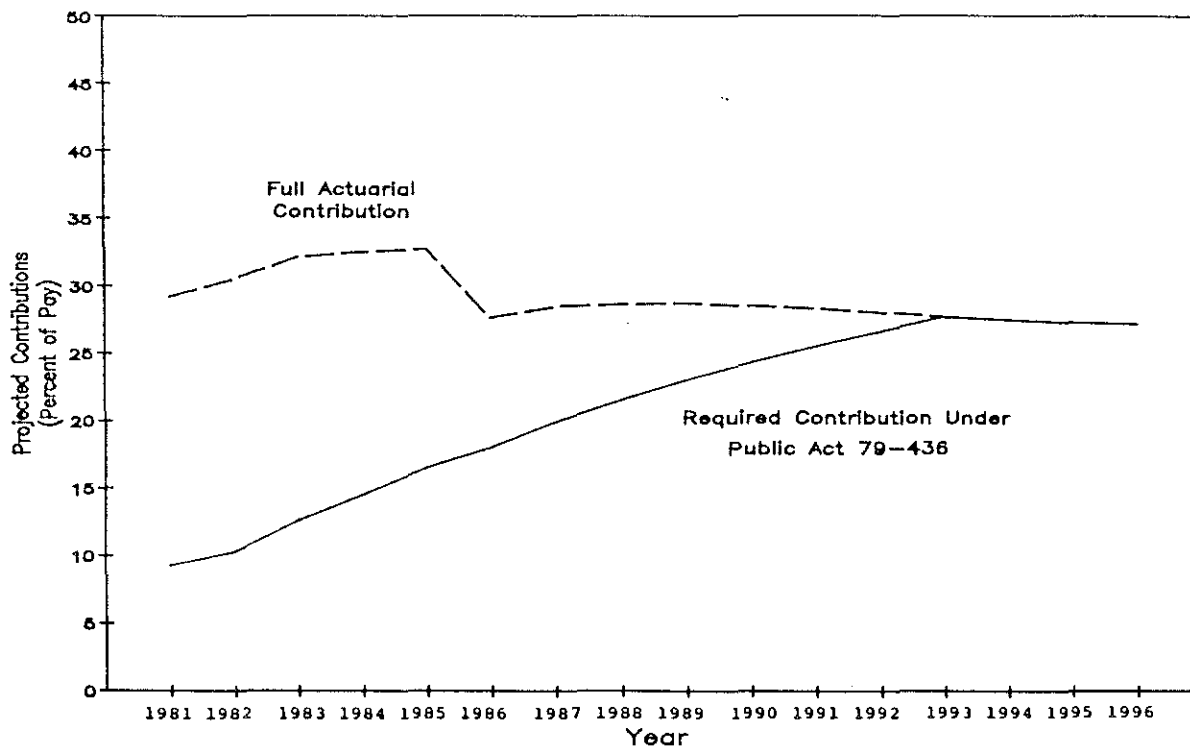
Points to be noted about Graph 1 are:

- The dollar amount of the contributions rises about \$26 million per year until the full actuarial contribution is reached in fiscal 1993. After that, contributions increase more slowly, initially by about \$18 million per year.

- The decrease in the full actuarial contribution in fiscal 1986 resulted from the following sequence of events:
 1. In preparing the June 30, 1984 actuarial valuation (which is used to determine fiscal 1986 costs), it was noticed that Teachers' salaries had increased substantially more than assumed. Further, it was felt this was a trend and not an aberration.
 2. Accordingly, assumed future salary increases were increased. This change increased costs to a level \$55 million higher than expected.
 3. The State was unable to absorb the unexpectedly high cost. Accordingly, the funding law was changed as follows:
 - a. Payments to amortize unfunded liabilities were changed from level dollar installments to payments that will remain level as a percent of payroll. This change reduced the current contribution.
 - b. The percentage of the full actuarial contribution payable for fiscal 1986 was increased from 55 percent to 65 percent.
 4. The net effect of the changes in assumptions and funding law was to reduce the full actuarial contribution. The actual contribution was about \$6 million larger than had originally been expected.

Graph 2 illustrates projected contributions as a percent of payroll.

Graph 2
Projected Contributions Based on the
June 30, 1985 Valuation



Until the full actuarial contribution is reached in 1993, contributions will increase faster than inflation. This will require fresh revenues each year and should be budgeted accordingly. Conversely, after 1993 contributions should increase in tandem with inflation and thus remain approximately level as a percent of State revenues.

Funded Status of System

The funded status of the System is measured by comparing "assets" with "liabilities".

In the following paragraphs, "assets" represent the market value of the fund on June 30, 1985. "Liabilities" are based on the methodology used in Government Accounting Standards Board (GASB) Exposure Draft on Accounting for Public Employee Pension Plans. Essentially, these liabilities are based on service to date and projected earnings at retirement.

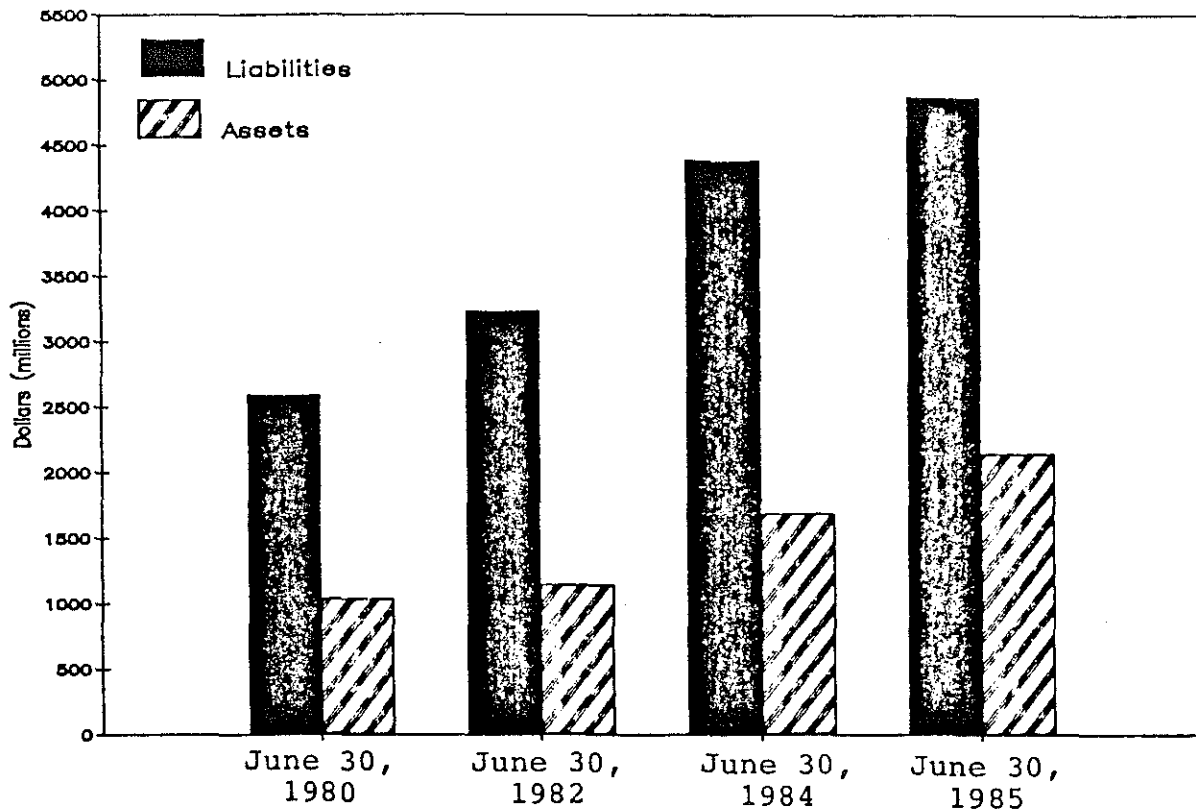
The funded status of the System as of June 30, 1985 is summarized in the following table (in millions):

Liabilities:

Retired Teachers, Beneficiaries and other inactive members	\$1,534.6
Active Teachers	
• Member Contributions	822.9
• State Provided Benefits based on Years of Credited Service to June 30, 1985	
- Using <u>current</u> 3-year average pay	\$1,140.0
- Additional liability using <u>projected</u> pay at retirement	<u>1,385.0</u>
- Total State liability	<u>2,525.0</u>
Total Liabilities	\$4,882.5
Assets:	2,157.9
Funded Ratio (Assets divided by Liabilities)	44.2%

Graph 3 summarizes the funded status of the System for the last four actuarial valuations.

Graph 3
Comparison of Liabilities and Assets

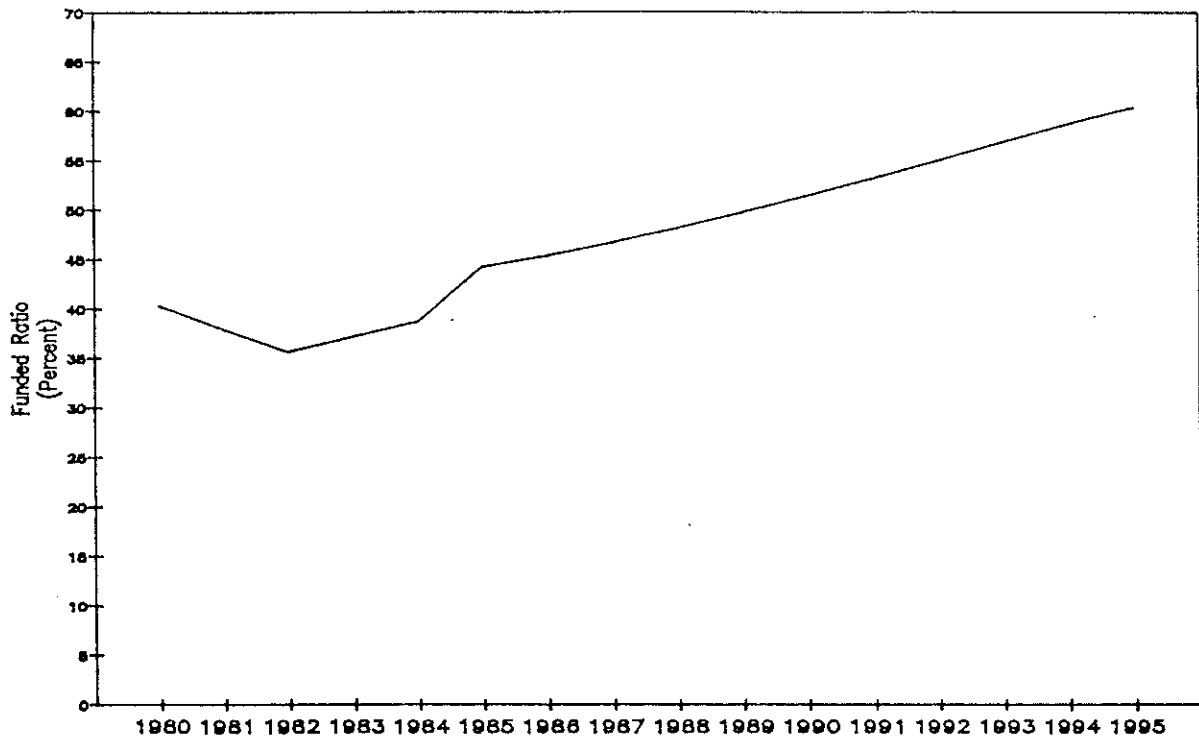


Points to note about Graph 3 are:

- Between 1980 and 1982: Liabilities increased normally but the investment return averaged only 3.5 percent per year due to down markets. As a result, the funded ratio went down.
- Between 1982 and 1984: Liabilities increased more than expected because of the assumed change in future pay increases. However, the investment return averaged 17.8 percent per year. The unexpected investment return more than offset the unexpected pay increases, so the funded ratio went up.
- Between 1984 and 1985: Liabilities increased as expected, but the investment return was 22.8 percent. The result was the funded ratio increased significantly.

Graph 4 illustrates historical, current and projected future funded ratios:

Graph 4
Projected Funded Ratios Based on
June 30, 1985 Valuation



The changes in the ratios to date as illustrated in Graph 4 primarily reflect asset performance. Accordingly, the future projection should be considered more of a trend line than a true projection. Fluctuations in market value will result in a "bumpy" line in practice.

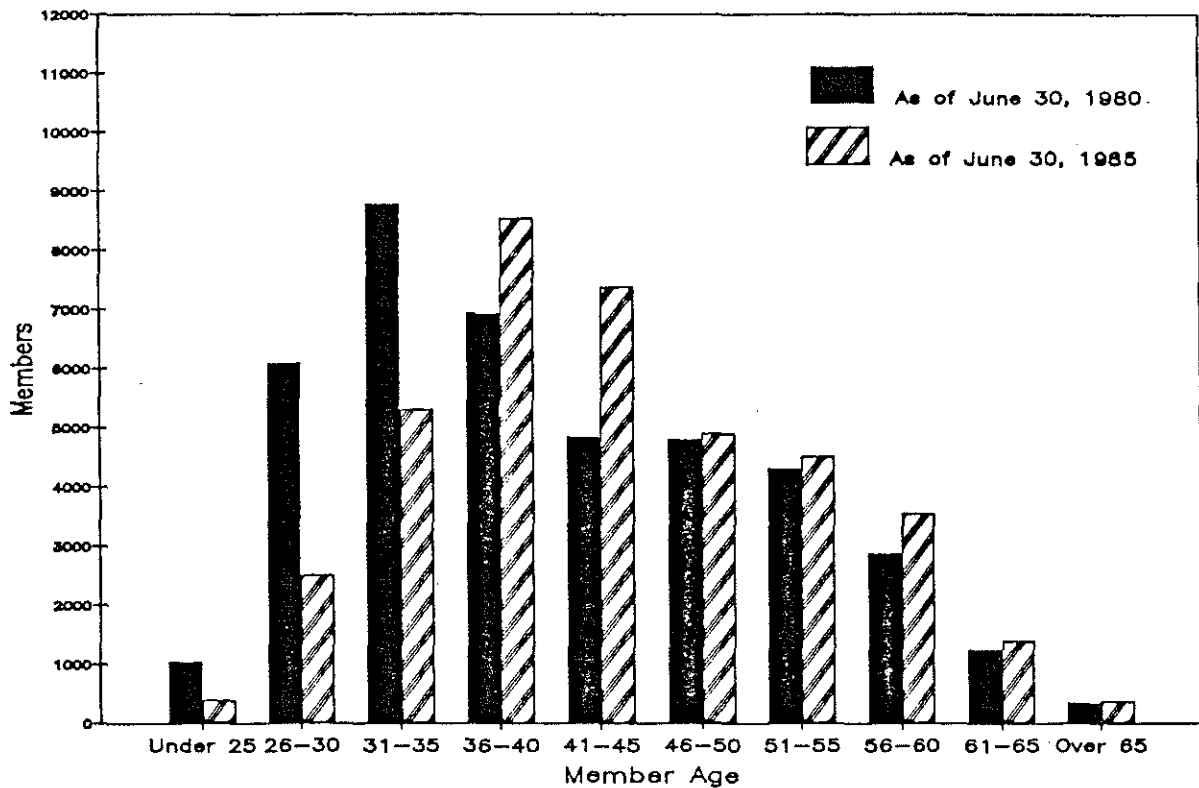
The primary conclusion to be drawn from Graph 4 is that the funded ratio is heading upward. The fact that the funded ratio is increasing relatively slowly is not alarming; the key item is that the System is heading in the right direction.

Information about Active Teachers

A routine by-product of the actuarial valuation process is a demographic analysis of active teachers. We compared the current population with the corresponding group five years earlier. Usually, the results of such an analysis are not exciting. In the case of the State Teachers, however, the results were somewhat revealing.

Graph 5 illustrates the distribution of teachers by age.

Graph 5
Distribution of Members by Age

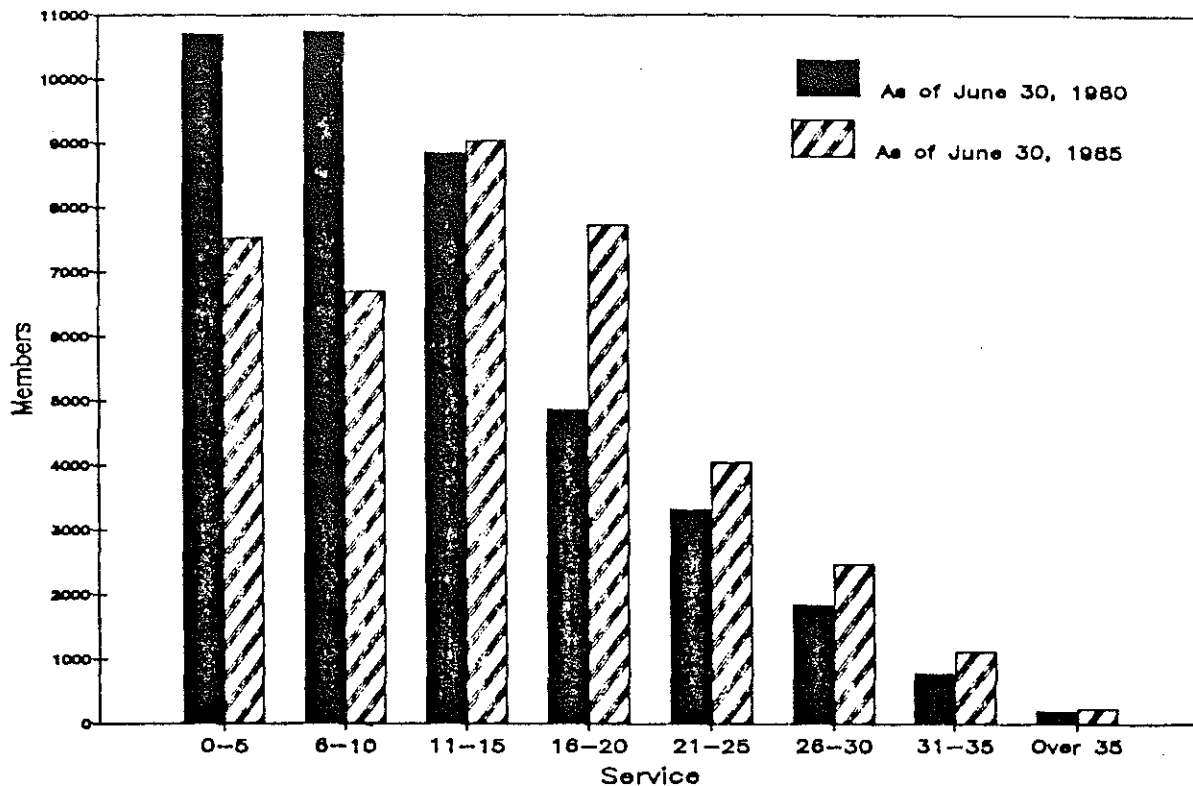


Points to note about Graph 5 are:

- Many fewer teachers are being hired under age 30; many more teachers are being hired at older ages. For example, there are 500 more teachers in the 41-45 age group currently than there were in the 36-40 age group five years ago.
- The number of teachers retiring will double 10 to 15 years from now when the age 41-45 group gets to retirement age.

Graph 6 illustrates the distribution of teachers by years of service.

Graph 6
Distribution of Members by Years of Service



Points to note:

- Many of the short service teachers five years ago have terminated.
- The current group of teachers between 11 and 20 years of service are the survivors of the large number of teachers hired in the late 1960's and early 1970's. It is that group of teachers that will cause the number of annual retirements to double from current retirements when they reach retirement age.

But what does this all mean? In the near term, not much; no action is needed. In the long run, however, two conclusions may be drawn. First, hiring teachers at older ages may alter the definition of a "career" teacher, which should be considered whenever changes to the benefits provided by the System are reviewed. Second, the System will become more of a "Retired" System than an "Active" System when the large wave of retirements hits in 10 or 15 years.

Other Important Issues

Two external forces could have an important effect on the financial state of the System:

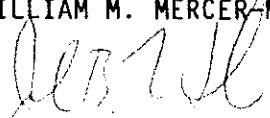
- Minimum Pay. The adoption of minimum salary legislation for teachers will raise pension costs. It is imperative to the financial stability of the System that the pension cost impact of this legislation be understood in advance of enactment.
- Social Security. Mandatory Social Security coverage for teachers seems to be coming. Most experts agree that the question is "when", not "if". Potentially, this coverage could disrupt benefits and funding of the System. We suggest that this issue be studied sooner rather than later.

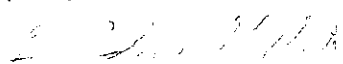
Actuarial Certification

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

- Member census data as of June 30, 1985 submitted by the Board. This data was not audited by us, but appears to be sufficient and reliable for purposes of the report.
- Financial data as of June 30, 1985 submitted by the State Treasurer's Office and the Board. This data was not audited by us, but appears to be sufficient and reliable for purposes of the report.
- Actuarial assumptions which, in the aggregate, are reasonably related to the experience of the plan and to reasonable expectations and which represent our best estimate of anticipated experience under the plan.
- Actuarial methods and System provisions as shown in this report.

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RESULTS OF VALUATION

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 plan year ended June 30, 1985. 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, the actuarial gain (loss) for the plan year, the normal cost, and an analysis of the sources of actuarial gain (loss). Then the development of the contributions for fiscal 1987 as certified to the Board in accordance with Public Act 79-436 is presented. After that a detailed schedule of projected contributions is given. 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.

WARNING: Be careful talking about liabilities in an actuarial sense -- terminology used in practice is confusing. Technically, the liability discussed in the Highlights is called the "Actuarial Present Value of Credited Projected Benefits". This isn't the same as the "Actuarial Accrued Liability" discussed in this section.

A. Financial Summary

1. Reconciliation

a. Market value of fund, beginning of year	\$1,696,074,000
b. Contributions	
o State (excluding Health Insurance)	145,959,000
o Teacher (and Health Insurance)	61,598,000
c. Benefit Payments	
o Pensions	(125,453,000)
o Refund of contributions	(11,466,000)
o Survivorship benefits	(2,470,000)
d. Net investment results	<u>393,672,000</u>
e. Market value of fund, end of year	\$2,157,914,000

2. Net rate of return at market 22.8%

3. Change in CPI for Social Security
(1st quarter to 1st quarter) 3.6%

4. Summary of Investments (Amounts in Millions)

	Market Value 6/30/84		Market Value 6/30/85		6/30/89 Objective
	Amount	%	Amount	%	%
a. Equity Fund	\$ 581.1	34.3%	\$ 815.8	37.8	40%
b. Real Estate Fund	<u>120.8</u>	<u>7.1</u>	<u>221.9</u>	<u>10.3</u>	<u>15</u>
c. Total Equity	\$ 701.9	41.4	\$1,037.7	48.1	55
d. Fixed Income Fund	\$ 598.5	35.3	\$ 720.2	33.4	25
e. G.I.C.s	44.0	2.6	31.8	1.5	3
f. Yankee Mac Fund	186.5	11.0	225.5	10.4	12
g. Real Estate Fund	<u>2.9</u>	<u>0.1</u>	<u>3.5</u>	<u>0.1</u>	<u>—</u>
h. Total Fixed	\$ 831.9	49.0	\$ 981.0	45.4	40
i. Cash and STIF	<u>150.9</u>	<u>8.9</u>	<u>124.9</u>	<u>5.8</u>	<u>5</u>
j. Total investments	\$1,684.7	99.3	\$2,143.6	99.3	100
k. Accrued Income	<u>11.4</u>	<u>0.7</u>	<u>14.3</u>	<u>.7</u>	N/A
l. Total Market Value	\$1,696.1	100.0%	\$2,157.9	100.0%	100%

B. Development of Valuation Assets

In order to smooth the volatile movement of the market value of assets from year to year, an "actuarial value of assets" is determined each year. This value is used to determine the unfunded actuarial accrued liability.

It is calculated by first projecting the beginning of the year value to the end of the year with the expected rate of return and with the actual contributions less benefit payments that accumulated during the year. The resulting figure represents the "expected actuarial value" assuming a return on assets equal to the actuarial assumption. In order to reflect actual investment results, an adjustment is then made equal to 20 percent of the difference between the expected actuarial value and the actual market value of the fund. The resulting value is further modified if it is less than 80 percent or greater than 120 percent of market value.

1. Actuarial value of assets, beginning of year	\$1,564,253,000
2. Contributions	207,557,000
3. Benefit payments	<u>139,389,000</u>
4. Net of transactions	\$ 68,168,000
5. Expected rate of return (change in CPI + 3.0%)	6.6%
6. Expected investment results: (5) x ((1) + 1/2(4))	<u>105,490,000</u>
7. Expected actuarial value of assets, end of year: (1) + (4) + (6)	\$1,737,911,000
8. Market value, June 30, 1985	<u>2,157,914,000</u>
9. Difference: (8) - (7)	\$ 420,003,000
10. 20% of Difference	<u>84,001,000</u>
11. Actuarial value of assets, June 30, 1985: (7) + (10)	\$1,821,912,000

C. Determination of the Unfunded Actuarial Accrued Liability, Actuarial Gain or Loss and Normal Cost

The cost method used for this plan is known as the entry age normal method. Under this method, the normal cost for retirement benefits for each member is the level percentage of the member's salary needed annually as a contribution from entry age to retirement age to fund her projected benefit. The actuarial accrued liability is the accumulated value of such normal costs for each member from entry age to the date of the current valuation. The unfunded actuarial accrued liability is the excess of the actuarial accrued liability over the value of plan assets.

The actuarial cost method was changed from the frozen entry age cost method by "unfreezing" the unfunded actuarial accrued liability and redetermining it each year. The purpose of this change is to keep a reasonable allocation of liability between the normal cost and the unfunded actuarial accrued liability. (The prior method resulted in a large increase in the normal cost in the June 30, 1984 valuation, most of which logically should have been allocated to the unfunded actuarial accrued liability.)

1. Unfunded Actuarial Accrued Liability

a. Actuarial accrued liability of retirement benefits	
i. Member contributions	\$ 822,884,000
ii. Retired members	1,520,778,000
iii. Survivors of deceased members	13,822,000
iv. Terminated members	8,252,000
v. Active members	<u>2,956,361,000</u>
	\$5,322,097,000
b. Actuarial value of assets	\$1,821,912,000
c. Unfunded actuarial accrued liability: (1.a) - (1.b)	3,500,185,000

2. Determination of Actuarial Gain (Loss)		
a.	Unfunded actuarial accrued liability on June 30, 1984	\$3,261,067,000*
b.	Normal cost for the year	107,293,000*
c.	Interest on (a) and (b) for one year at 8 percent	269,469,000
d.	State pension contribution for the plan year	(145,959,000)
e.	Interest on contribution at 8 percent	<u>(7,228,000)</u>
f.	Expected unfunded actuarial accrued liability on June 30, 1985: (a) + (b) + (c) - (d) - (e)	\$3,484,642,000
g.	Adjustment of unfunded liability due to teachers purchasing credited service at retirement	1,621,000
h.	Unfunded actuarial accrued liability (item 1.c)	<u>3,500,185,000</u>
i.	Actuarial gain (loss): (f) + (g) - (h)	\$ (13,922,000)
3. Normal cost		
a.	Normal cost as dollar amount	\$ 117,505,000
b.	Current annual salary of members	975,248,000
c.	Normal cost as percentage of salaries	12.049%

* Restated under entry age normal cost method.

4. Reconciliation of expected to actual unfunded actuarial accrued liability.

The expected unfunded actuarial accrued liability was \$3,484,642,000. This compares with the actual unfunded actuarial accrued liability of \$3,500,185,000, which is \$15,543,000, or 0.45 percent higher than expected. The primary sources of this net increase are:

● Increase in unfunded State liability from teachers purchasing credited service at retirement	\$ 1,621,000
● Asset gain from an 11.9 percent recognized rate of return as compared with the 8 percent assumed	(41,630,000)
● Salary increase loss from salary increases 2.0 percent more than assumed	44,919,000
● Post-retirement mortality loss because retirees lived longer than expected	13,678,000
● Cost-of-living increase gain because July 1, 1985 increase was 4.1 percent instead of the 5 percent expected	(11,493,000)
● All other sources	<u>8,448,000</u>
● Net increase over expected	\$15,543,000

Comments:

- The net increase of less than one half of one percent over the expected unfunded actuarial accrued liability is quite small. Because future interest rates and salary increases are not precisely predictable, expected liabilities may not be as close to actual liabilities each year in the future.
- The asset gain approximately offset the salary increase loss. These assumptions were established with the intention that gains from one would offset losses from the other over a period of years, if not on a year-by-year basis.

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- The post-retirement loss probably will keep occurring each year. It will take several more years' experience, however, to establish how large a loss is expected on average.
- The cost-of-living increase gain is not expected to keep occurring each year. The current situation of high interest and low inflation is expected to be temporary.
- Actuarial assumptions should be reviewed carefully each year but probably should not be changed again until fiscal 1993, when the percentage of the full actuarial contribution payable becomes 100 percent.

D. Development of Fiscal 1987 Contribution

The contribution for fiscal 1987 is based on the expected June 30, 1986 unfunded actuarial accrued liability and the estimated July 1, 1986 normal cost. The expected June 30, 1986 unfunded actuarial accrued liability is calculated using the same procedure as on page 17 for calculating the expected June 30, 1985 unfunded actuarial accrued liability. The July 1, 1986 normal cost was estimated from the July 1, 1985 normal cost based on the best information the Board had regarding pay raises, which was that they would average 11 percent, and on a previous actuarial study showing that the normal cost should increase about one point less than the average pay increase. Thus the normal cost is estimated to increase 10 percent.

Public Act 79-436 requires that plan changes after 1980 be funded separately by contributions of normal cost plus 30-year amortization payments. Thus in the table below, the unfunded actuarial accrued liability and the contribution for Public Act 82-91 is developed separately. That plan change had no normal cost because it only affected retired members.

	<u>Plan in Effect</u> <u>6/30/80</u>	<u>Public</u> <u>Act 82-91</u>	<u>Total</u>
1. Unfunded actuarial accrued liability as of June 30, 1985	\$3,473,060,000	\$27,125,000	\$3,500,185,000
2. Plus July 1, 1985 normal cost	117,505,000	-	117,505,000
3. Plus interest on (1) and (2) for one year at 8 percent	287,245,000	2,170,000	289,415,000
4. Less contributions	(173,891,000)	(1,421,000)	(175,312,000)
5. Less interest on (4) to end of year	<u>(8,611,000)</u>	<u>(70,000)</u>	<u>(8,681,000)</u>
6. Projected unfunded actuarial accrued liability as of June 30, 1986	\$3,695,308,000	\$27,804,000	\$3,723,112,000
7. Level percentage amortization payment (40/27 years)	151,858,000	1,450,000	N/A
8. July 1, 1986 normal cost: 1.1 x (2)	<u>129,256,000</u>	<u>-</u>	N/A
9. Total	\$ 281,114,000	\$ 1,450,000	N/A
10. 70 percent of (9) for plan in effect June 30, 1980	196,780,000	N/A	N/A
11. Adjustment for payment quarterly in advance: x 1.029043	202,495,000	1,492,000	203,987,000

E. Projected Contributions

The following table of projected contributions is provided to give the reader of this report some insight into the progression of required contributions in the future which will result from funding the System in accordance with Public Act 79-436, as amended in 1985.

The fundamental question to be addressed in reviewing the table of projected contributions is how able is the State of Connecticut to pay the required contributions? This question cannot be answered merely by looking at the estimated dollar amounts of the contributions in the future. It has to be answered by comparing the expected tax revenues as increased by inflation with the expected required contributions as increased by inflation.

To get some measure of how increasing contributions will compare with increasing tax revenues, contributions each year are shown as a percentage of expected teacher salaries, provided they increase each year by the assumed inflation rate of 5 percent.

It is important to note that the projections assume the salary increase pattern which was used in this valuation. If legislation is enacted which increases teachers' salaries, that would increase future contributions beyond the numbers in the following table.

The increases in future normal costs each year are based on the 1985 actuarial modeling study. The projections assume that the number of active members stays constant at 39,085 and that all experience gains and losses offset each other.

The unfunded actuarial accrued liability (UAAL) is shown as of the beginning of the fiscal year. The historical normal costs and UAALs are taken from the actuarial reports. The normal cost and UAAL for fiscal 1985 are based on the revised cost method. The historical full actuarial contributions are taken from the actuary's certification to the Board.

The full actuarial contributions and the required contributions are based on payments annual in advance through fiscal 1982 and quarterly in advance after that.

William M. Mercer - Meidinger Incorporated

Connecticut Teachers Retirement System
 Projected Contributions based on June 30, 1985 Valuation
 (in thousands)

Fiscal Year Ending	Normal Cost	UAAL Beginning of Year	Full Actuarial Contribution		Funding Percentage	Required Contribution under Public Act 79-436		Projected Teachers Salaries
			\$ Amount	% of Pay		\$ Amount	% of Pay	
Actual Contributions through June 30, 1986								
1981	61032	1818569	202241	29.2%	Term Fund	64208	9.3%	692547
1982	64694	2055025	216933	29.6%	35%	75927	10.3%	734100
1983	69601	2284380	238861	31.0%	40%	96798	12.6%	769500
1984	73777	2410980	273348	33.1%	45%	120163	14.5%	825888
1985	107293	3261067	289579	32.7%	50%	145959	16.5%	886409
1986	117505	3500185	269102	27.6%	65%	175312	18.0%	975248
Projected Contributions after June 30, 1986								
1987	129256	3723112	290771	28.4%	70%	203987	19.9%	1024010
1988	136320	3946469	307532	28.6%	75%	231041	21.5%	1075211
1989	143489	4166930	324284	28.7%	80%	259756	23.0%	1128971
1990	148233	4382634	338344	28.5%	85%	287852	24.3%	1185420
1991	152978	4591231	352110	28.3%	90%	317081	25.5%	1244691
1992	158144	4790963	365942	28.0%	95%	347740	26.6%	1306926
1993	163626	4980075	379656	27.7%	100%	379656	27.7%	1372272
1994	169319	5156741	396078	27.5%	100%	396078	27.5%	1440885
1995	175434	5336453	413463	27.3%	100%	413463	27.3%	1512930
1996	182181	5518901	432053	27.2%	100%	432053	27.2%	1588576
2001	221296	6457293	539876	26.6%	100%	539876	26.6%	2027471
2006	277806	7379742	684270	26.4%	100%	684270	26.4%	2587623
2011	370583	8152681	889812	26.9%	100%	889812	26.9%	3302536
2016	484702	8557479	1141583	27.1%	100%	1141583	27.1%	4214966
2021	618616	8232551	1456981	27.1%	100%	1456981	27.1%	5379483
2026	789529	6555734	1859518	27.1%	100%	1859518	27.1%	6865735
2031	1007661	2561179	2373268	27.1%	100%	2373268	27.1%	8762611
2033	1110946	0	1143211	11.8%	100%	1143211	11.8%	2550770

F. Analysis of Funded Status of System

The following three tables provide information as to the funded status of the plan.

1. Comparative Summary of Assets and Total Actuarial Present Value of Credited Projected Benefits.

Fiscal Year Ended June 30	Assets at Market Value	Total Actuarial Present Value of Credited Projected Benefits (1)	Funded Ratios (2)
1980	\$1,049,306,000	\$2,603,702,000	40%
1982	1,154,963,000	3,244,804,000	36%
1984	1,696,074,000	4,398,687,000 (3)	39% (3)
1985	2,157,914,000	4,882,540,000	44% (4)

(1) The actuarial present value of credited projected benefits is a standardized disclosure measure of the accrued pension benefit obligation. This measure is the discounted amount of benefits estimated to be payable in the future as a result of member service to date, computed by attributing an equal benefit amount (including the effects of projected salary increases) to each year of credited and expected future employee service.

(2) The funded ratio is the assets divided by the actuarial present value.

(3) The projected salary increase assumption was changed to recognize the larger increases teachers were expected to receive in the future. This change in assumptions, which increased the actuarial present value of projected benefits, was offset by a proportionately larger increase in assets because of excellent investment performance.

(4) Contributions under Public Act 79-436 to date have been much less than the full actuarial contribution. (The funding percentage was 50 percent for fiscal 1985). Thus the expected change in the funded ratio for the five-year period had been roughly zero. The improvement came from investment performance better than expected. In the future as the funding percentage increases, the contribution is becoming large enough to start increasing the funded ratio by at least a percentage point a year.

2. Comparative Summary of the Components of Actuarial Present Value of Credited Projected Benefits and Percentage of Each That Is Covered by Assets (in thousands of dollars).

Fiscal Year Ended June 30	(A)	(B)	(C)	Assets at Market Value	Percentage of Each Component that is Covered by Assets		
	Member Contri- butions	Retired Members	Active Members		(A)	(B)	(C)
1980	\$490,805	\$ 904,346	\$1,208,551	\$1,049,306	100%	62% (1)	-
1982	578,863	1,133,547	1,532,394	1,154,963	100%	51%	-
1984	735,762	1,392,265	2,270,660	1,696,074	100%	69%	-
1985	822,884	1,534,600	2,525,056	2,157,914	100%	87%	-

(A) Contributions of active members and members with deferred benefit.

(B) Retired members, beneficiaries, co-participants, and survivors.

(C) State liability for active members and members with deferred benefits.

(1) Prior funding law stated that pensions of members were to be funded in full at the time they retired, with any cost-of-living increases funded pay-as-you-go. Thus retired life liabilities were less than two thirds funded when the new funding law became effective July 1, 1980 because the cost-of-living portion was completely unfunded.

3. Comparative Summary of Unfunded Actuarial Value of Credited Projected Benefits and Current Annual Salaries of Members (in thousands of dollars).

<u>Fiscal Year Ended June 30</u>	<u>Member Salaries</u>	<u>Unfunded Actuarial Present Value of Credited Projected Benefits</u>	<u>Percentage(1)</u>
1980	\$ 692,547	\$1,554,396	224%
1982	769,500	2,089,841	272%
1984	886,409	2,702,613	305%(2)
1985	975,248	2,724,626	279%

(1) Expressing the unfunded actuarial present value of credited projected benefits as a percentage of the member salaries helps remove the effects of inflation from reported changes in funded status. The smaller this percentage, the stronger the System. The large increase in percentage between 1980 and 1984 was the result of a 7.5 percent decrease in the number of active members and the change in projected salary increases made in the 1984 valuation. It is expected that this percentage will steadily decline in future years, although not as rapidly as between 1984 and 1985. The rate of decline should increase each year to 1993 because of the year to year increase in the contribution as a percentage of the full actuarial contribution.

(2) This percentage usually moves the opposite direction from the funded ratio. Such was not the case in this two-year period. Although the 17.8 percent average rate of investment return increased assets proportionately more than liabilities, the dollar increase in assets was less than the dollar increase in liabilities and, therefore, the unfunded actuarial present value increased.

BASIS OF VALUATION

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 and are as follows:

A. Actuarial Assumptions

1. Investment return 8 percent, 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	1%

4. Salary increases Annual increases of 8 percent for first 15 years of service; annual increases of 5-1/2 percent thereafter, plus an additional 2 percent for all years of service July 1, 1984 through June 30, 1988.
5. Cost-of-living increases Annual increases of 5 percent 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.

7. Disability incidence Based on experience of System.
Sample rates are:
- | | |
|--------|--------|
| Age 30 | .00059 |
| Age 40 | .00105 |
| Age 50 | .00262 |
8. Active member death benefit 85 percent of males are married with a spouse 3 years younger; 50 percent 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 three percentage points. This tentative amount is compared with the market value of assets and 20 percent 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 entry age actuarial cost method. It was changed from the frozen entry age actuarial cost method which was used in the June 30, 1984 valuation report. The normal cost for each member is the level percentage of the member's salary needed annually as a contribution from entry age to retirement age to fund the portion of her projected benefits not funded by member contributions. The actuarial accrued liability is the accumulated value of such normal costs and member contributions for each member from entry age to initial valuation date. The unfunded actuarial accrued liability is the actuarial accrued liability less plan assets.

Actuarial gains and losses decrease or increase the unfunded actuarial accrued liability, and are funded through the amortization payments for that liability.

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 war-time 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 percent times years of credited service times average annual salary (maximum percentage is 75 percent)
plus
any additional amounts derived from 6th percent and voluntary contributions 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. Proratable Retirement

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

Benefit: 2 percent less .1 percent for each year less than 20 years times years of Connecticut service plus 1 percent 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 percent times credited service to date of disability times average annual salary;
- 1-2/3 percent times credited service projected to 60 times average annual salary;
- 50 percent times average annual salary.

9. Termination of Employment

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

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

With 10 or more years: 100 percent vested. Members may elect return of all contributions plus interest on 5 percent contributions in lieu of vested benefit.

10. Pre-retirement Death Benefits

At the election of the member or beneficiary, a lump sum plus survivor's benefit or return of all contributions with interest or survivor spouse's benefit.

- Lump Sum: \$1,000 for first 5 years of Connecticut service plus \$200 per year thereafter. Maximum benefit: \$2,000.
- Survivor's Benefit: \$300 per month to a surviving spouse or dependent former spouse receiving child support, or to a dependent parent over age 65 if there is no surviving spouse. \$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.
- Surviving spouse's benefit: the 50 percent co-participant option.

11. Form of Annuity

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

Optional Forms: 5, 10, 15, 20 or 25 year certain and life. 33-1/3 percent, 50 percent, 66-2/3 percent, 75 percent, or 100 percent 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 percent and a maximum of 5 percent per annum.

13. Teachers' Required Assessments:

Each teacher is assessed 6 percent of annual salary. The 6th percent is refundable to teacher if termination is by reason other than death.

14. State Contributions

The State funds the balance of the liability for benefits with annual contributions (currently paid in installments at the beginning of each quarter) determined in accordance with Section 10-183(z) (which reflects Public-Act 79-436 as amended).

D. Participant Data

1. Retired members, co-participants and beneficiaries

<u>Age</u>	<u>June 30, 1985</u>		<u>June 30, 1984</u>	
	<u>Number</u>	<u>Ave. Mon. Benefit</u>	<u>Number</u>	<u>Ave. Mon. Benefit</u>
- 49	51	\$ 737	54	\$ 637
50 - 54	152	803	151	720
55 - 59	712	1,045	649	995
60 - 64	1,900	1,115	1,792	1,028
65 - 69	2,137	1,019	2,077	963
70 - 74	2,138	989	2,151	945
75 - 79	1,919	988	1,906	933
80 - 84	1,239	930	1,504	827
85 - 89	867	836	498	768
90 -	296	751	298	657
	<u>11,411</u>	<u>\$ 991</u>	<u>11,080</u>	<u>\$ 927</u>
2. Terminated members with rights to future benefits	486	\$ 364	548	\$ 372
3. Survivor and dependents	470	\$ 284	544	\$ 248
4. Active members				
a. Number	39,085		38,418	
b. Average service	14.0		13.1	
c. Average salary	\$24,950		\$23,070	

The next three pages give the distribution of active members by age at hire and by years of completed service. The following 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 2,316 equals \$23,160).

		FEMALES - DISTRIBUTION BY ENTRY AGE AND SVC																TOTAL							
SVC	<= 19		20-24		25-29		30-34		35-39		40-44		45-49		50-54		55-59		60-64		≥ 65		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	11	1385	136	1406	89	1765	113	1625	79	1679	29	1936	12	1442	3	1923	0	0	0	0	542	1579	
1	3	2754	347	1400	314	1484	227	1606	284	1638	187	1702	69	1821	33	1667	10	2079	1	1372	1	1774	1476	1567	
2	0	0	255	1423	235	1541	178	1682	186	1677	123	1795	31	1762	24	1828	6	1928	0	0	0	0	1040	1609	
3	0	0	213	1483	214	1545	147	1764	161	1847	103	1860	32	1801	23	2129	3	2338	0	0	0	0	496	1683	
4	0	0	260	1542	220	1612	171	1889	175	2000	111	1971	45	2109	17	2447	3	1843	0	0	0	0	1002	1786	
5	0	0	272	1648	281	1688	195	1930	191	1984	103	2106	57	2071	17	2136	8	2219	0	0	0	0	1124	1839	
6	0	0	354	1728	318	1807	181	1992	147	2052	81	2215	39	2202	15	2072	3	2557	1	1057	0	0	1139	1891	
7	0	0	399	1805	309	1903	162	2158	145	2095	80	2219	49	2116	18	2254	3	2407	1	2204	0	0	1166	1966	
8	0	0	354	1862	271	1960	147	2090	137	2304	70	2167	26	2262	6	2244	4	2364	0	0	0	0	1019	2016	
9	0	0	356	1979	188	2010	137	2165	111	2326	61	2286	24	2655	9	2453	5	2511	2	1932	0	0	893	2104	
10	0	0	342	2048	206	2141	114	2367	96	2309	79	2347	22	2496	11	2171	2	2475	0	0	0	0	872	2181	
11	0	0	535	2156	220	2309	135	2538	117	2446	80	2437	46	2504	14	2810	1	1823	0	0	0	0	1148	2301	
12	1	2043	576	2293	221	2450	142	2518	136	2496	69	2509	46	2509	13	2652	1	2343	0	0	0	0	1205	2396	
13	0	0	525	2396	240	2499	114	2611	124	2674	88	2655	48	2650	6	2824	1	2931	0	0	0	0	1146	2502	
14	0	0	583	2552	209	2660	137	2717	128	2676	90	2668	33	2720	5	2604	2	2710	0	0	0	0	1187	2618	
15	0	0	639	2629	211	2754	165	2715	143	2744	120	2740	42	2846	7	2866	0	0	0	0	0	0	1327	2690	
16	0	0	608	2719	195	2761	170	2827	166	2771	120	2869	25	3068	4	3178	1	3932	0	0	0	0	1289	2770	
17	0	0	445	2746	152	2780	133	2786	161	2903	109	2756	46	2850	8	2533	0	0	0	0	0	0	1054	2784	
18	0	0	333	2808	113	2850	137	2846	121	2883	80	2852	21	2823	3	2991	0	0	0	0	0	0	808	2837	
19	0	0	302	2842	108	2837	108	2772	148	2811	63	2787	22	2896	3	2882	0	0	0	0	0	0	754	2822	
20	0	0	283	2846	104	2746	108	2814	87	2871	43	2887	13	2721	1	3159	0	0	0	0	0	0	639	2828	
21	0	0	186	2843	76	2805	95	2781	77	2872	36	2923	5	3094	0	0	0	0	0	0	0	0	475	2838	
22	1	3045	165	2875	70	2792	97	2858	73	2896	22	2873	6	2959	0	0	0	0	0	0	0	0	434	2863	
23	0	0	137	2928	81	2901	93	2867	57	2888	18	3041	3	2933	0	0	0	0	0	0	0	0	389	2907	
24	0	0	108	2905	77	2907	59	2862	46	2907	24	2993	4	2669	0	0	0	0	0	0	0	0	318	2901	
25	0	0	114	2947	55	2916	53	2837	34	2885	13	3019	1	2789	0	0	0	0	0	0	0	0	270	2914	
26	0	0	107	2995	68	2758	54	2936	20	3047	3	2758	0	0	0	0	0	0	0	0	0	0	252	2920	
27	0	0	99	2986	58	2733	41	2842	15	2774	2	2636	0	0	0	0	0	0	0	0	0	0	215	2872	
28	0	0	89	3028	59	2920	42	2866	17	2810	5	2709	0	0	0	0	0	0	0	0	0	0	212	2941	
29	0	0	84	2939	45	2885	24	2950	9	3033	1	3076	0	0	0	0	0	0	0	0	0	0	163	2932	
30	0	0	72	2949	30	2951	16	2830	4	3101	1	2796	0	0	0	0	0	0	0	0	0	0	123	2938	
31	0	0	66	2992	26	2762	9	3245	1	2369	0	0	0	0	0	0	0	0	0	0	0	0	104	2950	
32	0	0	70	2999	27	3004	13	2909	4	2525	0	0	0	0	0	0	0	0	0	0	0	0	114	2973	
33	0	0	58	2985	21	3038	3	2450	2	2928	0	0	0	0	0	0	0	0	0	0	0	0	84	2978	
34	0	0	49	2982	15	3096	3	2661	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67	2993	
35	1	2717	30	3139	12	3046	3	2980	1	3268	0	0	0	0	0	0	0	0	0	0	0	0	47	3098	
36	0	0	27	3118	11	3396	2	2978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	3188	
37	0	0	18	2903	4	3259	2	2756	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	2950	
38	0	0	11	2968	1	2738	1	2630	1	3659	0	0	0	0	0	0	0	0	0	0	0	0	14	2977	
39	0	0	7	2929	0	0	1	3025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	2941	
40	0	0	5	2792	2	3059	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	2869	
41	0	0	4	3090	2	3059	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	3080	
42	0	0	3	2996	1	3874	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3216	
43	0	0	8	3064	1	2968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	3053	
44	0	0	4	3771	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3771	
45	0	0	3	2913	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2913	
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	2	2734	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2734	
48	0	0	1	2550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2550	
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	6	2678	9597	2336	5207	2207	3708	2366	3440	2346	2064	2346	784	2376	249	2216	56	2263	5	1699	1	1774	25117	2316	

		MALES - DISTRIBUTION BY ENTRY AGE AND SVC																TOTAL							
SVC	<= 19		20-24		25-29		30-34		35-39		40-44		45-49		50-54		55-59		60-64		≥ 65		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	11	1290	29	1513	28	1676	21	1824	14	2698	4	1452	8	2495	2	2975	0	0	0	0	117	1819	
1	0	0	53	1466	97	1480	80	1739	58	2260	27	2622	14	2489	7	2250	5	2272	2	2183	0	0	343	1833	
2	0	0	50	1486	73	1609	64	1896	32	2190	23	2537	10	2535	6	2730	6	3091	0	0	0	0	264	1901	
3	0	0	44	1544	54	1682	48	2043	34	2459	15	2975	2	2510	4	4039	1	4318	0	0	0	0	202	2033	
4	0	0	82	1640	75	1834	72	2278	22	2589	18	2940	8	3182	2	2404	1	1443	1	2106	0	0	281	2063	
5	0	0	72	1725	85	1845	65	2347	25	2759	10	3253	9	2872	4	2119	0	0	0	0	0	0	270	2109	
6	1	1722	83	1753	103	1850	63	2362	26	3160	9	2940	8	3373	2	2703	0	0	0	0	0	0	295	2127	
7	0	0	107	1696	151	2000	76	2383	19	2985	10	2783	8	3532	7	2238	2	2077	0	0	0	0	380	2154	
8	0	0	119	2059	138	2157	50	2647	19	3088	6	2459	5	3101	2	2852	1	2177	0	0	0	0	340	2270	
9	0	0	112	2159	118	2318	47	2508	15	3574	12	3018	6	3109	2	2780	0	0	0	0	0	0	312	2395	
10	0	0	128	2224	119	2407	35	2723	14	2800	7	2712	4	3325	1	2325	0	0	0	0	0	0	308	2403	
11	0	0	233	2342	172	2557	48	2775	11	2787	10	2823	7	2756	5	2706	0	0	0	0	0	0	486	2491	
12	0	0	262	2461	224	2706	44	2991	26	2974	13	2848	6	2676	1	2840	1	2306	0	0	0	0	577	2631	
13	0	0	299	2551	198	2777	56	2919	27	3180	15	3112	7	2623	2	2465	1	2746	0	0	0	0	605	2702	
14	0	0	316	2691	192	2828	49	2968	25	2876	24	3129	6	3780	3	2901	0	0	0	0	0	0	615	2792	
15	0	0	395	2779	233	2929	56	2954	33	2865	24	3137	18	2906	4	3043	0	0	0	0	0	0	763	2857	
16	0	0	496	2873	189	2955	63	3042	25	3360	28	2905	8	3093	1	2756	0	0	0	0	0	0	810	2923	
17	0	0	393	2876	193	3095	67	3034	39	3130	23	3014	6	3282	0	0	0	0	0	0	0	0	721	2971	
18	0	0	320	2973	188	2994	58	3154	43	3237	21	3085	5	3459	2	2873	0	0	0	0	0	0	637	3021	
19	0	0	274	2951	140	3064	56	3080	33	3101	12	2736	6	2759	0	0	0	0	0	0	0	0	521	2998	
20	0	0	299	3085	123	3045	49	2922	29	3163	12	3498	3	3125	0	0	0	0	0	0	0	0	515	3074	
21	0	0	245	3063	136	3090	47	2980	30	3016	7	3173	2	3811	0	0	0	0	0	0	0	0	467	3065	
22	0	0	221	3143	149	3101	58	3297	21	2946	6	3276	1	2599	0	0	0	0	0	0	0	0	456	3140	
23	0	0	207	3118	175	3200	43	3065	13	2995	3	3200	1	3159	0	0	0	0	0	0	0	0	442	3142	
24	0	0	170	3231	175	3106	61	3039	20	3082	6	3080	0	0	0	0	0	0	0	0	0	0	432	3144	
25	0	0	146	3250	171	3139	61	3212	12	3099	3	3265	0	0	0	0	0	0	0	0	0	0	393	3192	
26	0	0	142	3265	189	3128	51	3169	7	2992	2	2765	0	0	0	0	0	0	0	0	0	0	391	3179	
27	0	0	132	3328	173	3309	32	3236	9	2887	2	3337	0	0	0	0	0	0	0	0	0	0	348	3299	
28	0	0	105	3344	143	3330	26	3152	4	3217	0	0	0	0	0	0	0	0	0	0	0	0	278	3317	
29	0	0	108	3341	128	3263	29	3207	3	3375	0	0	0	0	0	0	0	0	0	0	0	0	268	3290	
30	0	0	97	3419	131	3270	19	3159	7	3493	0	0	0	0	0	0	0	0	0	0	0	0	254	3325	
31	0	0	90	3352	115	3258	17	3316	2	2728	0	0	0	0	0	0	0	0	0	0	0	0	224	3296	
32	0	0	79	3545	74	3377	7	3218	2	3242	0	0	0	0	0	0	0	0	0	0	0	0	162	3450	
33	0	0	91	3499	63	3271	11	3360	0	0	1	2963	0	0	0	0	0	0	0	0	0	0	166	3400	
34	0	0	51	3520	51	3332	5	3723	0	0	0	0	0	0	0	0	0	0	0	0	0	0	107	3440	
35	0	0	43	3543	28	3359	4	3380	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	3466	
36	0	0	34	3562	22	3249	4	3961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	3474	
37	0	0	18	3645	23	3524	2	3084	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	3554	
38	0	0	10	3561	6	3664	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	3600	
39	0	0	5	3460	6	3208	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	3322	
40	0	0	2	3035	1	3298	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3123	
41	0	0	2	4068	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4068	
42	0	0	5	3591	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3591	
43	0	0	0	0	1	3935	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3935	
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	1	4671	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4671	
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	1	1722	6153	2815	4854	2820	1651	2753	706	2883	363	2944	154	2953	63	2649	20	2650	3	2158	0	0	13968	2817	

- 33 -



SVC	19		20-24		25-29		30-34		35-39		40-44		45-49		50-54		55-59		60-64		TOTAL		
	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	94	1373	165	1825	117	1744	134	1656	93	1833	33	1877	20	1863	5	2344	0	0	0	0	
1	3	2754	400	1408	411	1483	307	1641	342	1784	214	1818	83	1933	40	1769	15	2143	3	1913	1	1774	
2	0	0	305	1441	308	1557	242	1739	220	1752	146	1932	41	1951	30	2039	12	2509	0	0	0	0	
3	0	0	257	1493	268	1573	195	1833	195	1833	114	2001	34	1843	27	2412	4	2833	0	0	0	0	
4	0	0	342	1566	295	1668	243	2004	197	2066	129	2106	53	2271	19	2442	4	1743	1	2106	0	0	
5	0	0	344	1664	366	1724	260	2034	216	2074	113	2208	66	2180	21	2133	6	2219	0	0	0	0	
6	1	1722	437	1733	421	1818	244	2087	173	2218	90	2287	47	2401	17	2146	3	2557	1	1057	0	0	
7	0	0	506	1824	460	1935	238	2230	164	2198	90	2282	57	2315	25	2249	5	2275	1	2204	0	0	
8	0	0	477	1911	409	2026	197	2231	156	2400	73	2190	31	2397	8	2396	5	2326	0	0	0	0	
9	0	0	468	2032	306	2129	184	2253	126	2474	73	2406	30	2746	11	2512	5	2511	2	1932	0	0	
10	0	0	470	2096	325	2238	149	2451	110	2371	86	2377	26	2623	12	2183	2	2475	0	0	0	0	
11	0	0	768	2213	392	2418	183	2600	128	2416	90	2480	53	2537	19	2782	1	1823	0	0	0	0	
12	1	2043	838	2346	445	2579	186	2630	162	2573	62	2562	52	2528	14	2665	2	2324	0	0	0	0	
13	0	0	824	2452	438	2625	170	2712	151	2764	103	2722	55	2646	6	2714	2	2838	0	0	0	0	
14	0	0	899	2601	401	2741	186	2783	153	2709	114	2765	39	2883	4	2716	2	2710	0	0	0	0	
15	0	0	1034	2686	444	2846	221	2775	176	2767	144	2807	60	2864	11	2910	0	0	0	0	0	0	
16	0	0	1104	2768	384	2856	233	2885	191	2848	148	2876	33	3074	5	3093	1	1932	0	0	0	0	
17	0	0	834	2807	345	2956	200	2869	200	2917	132	2801	52	2900	4	2933	0	0	0	0	0	0	
18	0	0	653	2889	301	2940	195	2938	164	2976	101	2901	28	2945	3	2944	0	0	0	0	0	0	
19	0	0	576	2894	248	2965	164	2877	181	2864	75	2779	28	2866	3	2882	0	0	0	0	0	0	
20	0	0	582	2969	227	2908	157	2848	116	2944	55	3020	16	2797	1	3159	0	0	0	0	0	0	
21	0	0	431	2949	212	2988	142	2847	107	2912	43	2963	7	3299	0	0	0	0	0	0	0	0	
22	1	3045	366	3028	219	3002	155	3022	94	2907	28	2960	7	2908	0	0	0	0	0	0	0	0	
23	0	0	344	3042	256	3105	136	2930	70	2908	21	3064	4	2989	0	0	0	0	0	0	0	0	
24	0	0	278	3104	252	3045	120	2952	66	2960	30	3010	4	2669	0	0	0	0	0	0	0	0	
25	0	0	260	3117	226	3085	114	3038	66	2941	16	3065	1	2789	0	0	0	0	0	0	0	0	
26	0	0	249	3149	257	3030	105	3049	27	3033	5	2760	0	0	0	0	0	0	0	0	0	0	
27	0	0	231	3181	231	3165	73	3015	24	2816	4	2987	0	0	0	0	0	0	0	0	0	0	
28	0	0	194	3199	202	3210	68	2975	21	2887	5	2709	0	0	0	0	0	0	0	0	0	0	
29	0	0	192	3165	173	3164	53	3091	12	3119	1	3076	0	0	0	0	0	0	0	0	0	0	
30	0	0	169	3219	161	3211	35	3009	11	3350	1	2796	0	0	0	0	0	0	0	0	0	0	
31	0	0	158	3197	141	3167	26	3291	3	2609	0	0	0	0	0	0	0	0	0	0	0	0	
32	0	0	149	3248	101	3277	20	3017	6	2764	0	0	0	0	0	0	0	0	0	0	0	0	
33	0	0	149	3289	84	3213	14	3165	2	2928	1	2963	0	0	0	0	0	0	0	0	0	0	
34	0	0	100	3256	66	3278	6	3325	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
35	1	2717	73	3377	40	3265	7	3208	1	3268	0	0	0	0	0	0	0	0	0	0	0	0	
36	0	0	61	3365	33	3298	6	3634	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
37	0	0	36	3274	27	3465	4	2920	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
38	0	0	21	3250	7	3532	1	2630	1	3659	0	0	0	0	0	0	0	0	0	0	0	0	
39	0	0	12	3150	6	3208	1	3025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
40	0	0	7	2862	3	3139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
41	0	0	6	3416	2	3059	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
42	0	0	8	3368	1	3674	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
43	0	0	8	3084	2	3451	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
44	0	0	4	3771	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45	0	0	4	3353	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	
47	0	0	2	2734	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
48	0	0	1	2550	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	
TOTAL	7	254115750	252310061	2502	5359	2485	4196	2437	2427	2436	938	2471	312	2303	76	2365	6	1871	1	1774		39085	2495

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
1	3	2754	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
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
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
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
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
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
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
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
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
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
12	1	2043	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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
TOTAL	4	2576	369	1808	2009	1549	3978	1863	5492	2289	4374	2445	2938	2562	2646	2683	2124	2776	907	2844	276	2878	2517	2316

		M E F - DISTRIBUTION BY ATTAINED AGE AND SVC																											
		≤ 19		20-24		25-29		30-34		35-39		40-44		45-49		50-54		55-59		60-64		≥ 65		TOTAL					
SVC	NO.	SAL	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	0			
1	3	2754	261	1414	480	1459	317	1583	332	1729	255	1817	99	1922	42	1730	23	2137	6	1832	1	1774	0	0	0	0	1819	1617	
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	0	1304	1568	
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	0	1098	1748	
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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	0	1934	1940	
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	0	1546	2013	
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	0	1359	2079	
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	0	1205	2179	
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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	0	1634	2358	
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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	0	0	0	0
TOTAL	4	2576	413	1410	2530	1560	5332	1898	8567	2393	7403	2648	4926	2777	4534	2886	3569	2964	1413	2985	394	2985	39085	2495					