

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

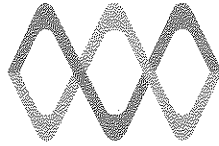
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MILLIMAN & ROBERTSON, INC.

Actuaries and Consultants

Three Corporate Place
Bloomfield, Connecticut 06002-2413
Telephone: 203/243-1138
Fax: 203/286-0564

November 16, 1993

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

Re: Connecticut State Employees Retirement System

Members of the Commission:

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

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

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

362,006,157

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November 16, 1993

Re: Connecticut State Employees Retirement System

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

Respectfully submitted,

MILLIMAN & ROBERTSON, INC.



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

SECTION I

EXECUTIVE SUMMARY

SECTION I

EXECUTIVE SUMMARY

PURPOSE OF REPORT

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

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

ORGANIZATION OF THE EXECUTIVE SUMMARY

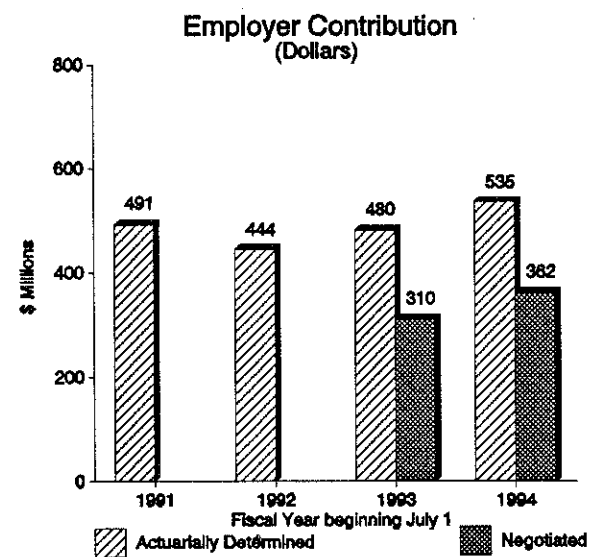
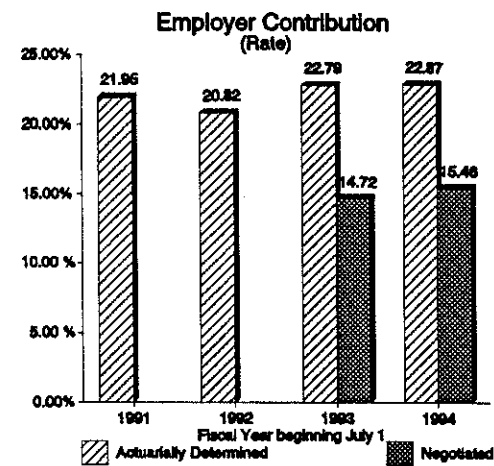
- ▶ **Major Findings...** shows graphically, key results for each of the last four actuarial valuations.
- ▶ **SERS Experience July 1, 1992 to June 30, 1993...** highlights the major events influencing this valuation and summarizes the finds of the gain/(loss) analysis.
- ▶ **Experience Study...** contains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

Executive Summary

MAJOR FINDINGS

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

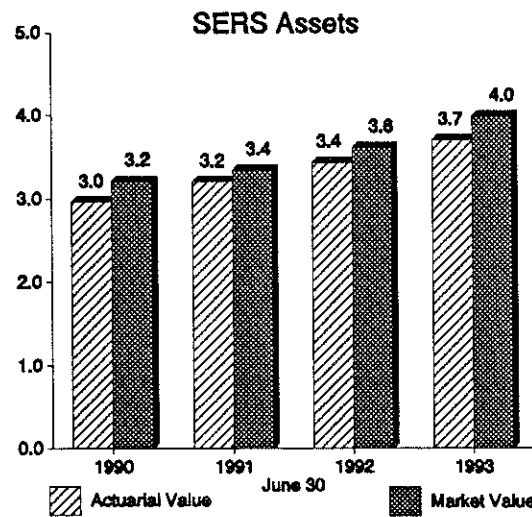
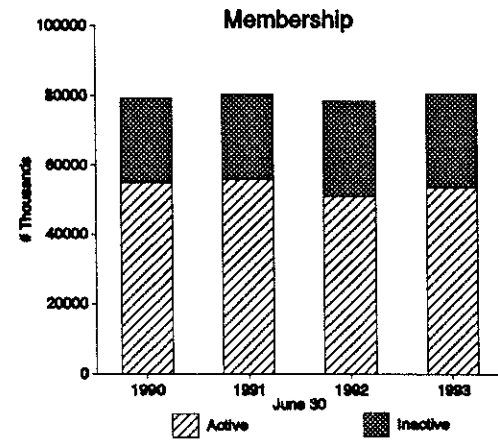
In the absence of the SEBAC agreements, the Employer's contribution rate has been relatively level. For 1993 and 1994, the actuarially determined contribution rate is shown along with the rate reflecting negotiated changes (see page 5). The actuarially determined rate is higher for 1993 and 1994 due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



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

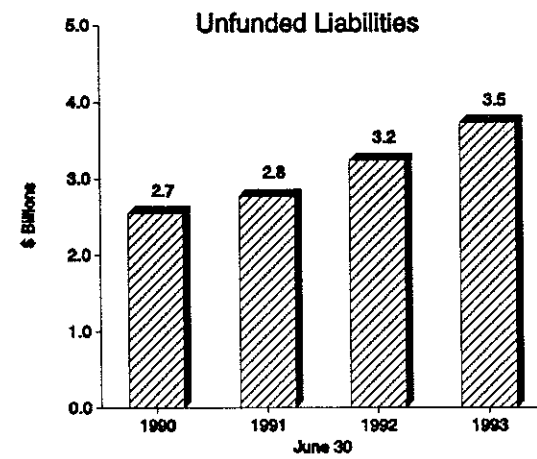
Executive Summary

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



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

Executive Summary



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

Executive Summary

SERS EXPERIENCE JULY 1, 1992 TO JUNE 30, 1993

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

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

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

Executive Summary

Comparison of Results

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

Assets

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

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

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

Executive Summary

Unfunded Liabilities

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

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

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

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

Executive Summary

Components of the Liability Loss

Active Decrements

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

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

Other Active Sources of Gain/Loss

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

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

Executive Summary

Inactive Sources of Gain/Loss

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

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

EXPERIENCE STUDY

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

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

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

The results of the study are briefly summarized below:

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

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

Executive Summary

SERS CONTRIBUTIONS

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

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

Actuarial Surplus

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

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

Executive Summary

**CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM
PRINCIPAL RESULTS**

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

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

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

SECTION II

SERS ASSETS

SECTION II
SERS ASSETS

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

Actuarial Value of Assets

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

Market Value of Assets

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

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

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

Table II-1

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

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

Table II-2

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

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

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

Table II-3

ACTUARIAL VALUE OF ASSETS

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

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

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

Table II-4

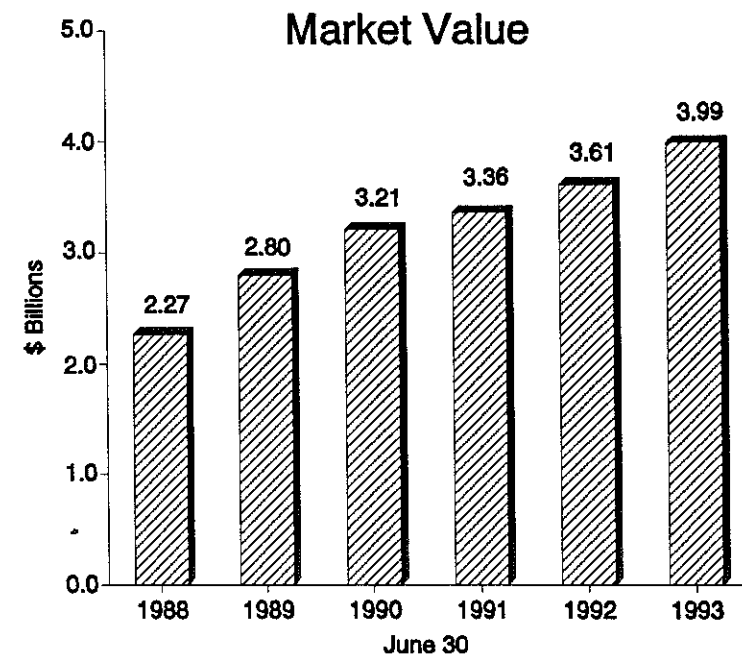
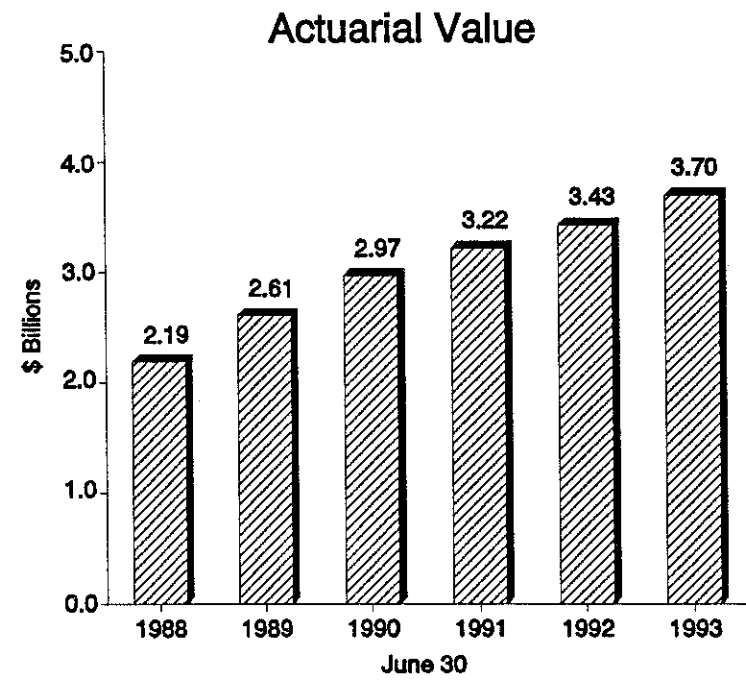
DEVELOPMENT OF ASSET GAIN/LOSS

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

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

Table II-5

HISTORICAL SUMMARY OF SYSTEM ASSETS



SECTION III

SERS LIABILITIES

SECTION III

SERS LIABILITIES

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

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

The tables in this section present SERS liabilities as follows:

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

Table III-1

SERS LIABILITIES

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

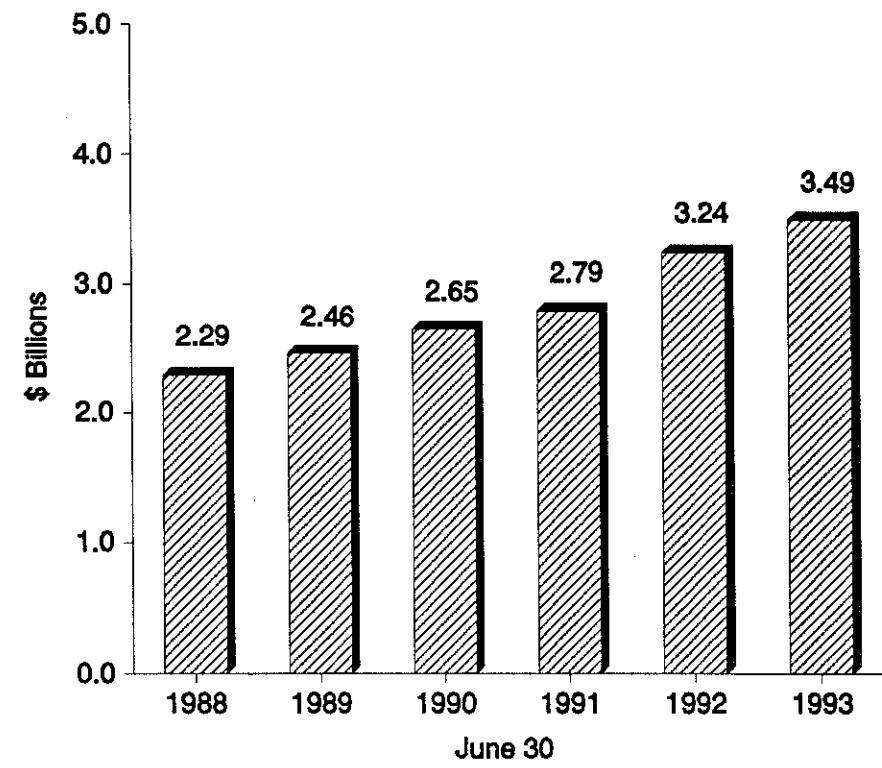
Table III-2

ACTIVE LIABILITIES BY TIER AND PLAN

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

Table III-3

*HISTORICAL SUMMARY OF
UNFUNDED PAST SERVICE LIABILITIES*



SECTION IV

SERS CONTRIBUTIONS

SECTION IV

SERS CONTRIBUTIONS

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

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

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

Table IV-1

PROJECTED UNIT CREDIT NORMAL COST PROJECTIONS

| Plan | 7-1-93 Normal Cost | 7-1-93 Earnings | Normal Cost % | 7-1-94 Projected Earnings | 7-1-94 Normal Cost |
|---|-----------------------|--------------------|---------------|---------------------------------|--------------------------|
| <u>TIER I</u> | | | | | |
| 1. Hazardous Duty | \$ 26,538,037 | \$ 117,281,337 | 22.6277% | \$ 121,268,902 | \$ 27,440,363 |
| 2. Plan B | 88,168,905 | 920,122,919 | 9.5823 | 951,407,098 | 91,166,682 |
| 3. Plan C | <u>6,406,033</u> | <u>67,601,671</u> | 9.4761 | <u>69,900,128</u> | <u>6,623,806</u> |
| Total | 121,112,975 | 1,105,005,927 | | 1,142,576,128 | 125,230,851 |
| <u>TIER II</u> | | | | | |
| 1. Hazardous Duty | 37,158,290 | 203,271,183 | 18.2802% | 229,403,727 | 41,935,460 |
| 2. All Others | <u>46,707,234</u> | <u>836,516,356</u> | 5.5835 | <u>969,060,359</u> | <u>54,107,485</u> |
| Total | 83,865,524 | 1,039,787,539 | | 1,198,464,086 | 96,042,945 |
| <p style="text-align: center;">2144.8</p> <p>SERS Normal Cost Projected to 7/1/94: \$221,273,796</p> <p>SERS Projected Earnings at 7/1/94: \$2,341,040,214</p> <p>SERS Projected Normal Cost % at 7/1/94: 9.4519%</p> <p style="text-align: right;">9.1477%</p> | | | | | |

Table IV-2

PROJECTED UNIT CREDIT UNFUNDED LIABILITY

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

Table IV-3

PROJECTED UNIT CREDIT TOTAL COSTS

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

Table IV-4

COMPARISON OF NORMAL COST RATES

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

SECTION V

GASB #5 ACCOUNTING INFORMATION

SECTION V

GASB #5 INFORMATION

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

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

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

Background Information

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

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

Table V-1

SUMMARY OF MEMBERSHIP

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

6490
 18547
 1,609
 24,087

7039
 18653

549
 1,559
 26,286

Table V-2

STANDARDIZED MEASURES

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

Table V-3

HISTORICAL CONTRIBUTION INFORMATION

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

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

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

(c) Per SEBAC Agreement.

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

Table V-4

HISTORICAL ANALYSIS OF FUNDING PROGRESS
(millions)

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

* Market Value

APPENDIX A

SUMMARY STATISTICS ON SERS MEMBERSHIP

APPENDIX A

SUMMARY STATISTICS ON SERS MEMBERSHIP

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

Table A-1

SUMMARY OF ACTIVE MEMBERSHIP DATA

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

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

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

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

Table A-2

DETAIL OF ACTIVE MEMBERSHIP DATA BY PLAN

| | 7/1/92 | 7/1/93 | Percent Change |
|---|----------------|-----------------------|-------------------|
| Number of Members | | | |
| Tier I Hazardous Duty | 2,231 | 2,135 | -4.3% |
| Tier I Plan B | 18,947 | 18,653 | -1.6 |
| Tier I Plan C | 1,609 | 22,347 1,559 | -3.1 |
| Tier II Hazardous Duty | 4,259 | 4,904 | +15.1 |
| Tier II Others | 24,087 | 31,190 26,286 | +9.1 |
| Total | 51,133 | 588 53,537 | +4.7 |
| Total Annual Compensation (millions) | | | |
| Tier I Hazardous Duty | \$ 112.1 | \$ 117.3 | +4.6% |
| Tier I Plan B | 854.5 | 920.1 | +7.7 |
| Tier I Plan C | 63.5 | 67.6 | +6.5 |
| Tier II Hazardous Duty | 165.3 | 203.3 | +23.0 |
| Tier II Others | 736.0 | 836.5 | +13.7 |
| Total | 1,931.4 | 2,144.8 | +11.0 |
| Average Compensation | | | |
| Tier I Hazardous Duty | \$50,237 | \$54,933 | +9.3% |
| Tier I Plan B | 45,098 | 49,328 | +9.4 |
| Tier I Plan C | 39,484 | 43,362 | +9.8 |
| Tier II Hazardous Duty | 38,815 | 41,450 | +6.8 |
| Tier II Others | 30,556 | 31,824 | +4.1 |
| Total | 37,772 | 40,062 | +6.1 |
| Average Age | | | |
| Tier I Hazardous Duty | 42.2 | 43.0 | |
| Tier I Plan B | 45.6 | 46.4 | |
| Tier I Plan C | 51.6 | 52.2 | |
| Tier II Hazardous Duty | 33.6 | 34.2 | |
| Tier II Others | 38.4 | 38.9 | |
| Total | 41.2 | 41.6 | |
| Average Service | | | |
| Tier I Hazardous Duty | 14.6 | 15.4 | |
| Tier I Plan B | 16.2 | 17.0 | |
| Tier I Plan C | 16.3 | 17.4 | |
| Tier II Hazardous Duty | 3.9 | 3.9 | |
| Tier II Others | 4.9 | 5.3 | |
| Total | 9.7 | 10.0 | |

Table A-3

SUMMARY OF INACTIVE MEMBERSHIP DATA

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

Table A-4

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

YEARS OF SERVICE

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

AVERAGE SALARIES

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

Table A-5

ANALYSIS BY AGE AND SERVICE - PLAN B - ACTIVE MEMBERS

YEARS OF SERVICE

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

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AVERAGE SALARIES

| AGE | UNDER 5 | 5 TO 10 | 10 TO 15 | 15 TO 20 | 20 TO 25 | 25 TO 30 | 30 TO 35 | 35 TO 40 | 40 TO 45 | 45 TO 50 | 50 & UP | ALL YEARS |
|---------------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|---------|-----------|
| Under 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 to 24 | 334 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 334 |
| 25 to 29 | 30,015 | 33,769 | 34,757 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34,262 |
| 30 to 34 | 26,925 | 38,409 | 38,107 | 36,371 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37,760 |
| 35 to 39 | 33,127 | 42,838 | 42,724 | 43,510 | 45,520 | 0 | 0 | 0 | 0 | 0 | 0 | 42,851 |
| 40 to 44 | 37,563 | 44,983 | 46,752 | 50,001 | 50,203 | 50,339 | 0 | 0 | 0 | 0 | 0 | 48,555 |
| 45 to 49 | 41,816 | 45,771 | 48,143 | 51,960 | 56,916 | 53,973 | 51,501 | 0 | 0 | 0 | 0 | 52,285 |
| 50 to 54 | 37,406 | 45,099 | 45,268 | 47,949 | 57,980 | 61,435 | 54,667 | 56,313 | 0 | 0 | 0 | 52,844 |
| 55 to 59 | 38,769 | 49,512 | 44,038 | 48,335 | 55,378 | 65,517 | 66,072 | 65,439 | 39,825 | 0 | 0 | 53,380 |
| 60 to 64 | 32,226 | 43,625 | 43,196 | 47,568 | 57,300 | 62,517 | 74,422 | 71,436 | 70,736 | 19,227 | 0 | 53,032 |
| 65 & Up | 41,812 | 37,589 | 43,212 | 47,393 | 58,896 | 65,017 | 87,706 | 74,876 | 100,298 | 121,839 | 0 | 56,215 |
| Totals | 36,362 | 43,270 | 44,000 | 48,299 | 55,353 | 59,652 | 60,952 | 66,802 | 83,501 | 70,533 | 0 | 49,328 |

Table A-6

ANALYSIS BY AGE AND SERVICE - PLAN C - ACTIVE MEMBERS

YEARS OF SERVICE

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

AVERAGE SALARIES

| AGE | UNDER 5 | 5 TO 10 | 10 TO 15 | 15 TO 20 | 20 TO 25 | 25 TO 30 | 30 TO 35 | 35 TO 40 | 40 TO 45 | 45 TO 50 | 50 & UP | ALL YEARS |
|---------------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|---------|-----------|
| Under 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 to 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 to 29 | 0 | 0 | 39,947 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39,947 |
| 30 to 34 | 29,528 | 33,053 | 39,565 | 36,298 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37,780 |
| 35 to 39 | 24,959 | 37,819 | 40,110 | 39,390 | 39,942 | 0 | 0 | 0 | 0 | 0 | 0 | 39,128 |
| 40 to 44 | 29,746 | 33,348 | 42,117 | 46,021 | 43,307 | 43,708 | 0 | 0 | 0 | 0 | 0 | 42,995 |
| 45 to 49 | 0 | 44,719 | 40,643 | 44,890 | 44,541 | 42,832 | 0 | 0 | 0 | 0 | 0 | 43,466 |
| 50 to 54 | 31,226 | 36,985 | 40,519 | 45,875 | 48,320 | 45,676 | 37,245 | 53,763 | 0 | 0 | 0 | 44,289 |
| 55 to 59 | 28,361 | 39,912 | 38,131 | 42,030 | 47,384 | 49,497 | 62,767 | 35,650 | 69,870 | 0 | 0 | 42,974 |
| 60 to 64 | 93,478 | 36,905 | 39,666 | 42,029 | 50,625 | 53,823 | 54,515 | 55,289 | 37,615 | 0 | 0 | 44,910 |
| 65 & Up | 36,866 | 34,223 | 48,273 | 43,516 | 47,042 | 51,420 | 41,542 | 27,527 | 0 | 49,367 | 25,584 | 46,118 |
| Totals | 32,136 | 37,800 | 40,647 | 43,352 | 46,673 | 48,204 | 50,314 | 44,867 | 42,991 | 49,367 | 25,584 | 43,362 |

Table A-7

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

YEARS OF SERVICE

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

AVERAGE SALARIES

| AGE | UNDER 5 | 5 TO 10 | 10 TO 15 | 15 TO 20 | 20 TO 25 | 25 TO 30 | 30 TO 35 | 35 TO 40 | 40 TO 45 | 45 TO 50 | 50 & UP | ALL YEARS |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------|----------|----------|----------|---------------|
| Under 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 to 24 | 31,211 | 32,503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31,277 |
| 25 to 29 | 37,600 | 43,726 | 35,706 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39,388 |
| 30 to 34 | 38,683 | 47,367 | 39,268 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43,064 |
| 35 to 39 | 39,763 | 46,505 | 47,504 | 41,977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43,368 |
| 40 to 44 | 38,893 | 45,269 | 47,374 | 60,516 | 54,437 | 0 | 0 | 0 | 0 | 0 | 0 | 42,503 |
| 45 to 49 | 39,897 | 47,644 | 46,467 | 42,890 | 54,325 | 51,802 | 0 | 0 | 0 | 0 | 0 | 44,199 |
| 50 to 54 | 38,517 | 47,927 | 48,650 | 53,221 | 0 | 46,935 | 55,649 | 0 | 0 | 0 | 0 | 43,592 |
| 55 to 59 | 43,843 | 49,163 | 52,498 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46,963 |
| 60 to 64 | 46,967 | 43,514 | 48,271 | 48,935 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45,331 |
| 65 & Up | 49,906 | 50,086 | 72,225 | 53,798 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51,991 |
| Totals | 37,847 | 46,123 | 45,513 | 48,908 | 54,347 | 48,557 | 55,649 | 0 | 0 | 0 | 0 | 41,450 |

Table A-8

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

YEARS OF SERVICE

| AGE | UNDER 5 | 5 TO 10 | 10 TO 15 | 15 TO 20 | 20 TO 25 | 25 TO 30 | 30 TO 35 | 35 TO 40 | 40 TO 45 | 45 TO 50 | 50 & UP | ALL YEARS |
|---------------|---------------|---------------|--------------|------------|------------|-----------|----------|----------|----------|----------|----------|---------------|
| Under 20 | 129 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 129 |
| 20 to 24 | 1,195 | 176 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,371 |
| 25 to 29 | 2,171 | 2,077 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,291 |
| 30 to 34 | 1,838 | 2,939 | 250 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,032 |
| 35 to 39 | 1,446 | 2,404 | 255 | 19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4,125 |
| 40 to 44 | 1,333 | 1,991 | 257 | 35 | 37 | 2 | 0 | 0 | 0 | 0 | 0 | 3,655 |
| 45 to 49 | 1,071 | 1,656 | 217 | 22 | 55 | 13 | 1 | 0 | 0 | 0 | 0 | 3,035 |
| 50 to 54 | 707 | 1,150 | 148 | 15 | 25 | 8 | 2 | 0 | 0 | 0 | 0 | 2,055 |
| 55 to 59 | 393 | 789 | 109 | 16 | 15 | 5 | 0 | 0 | 0 | 0 | 0 | 1,327 |
| 60 to 64 | 218 | 491 | 93 | 5 | 7 | 4 | 0 | 1 | 0 | 0 | 0 | 819 |
| 65 & Up | 105 | 251 | 83 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 447 |
| Totals | 10,606 | 13,924 | 1,455 | 123 | 141 | 33 | 3 | 1 | 0 | 0 | 0 | 26,286 |

AVERAGE SALARIES

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

Table A-9

ANALYSIS OF RETIRED MEMBERS BY RETIREMENT YEAR

| Retirement Year | NUMBER OF RETIREES | | | | | AVERAGE BENEFIT | | | | |
|-----------------|--------------------|------------------------------|----------------------------------|---------------------------|------------------|--------------------|------------------------------|----------------------------------|---------------------------|------------------|
| | Service Retirement | Service Connected Disability | Non-Service Connected Disability | Hazardous Duty Retirement | Other Retirement | Service Retirement | Service Connected Disability | Non-Service Connected Disability | Hazardous Duty Retirement | Other Retirement |
| pre-1965 | 359 | 38 | 57 | 18 | 176 | 7,505 | 5,845 | 5,526 | 8,999 | 6,354 |
| 1966 | 54 | 2 | 4 | 2 | 26 | 8,174 | 5,061 | 5,466 | 9,592 | 5,569 |
| 1967 | 84 | 7 | 13 | 0 | 19 | 7,751 | 5,957 | 6,359 | 0 | 6,704 |
| 1968 | 87 | 3 | 14 | 0 | 22 | 7,097 | 4,542 | 7,307 | 0 | 6,307 |
| 1969 | 133 | 10 | 10 | 1 | 20 | 8,047 | 6,990 | 6,479 | 7,308 | 6,056 |
| 1970 | 207 | 12 | 18 | 2 | 38 | 8,173 | 7,302 | 7,892 | 10,777 | 8,004 |
| 1971 | 214 | 10 | 38 | 3 | 40 | 9,748 | 7,119 | 7,873 | 10,407 | 8,141 |
| 1972 | 314 | 14 | 49 | 6 | 47 | 10,794 | 8,486 | 7,631 | 13,460 | 8,244 |
| 1973 | 400 | 21 | 49 | 19 | 85 | 10,515 | 9,323 | 8,840 | 13,881 | 8,761 |
| 1974 | 471 | 25 | 52 | 21 | 69 | 10,831 | 11,215 | 9,110 | 15,931 | 7,917 |
| 1975 | 399 | 20 | 31 | 21 | 103 | 9,974 | 9,878 | 9,517 | 18,289 | 8,322 |
| 1976 | 662 | 41 | 50 | 17 | 92 | 10,467 | 10,028 | 8,860 | 18,398 | 7,636 |
| 1977 | 717 | 13 | 37 | 22 | 84 | 9,699 | 8,997 | 8,688 | 17,200 | 7,136 |
| 1978 | 570 | 10 | 24 | 12 | 86 | 9,176 | 7,293 | 8,001 | 16,221 | 6,854 |
| 1979 | 654 | 9 | 35 | 24 | 67 | 8,791 | 8,185 | 6,350 | 18,306 | 6,339 |
| 1980 | 1241 | 11 | 33 | 40 | 95 | 9,371 | 9,494 | 7,078 | 18,347 | 6,712 |
| 1981 | 799 | 17 | 30 | 29 | 90 | 8,345 | 6,404 | 5,952 | 17,188 | 6,181 |
| 1982 | 648 | 23 | 28 | 50 | 53 | 9,090 | 8,052 | 6,373 | 16,547 | 8,820 |
| 1983 | 578 | 15 | 19 | 33 | 48 | 9,466 | 9,826 | 8,663 | 18,030 | 7,587 |
| 1984 | 595 | 14 | 34 | 42 | 80 | 10,874 | 10,355 | 9,264 | 19,088 | 8,207 |
| 1985 | 755 | 32 | 33 | 58 | 106 | 11,375 | 10,269 | 9,535 | 19,571 | 8,566 |
| 1986 | 850 | 33 | 36 | 68 | 130 | 12,240 | 10,043 | 11,062 | 21,086 | 9,194 |
| 1987 | 944 | 46 | 38 | 52 | 170 | 13,889 | 9,653 | 12,439 | 24,453 | 7,610 |
| 1988 | 925 | 34 | 43 | 78 | 197 | 14,632 | 12,314 | 11,117 | 24,029 | 8,530 |
| 1989 | 1086 | 45 | 36 | 95 | 177 | 15,662 | 12,447 | 12,558 | 24,964 | 10,150 |
| 1990 | 3788 3109 | 56 | 36 | 254 | 325 | 17,631 | 12,732 | 11,177 | 31,611 | 15,172 |
| 1991 | 542 254 | 12 | 14 | 89 | 173 | 13,792 | 14,915 | 12,105 | 26,162 | 9,821 |
| 1992 | 939 574 | 8 | 32 | 86 | 239 | 17,842 | 16,237 | 16,195 | 28,552 | 12,022 |
| 1993 | 3029 2636 | 9 | 29 | 249 | 166 | 21,460 | 19,304 | 17,422 | 31,192 | 13,179 |
| | 132 | 2 | 8 | 43 | 57 | 9,595 | 22,080 | 15,470 | 27,251 | 14,774 |

MILLIMAN & ROBERTSON, INC.

Table A-10

ANALYSIS OF RETIRED MEMBERS BY CURRENT AGE

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

APPENDIX B

SUMMARY OF PLAN PROVISIONS

APPENDIX B

SUMMARY OF PLAN PROVISIONS

**CONNECTICUT STATE EMPLOYEES
RETIREMENT SYSTEM**

Established September 1, 1939

1. Membership

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

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

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

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

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

2. Normal Retirement Eligibility

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

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

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

3. Normal Retirement Benefit

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

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

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

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

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

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

4. Early Retirement

Tier I - Hazardous Duty: None.

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

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

5. Deferred Retirement

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

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

6. Vesting

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

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

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

7. Member Contributions

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

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

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

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

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

8. Cost of Living

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

9. Death Benefits

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

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

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

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

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

10. Disability Benefits

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

Appendix B

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

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

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

11. Optional Forms of Payment

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

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

12. Part-Time Employment

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

APPENDIX C

ACTUARIAL METHOD AND ASSUMPTIONS

APPENDIX C

ACTUARIAL METHOD AND ASSUMPTIONS

A. Funding Method

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

Appendix C

B. Actuarial Assumptions

Mortality: 1983 Group Annuity Mortality Table.

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

Investment Return:

Salary Scale: Varies by service as follows:

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

Disability:

| <u>Age</u> | <u>Annual Rate of Disability</u> <u>(Per 1,000 Lives)</u> | |
|------------|--|-------------------|
| | <u>Hazardous Duty</u> | <u>All Others</u> |
| 20 | .90 | .38 |
| 25 | 1.02 | .43 |
| 30 | 1.16 | .49 |
| 35 | 1.45 | .61 |
| 40 | 2.04 | .85 |
| 45 | 3.35 | 1.40 |
| 50 | 6.11 | 2.55 |
| 55 | 11.10 | 4.63 |
| 60 | 17.30 | 7.21 |

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

Appendix C

B. Actuarial Assumptions (cont'd)

*Social Security Wage
Base Increases:*

6½% compounded annually.

Retirement Ages:

Hazardous Duty Employees

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

Non Hazardous Duty Employees

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

Appendix C

B. Actuarial Assumptions (cont'd)

Turnover:

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

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

*Cost of Living
Increases:*

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

Asset Valuation:

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

APPENDIX D

ACTUARIAL SURPLUS TEST

APPENDIX D

ACTUARIAL SURPLUS TEST AS OF JUNE 30, 1993

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

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

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

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

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

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

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

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

Appendix D

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

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

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

Projection of Unfunded Liability

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

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

APPENDIX E

ENTRY AGE NORMAL VALUATION RESULTS

APPENDIX E

ENTRY AGE NORMAL VALUATION RESULTS

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