

**COMMONWEALTH OF PENNSYLVANIA**  
**STATE EMPLOYEES' RETIREMENT SYSTEM**

*1993 Actuarial Report*

*Hay/Huggins Company*  
*June 8, 1994*

June 8, 1994

Hay/Huggins  
Company

Mr. John Brosius  
Executive Director  
State Employees' Retirement System  
30 North Third Street  
Harrisburg, PA 17108-1147

Dear Mr. Brosius:

This report presents the results of our actuarial valuation of the Pennsylvania State Employees' Retirement System (SERS) as of December 31, 1993. Highlights of the valuation are presented on page 1, followed by a general discussion and comments on the various schedules included in the report. These schedules summarize the underlying calculations, asset information, participant data, plan benefits and actuarial assumptions.

The main purposes of this report are:

- to indicate the pension contribution rates which will be the basis for the Fiscal Year 1994-95 appropriation request;
- to disclose the financial condition of the Plan;
- to provide information relating to the disclosure and reporting requirements of Statement No. 5 of the Governmental Accounting Standards Board.

To the best of our knowledge, this report is complete and accurate and all costs and liabilities have been determined in conformance with generally accepted actuarial principles and on the basis of actuarial assumptions and methods which, in the aggregate, are reasonable (taking into account past experience under the SERS and reasonable expectations) and which in combination represent our best estimate of anticipated experience under the plan.

Respectfully submitted,  
HAY/HUGGINS COMPANY, INC.



By  
EDWIN C. HUSTEAD, F.S.A.  
Member American Academy of Actuaries  
Enrolled Actuary No. 93-1499

**STATE EMPLOYEES' RETIREMENT SYSTEM**

**TABLE OF CONTENTS**

	<u>Schedule</u>	<u>Page</u>
Valuation Highlights .....	-	1
Comments on Schedules .....	-	4
Unfunded Actuarial Accrued Liability and Amortization .....	A	9
Normal Cost, Amortization of Supplemental Annuities and Total Employer Contribution .....	B	10
Employer Contribution Rate by Group .....	C	11
State Police and Enforcement Officers Additional Annuity Rate .....	D	12
Analysis of Change in Employer Contribution Rate and Unfunded Actuarial Accrued Liability .....	E	13
Actuarial Balance Sheet .....	F	14
Required Transfers Within SERS Accounts .....	G	15
Accounting Disclosure Statements .....	H	16
Actuarial Value of Assets .....	I	18
Ten Year Projection .....	J	20
Profile of Plan Participants .....	K	21
Summary of Benefit and Contribution Provisions .....	L	29
Actuarial Assumptions .....	M	35
Asset Valuation Method, Funding and Contribution Policy, and Disclosure Assumptions .....	N	39
Technical Terms .....	O	42

**STATE EMPLOYES' RETIREMENT SYSTEM**

**VALUATION HIGHLIGHTS**

	<u>December 31, 1993</u>		<u>December 31, 1992</u>	
	<u>Valuation</u>		<u>Valuation</u>	
• Summary of Contributions: (Percent of Members' Compensation)	<u>Valuation</u>	<u>Actual</u>	<u>Valuation</u>	<u>Actual</u>
Normal Cost	10.23%	10.23%	9.81%	9.81%
Amortization of Liabilities	(1.70)	(1.31)	(0.54)	(0.89)
Total	8.53%	8.92%	9.27%	8.92%
Contribution Rates for:				
Class A Members:				
Age 60 Superannuation	7.39%	7.77%	8.06%	7.72%
Age 50 Superannuation	9.41	9.79	10.13	9.79
Park Rangers	10.64	11.02	N/A	N/A
Capitol Police	10.67	11.05	11.15	10.81
State Police	25.76	26.36	26.82	26.29
Class C Members:				
State Police	25.76	26.36	26.82	26.29
Enforcement Officers	9.41	9.79	10.13	9.79
Class D Members	35.29	36.71	37.99	36.71
Class E Members	13.78	14.41	15.04	14.47
• Market Value Assets	\$ 13,700,885,096		\$ 12,453,358,860	
• Projected Benefit Obligation	\$ 11,853,943,437		\$ 11,145,829,489	
• Active Participants:				
Number	111,962		109,609	
Average annualized compensation	\$ 31,674		\$ 30,645	
Total annualized compensation	\$ 3,546,228,636		\$ 3,358,961,881	
• Annuitants and Beneficiaries:				
Number	80,690		80,492	
Total annual pension	\$ 627,068,437		\$ 601,658,734	
• Inactive Participants:				
Number	4,717		4,293	

## STATE EMPLOYES' RETIREMENT SYSTEM

### General Discussion

The liabilities and costs in this report were based on actuarial assumptions adopted by the State Employees' Retirement Board in 1991 and funding procedures specified in Act 1991-23. The same assumptions were used in the 1992 valuation. The rates of investment return and salary increases are shown in the following table. The single-rate equivalent of the graded investment assumption, for the purposes of determining the employer contribution, is 9 percent a year.

<u>Years</u>	<u>Salary Increases</u>			<u>Investment Return</u>
	<u>General</u>	<u>Average Career</u>	<u>Total</u>	
1994 to 2000	4.0%	2.5%	6.5%	9.9%
2001 to 2005	4.0	2.5	6.5	9.0
2006 to 2010	4.0	2.5	6.5	8.0
2011 to 2015	4.0	2.5	6.5	7.0
After 2015	4.0	2.5	6.5	6.0

Page 3 shows the history of the employer contribution rate from 1980 through 1993. The rate increased in 1980 due to the adoption of the 1976-1980 evaluation results, and the rate was lowered in 1985 as a result of the adoption of new assumptions based on the study of experience from 1981 through 1985. While the components of the rate shifted from 1985 through 1988, the total rate held steady. The employer contribution dropped slightly in 1989 as a result of investment gains.

Changes made for the 1990 valuation resulted in a drop in the employer contribution rate from 12.32 percent to 9.87 percent of salary. The employer contribution rate dropped further, to 8.92 percent, in the 1991 valuation. The employer contribution as determined in the valuation increased to 9.27 percent in 1992 as a result of elimination of the additional 1.25 percent employee contribution and unexpectedly high increases in salary. Since it was probable that the high level of salary increase would not recur, and there would be additional gains from investment income, the State Employees' Retirement Board continued the 8.92 percent employer contribution into the 1993/94 fiscal year. The actuary agreed that this decision was sound.

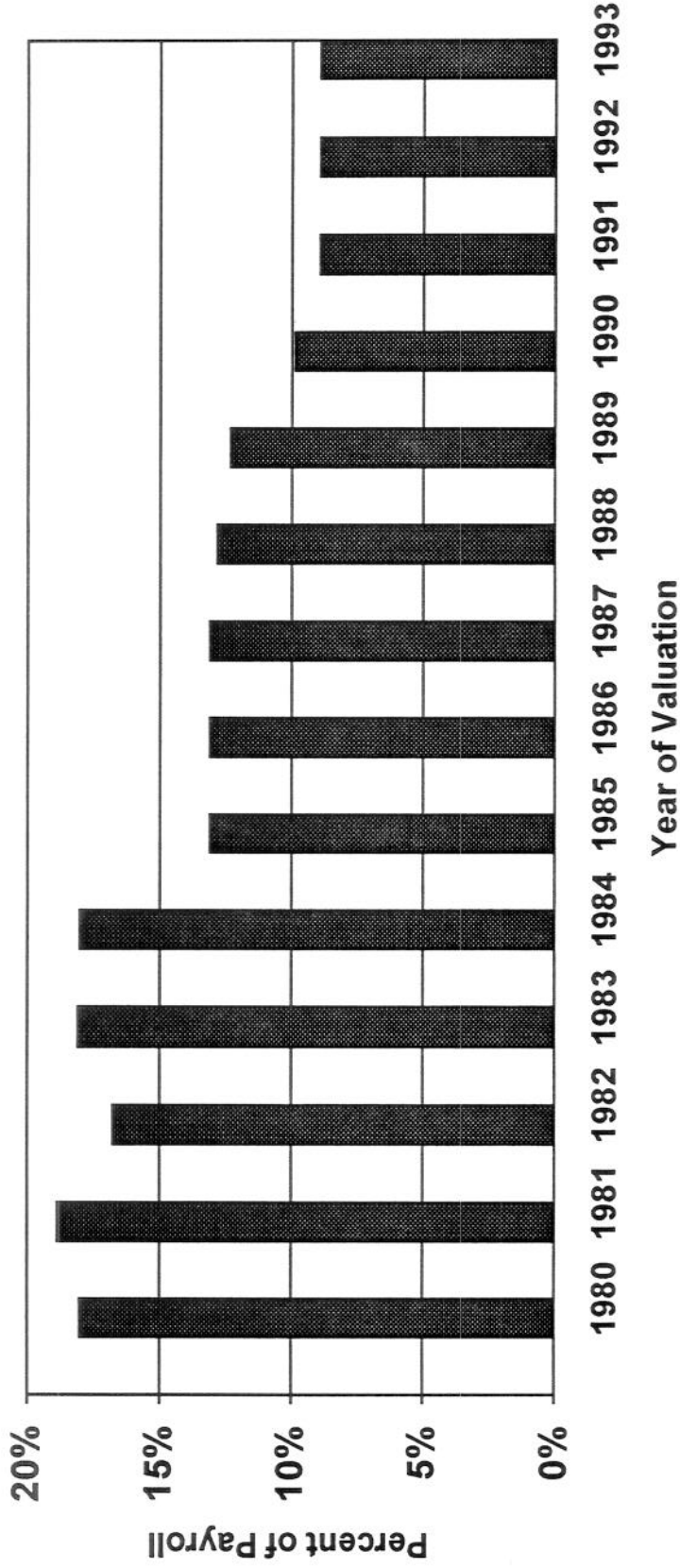
The 1993 employer contribution rate as determined in the valuation dropped to 8.53 percent largely as a result of the investment gains that had been predicted when the Board adopted the continuation of the 8.92 percent contribution rate. The Board considered two reasons to increase the actual contribution above the 8.53 percent level. First, passage of Senate Bill 974 extended, both prospectively and retroactively, the early retirement window that had closed on July 1, 1993. The window will now extend to June 30, 1997. Senate Bill 974 requires that funding for that provision begin July 1, 1994. Second, labor agreements effective January 1, 1994 raised the longevity pay increases for many of the employees covered by SERS. That action will increase the cost of benefits payable from the fund.

## STATE EMPLOYEES' RETIREMENT SYSTEM

The State Employees' Retirement Board at their meeting of April 20, 1994, determined that the 8.92 percent contribution for 1993/94 should be continued into 1994/95. The decision was based on the fact that the retirement system cost for 1994/95 was increased by passage of Senate Bill 974 and that the salary negotiations resulted in a further increase. The latter increase need only be formally included at the time of the next review of experience of the system. However, it would be appropriate to consider at least part of a change resulting from revised salary schedules at the time they occur. The actuary agreed that the decision was sound and that the difference between the employer contribution rate of 8.92 percent and the calculated rate of 8.53 percent would not have a significant impact on the future cost of the system.

# Pennsylvania State Employees' Retirement System

## Total Employer Cost



The total employer cost is the actual contribution rate during the succeeding fiscal year. For instance, the 1993 rate of 8.92 percent will be the employer contribution for fiscal year 1993/94. In some years the contribution rate was adjusted for events occurring after the valuation date.

# STATE EMPLOYEES' RETIREMENT SYSTEM

## COMMENTS ON SCHEDULES

### Employer Contribution Rate

Schedules A and B summarize the development of the Employer Contribution Rate before allocation by group.

The normal cost is the level percentage of compensation which would be required for new active members over their period of active service to fund the liability for any prospective benefits earned by the new members. This calculation used data for all active members who had not yet completed one year of credited service. The normal cost increased from 9.81 percent in 1992 to 10.23 percent in 1993.

The unfunded liability that existed on December 31, 1990 is being funded over 20 years from July 1, 1991. Unfunded liability increases (decreases) due to changes in assumptions, changes in legislation, or gains or losses because actual experience differs from the actuarial assumptions, will typically be amortized over 20 years from the July 1 following the effective date of the change. Schedule B shows that the net reduction in the unfunded liability in 1993 was \$556,924,446. The credit for that gain will be recognized as an offset against contributions otherwise needed over the 20 years beginning July 1, 1994. The total credit for amortization of the surplus increased from 0.54 percent of payroll to 1.70 percent of payroll.

The Employer Contribution Rate is comprised of the Normal Cost and the amortization of the unfunded liabilities. The Employer Contribution Rate calculated as a result of the December 31, 1993 actuarial valuation is 8.53 percent. The 1992 valuation had produced an Employer Contribution Rate of 9.27 percent of payroll. The Board decided to continue the 8.92 percent contribution rate used for fiscal year 1992/93 for both the 1993/94 and 1994/95 fiscal years.



## STATE EMPLOYES' RETIREMENT SYSTEM

### Employer Contribution Rates by Group

Schedule C summarizes and shows the development of the rate for the cost of additional benefits for each group of members with different benefits. The basic employer contribution rate for general benefits is 7.39 percent of salary. There is an additional employer contribution required to pay for the added liability for members entitled to full benefits at age 50; and for those entitled to an annual benefit rate that is greater than the basic 2 percent rate. The Park Rangers received a benefit improvement in 1993 that resulted in a separate group rate. The Park Rangers, State Police Officers, Class E members, and the Capitol Police are charged the amount necessary to fund the past service cost of benefit improvements that were effective in prior years. The effect of the adjustments is to produce an aggregate employer contribution rate that is equal to the required rate of 8.53 percent of total payroll.

The complete schedule of contributions by group is shown in the first column of the following table. The Board action to continue the 8.92 percent employer contribution into the 1994/95 fiscal year resulted in the contributions by group shown in the second column. This allocation of the 8.92 percent total cost is slightly different from that in the 1993 report because of shifts in the payroll among groups.

	<u>Valuation</u>	<u>Actual</u>
Class A with age 60 benefit	7.39%	7.77%
Class A with age 50 benefit	9.41	9.79
Class A Park Rangers	10.64	11.02
Class A Capitol Police	10.67	11.05
Class A State Police	25.76	26.36
Class C State Police	25.76	26.36
Class C Enforcement Officers	9.41	9.79
Class D	35.29	36.71
Class E	<u>13.78</u>	<u>14.41</u>
Total Overall Cost	<b>8.53%</b>	<b>8.92%</b>

Schedule D shows the development of the contribution rates for additional annuities for certain State Police and Enforcement Officers. These members receive an additional annuity that is equal to the accumulated member contributions and interest at retirement determined as if the members were at least age 60 at retirement. These benefits have been fully funded by past contributions so no future contribution is required. In 1993, the Enforcement Officer account was reduced by \$12,552,734, which was the excess of assets over liabilities in the account as of December 31, 1992. An adjustment was made in 1993 to maintain the balance between assets and liabilities.

## STATE EMPLOYES' RETIREMENT SYSTEM

### Change in Employer Contribution Rate

Schedule E contains an analysis of the change in the Employer Contribution Rate and Unfunded Liability from the 1992 to 1993 valuation. The excess interest earnings of \$427,000,000 brought into the assets in 1993 reduced the cost by 0.90 percent of salary. The reduction in cost for excess investment return was offset by a 0.09 percent increase in the contribution related to changes in the demographics of new entrants, and 0.07 percent increase due to other factors.

The net result of all changes was to reduce the aggregate employer contribution from 9.27 percent of compensation to 8.53 percent of compensation.

The amortization payments on the unfunded liability would have increased the surplus to \$289,952,326 as of December 31, 1992 if there had been no unexpected changes. The unexpected changes resulted in a surplus of \$846,876,772.

### Actuarial Balance Sheet and Account Balance Transfers

Schedule F contains the actuarial balance sheet. These future contributions consist of normal cost payments and member contributions, offset by the credit resulting from the excess of assets over liabilities.

Each year it is necessary to compare the account balance in the Annuity Reserve Account with the actuarial liability of that account and make the necessary transfer to bring the account into balance with the liability. The necessary transfer of \$51,830,764 from the State Accumulation Account to the Annuity Reserve Account is shown on Schedule G. A transfer was also necessary to keep the Enforcement Officers Benefit Account in balance.

### Accounting Disclosure Statements

Schedule H provides information required by the Governmental Accounting Standards Board (GASB) and information on the accumulated plan benefits as defined by the Financial Accounting Standards Board (FASB).

The GASB liability for projected benefits (the Projected Benefit Obligation) is a standardized disclosure measure of the present value of pension benefits estimated to be payable in the future as a result of participant service to December 31, 1993. The liability was determined to be \$11,853,943,543. The market value of assets was 115.6 percent of the Projected Benefit Obligation. The interest rate used in determining the GASB liability was 9.25 percent. The rate of 9.25 percent is approximately equal to the investment return rates averaged over the period during which past obligations to current employees and annuitants will be paid.

## STATE EMPLOYES' RETIREMENT SYSTEM

The FASB liability does not include the effect of assumed future salary increases and is calculated at a lower interest rate than the GASB liability. The FASB actuarial present value of accumulated plan benefits was determined to be \$10,631,426,819 and the ratio of market value of assets to accumulated plan benefits was 128.9 percent. The value decreased from \$12,260,584,752 in 1992 to \$10,631,426,819 in 1993.

For previous determinations of the FASB liability, the interest rate used was the interest rate for immediate annuities, as of the first day of the plan year following the valuation, published by the Pension Benefit Guaranty Corporation. The interest rate used in the December 31, 1992 valuation for FASB was 5.75 percent. The corresponding rate for immediate annuities this year is 4.0 percent. It was determined that using a 4.0 percent rate would result in an artificially high FASB liability. The FASB liabilities shown on page 2 of Schedule H are calculated using an interest rate of 7.75 percent. The 1993 report uses an assumption of 7.75 percent which is in the range of the latest (April 1993) rates for 30-Year Treasury Bonds (7.27 percent) and Aaa Seasoned Issue Corporate Bonds as reported by Moody's Investment Service (7.88 percent).

### Plan Assets

Schedule I summarizes the development of the actuarial value of assets as of December 31, 1993. The assets are based on the unaudited financial statements prepared by SERS. The asset valuation method will smooth out year-to-year fluctuations in the market value. The approach gradually recognizes, over a 5 year period, the differences between total investment returns and the assumed rate of return (9.9 percent in 1993). This smoothing method includes 20 percent of the 1993 asset gain of \$381,972,531 this year, with the remainder to be recognized over the next four years.

### Projection

Schedule J is a ten year projection of the annuitants and active employees, and the contributions and benefit payments.

### Participant Data

Section I of Schedule K provides a distribution of the active participants as of December 31, 1993 by benefit class, sex, age, and length of service. It also shows the average annualized salary in 1993 by age group and sex. Section II of the schedule shows the retired participants, beneficiaries, and terminated vested participants by age, sex, and benefit amounts.

Although we have made tests to check for reasonableness and consistency, we have not independently audited the data which were submitted by SERS.

## STATE EMPLOYEES' RETIREMENT SYSTEM

### Plan Provisions

Schedule L contains a summary of the principal provisions of the plan in effect after enactment of Act 1991-23. Since the prior valuation, a benefit improvement was given to Park Rangers. There were no other changes in plan provisions in 1993.

Senate Bill 974 was passed and signed into law in 1994. Those changes will be reflected in the 1994 valuation and detailed in Schedule L of that report.

### Actuarial Assumptions

Schedule M summarizes the actuarial assumptions used for the valuation. The actuarial assumptions are the same as those introduced in 1990 which reflect the experience of the SERS during 1986 through 1990.

### Funding Methods

Schedule N explains the funding methods used in the valuation. The asset valuation method amortizes investment gains and losses over five years. The funding and contribution policy provides for reasonable levels of contribution that will fund the cost of future retirement credits with a credit for amortization of the excess of assets over liabilities. The section explains the calculation of the liabilities required for the accountant reports.

### Definitions

Schedule O defines certain technical terms used in the valuation.

## STATE EMPLOYES' RETIREMENT SYSTEM

### UNFUNDED LIABILITY AND NORMAL COST DECEMBER 31, 1993

I. Present Value of Benefits:

1)	Active and Inactive Participants	
	a) Superannuation and Withdrawal	\$ 11,620,369,244
	b) Disability	633,437,394
	c) Death	802,743,448
	d) Refunds	58,121,769
	e) Special Police and Enforcement	
	Officer Benefits	44,001,414
2)	Annuitants and Beneficiaries	<u>4,806,907,015</u>
3)	Total	\$ 17,965,580,284

II. Present Value of Member and Employer Contributions:

1)	Employer portion of Normal Cost	\$ 3,841,720,195
2)	Member Contributions	1,910,124,113
3)	Special Police and Enforcement	
	Officer Contributions	<u>0</u>
4)	Total	\$ 5,751,844,308

III. Actuarial Accrued Liability: (I) - (II) . . . . . \$ 12,213,735,976

IV. Adjusted Actuarial Value of Assets . . . . . \$ 13,060,612,748

V. Unfunded Liability (III) - (IV) . . . . . \$ (846,876,772)

VI. Employer Normal Cost Rate

1)	Normal Cost Rate for new active members to fund:	
	a) Superannuation and Withdrawal	13.08%
	b) Disability	0.86
	c) Death	0.74
	d) Refunds	<u>0.55</u>
	e) Total	15.23%
2)	Member Deductions	5.00%
3)	Employer Normal Cost (1)-(2)	10.23%

STATE EMPLOYEES' RETIREMENT SYSTEM

TOTAL EMPLOYER CONTRIBUTION RATE IN FISCAL YEAR 1994-95

	<u>Funding Period</u> <u>20 Years from July 1</u>	<u>Initial</u> <u>Amount of</u> <u>Liability</u>	<u>Outstanding</u> <u>Balance as of</u> <u>12/31/93</u>	<u>Annual Payment to Fund</u> <u>Amount</u>	<u>Percent*</u>
I. Amortization of:					
1) Liability for Supplemental Annuities	1991	\$ 405,641,841	\$ 425,822,135	\$ 37,632,121	1.01%
2) Liability for Other Benefits	1991	461,468,532	484,426,149	42,811,263	1.15%
3) Liability (Asset) for Changes in 1991	1992	(735,926,889)	(762,884,929)	(64,625,433)	(1.74)%
4) Liability (Asset) for Changes in 1992	1993	(428,770,084)	(437,315,681)	(35,597,772)	(0.95)%
5) Liability (Asset) for Changes in 1993	1994	(556,924,446)	<u>\$(556,924,446)</u>	<u>\$(43,659,461)</u>	<u>(1.17)%</u>
6) Total Liability Payment (1) + (2) + (3) + (4) + (5)			\$ (846,876,772)	\$ (63,439,282)	(1.70)%
II. Employer Normal Cost					10.23%
III. Total Employer Cost (I) + (II)					8.53%

\*The payment is expressed as a percentage of the projected total payroll for active members in fiscal year 1994-95 of \$3,731,515,000.

STATE EMPLOYEES' RETIREMENT SYSTEM

EMPLOYER CONTRIBUTION RATE BY GROUP

	<u>Class A (Age 60 Super- annuation)</u>	<u>Class A (Age 50 Super- annuation)</u>	<u>Class A Park Rangers</u>	<u>Class A Capitol Police</u>	<u>Class A State Police</u>	<u>Class C State Police</u>	<u>Class C Enforcement Officers</u>	<u>Class D</u>	<u>Class E</u>
1) Basic Contribution Rate	7.39%	7.39%	7.39%	7.39%	7.39%	7.39%	7.39%	7.39%	7.39%
2) Age 50 Superannuation	-	2.02%	1.76%	1.76%	2.02%	2.02%	2.02%	2.02%	-
3) Multiplier Adjustment	1.00	1.00	1.00	1.00	1.558	1.558	1.00	3.75	1.6582
4) Past Liability	-	-	1.49%	1.52%	11.10%	11.10%	-	-	1.53%
5) Class C Additional Annuities	-	-	-	-	0.00	0.00	0.00	-	-
6) Adjusted Contribution Rates: [(1) + (2)] x 3 + 4 + 5	7.39%	9.41%	10.64%	10.67%	25.76%	25.76%	9.41%	35.29%	13.78%
7) Projected 1993/94 Payroll	\$3,165,526,000	\$322,403,000	\$3,178,000	\$3,048,000	\$110,985,000	\$60,152,000	\$2,754,000	\$1,044,000	\$62,425,000
8) Employer Contribution Amount	\$233,932,000	\$30,338,000	\$338,000	\$325,000	\$28,590,000	\$15,495,000	\$259,000	\$368,000	\$8,602,000

Notes: The total employer contribution (\$318,298,000) is the average employer contribution rate from Schedule B (8.53 percent) times the total projected payroll (\$3,731,515,000). The Class A Basic Contribution Rate (7.39 percent) was determined as the percentage needed to produce employer contribution amounts by class that sum to \$318,298,000. The resulting total contribution amount may differ slightly because of rounding.

The above allocation by Group is based on the valuation calculation of the employer contribution of 8.53 percent. The actual employer contribution for 1994/95 will be 8.92 percent as explained on page 2 of the General Discussion. The allocation of the 8.92 percent by Group is shown in the Valuation Highlights on page 1.

**STATE EMPLOYEES' RETIREMENT SYSTEM**

**STATE POLICE AND ENFORCEMENT OFFICERS - ADDITIONAL ANNUITY RATE**  
**(Fiscal Year 1994-95)**

	<u>State Police</u>	<u>Enforcement Officers</u>
1) Balance in Benefit Account as of December 31, 1993 .....	\$795,334,016	\$16,552,322
2) Present Value of Benefits for Annuitants and Beneficiaries .....	598,260,694	14,439,140
3) Assets available for additional annuities for Active Members: (1) - (2) .....	197,073,322	2,113,182
4) Present Value of additional annuities for Active Members .....	41,888,232	2,113,182
5) Present Value of Future Contribution to fund additional annuities: (4) - (3) .....	0	0
6) Present Value of Future Compensation for eligible Active Members .....	*	*
7) Contribution Rate as a percentage of payroll payable January 1: (5) / (6) .....	0.00%	0.00%

\* Not calculated because additional annuity is fully funded.



**STATE EMPLOYES' RETIREMENT SYSTEM**

**ANALYSIS OF CHANGE IN EMPLOYER CONTRIBUTION RATE**

	<u>Normal Cost</u>	<u>Unfunded Liabilities</u>	<u>Total</u>
I. December 31, 1992 Valuation .....	9.81%	(0.54)%	9.27%
II. Changes - 12/31/93 Valuation:			
1) Excess Investment Earnings .....		(0.90)%	(0.90)%
2) Change in Demographics of the New Entrants .....	0.42	(0.33)	0.09
3) Difference Due to Actual Experience Different from Actuarial Assumptions ..		0.07	0.07
4) Total Change .....	0.42%	(1.16)%	(0.74)%
III. December 31, 1993 Valuation:			
(I) + (II) .....	10.23%	(1.70)%	8.53%

**ANALYSIS OF CHANGE IN UNFUNDED LIABILITY**

I. December 31, 1992 Unfunded Liability .....	\$ (280,973,841)
II. Expected Amortization Payment .....	(18,837,925)
III. Expected Liability as of December 31, 1993 [(I) x 1.099] - (II) .....	(289,952,326)
IV. Change in Liability Due to:	
1) Excess Investment Earnings .....	(427,317,932)
2) Change in Demographics of New Entrants .....	(157,724,583)
3) Difference Due to Actual Experience Different from Actuarial Assumptions .....	28,118,069
4) Total Change .....	\$(556,924,446)
V. December 31, 1993 Unfunded Liability: (III) + (IV) .....	\$ (846,876,772)

STATE EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL BALANCE SHEET AS OF DECEMBER 31, 1993

A S S E T S

L I A B I L I T I E S

<u>Present Assets:</u>		<u>Present Value of Benefits Payable to Annuitants and Beneficiaries from:</u>	
Members' Savings Account	\$ 2,170,593,220	Annuity Reserve Account	\$ 4,194,207,181
Annuity Reserve Account	4,194,207,181	State Police Benefit Account	598,260,694
State Police Benefit Account	795,344,016	Enforcement Officers Benefit Account	14,439,140
Enforcement Officers Benefit Account	16,552,322	Total for Annuitants and Beneficiaries	\$ 4,806,907,015
State Accumulation Account	6,950,010,493		
Supplemental Annuity Account	(425,822,135)		
Total Present Assets (Market Value)	\$13,700,885,097		
Adjustment to Smooth Market Fluctuations	(624,218,017)		
Adjustments for Contributions Payable in the Fiscal year	(16,054,332)		
Total Present Assets (Actuarial Value)	\$13,060,612,748		
<u>Present Value of Future Contributions</u>		<u>Member Savings Account and State Accumulation Account</u>	
Members' Contributions (Employee)	\$ 1,910,124,113	Superannuation and Withdrawal	\$ 11,620,369,244
Normal Cost Contributions (Employer)	3,841,720,195	Disability	633,437,394
Accrued Liability Amortization (Employer)	(1,272,698,907)	Death	802,743,448
Supplemental Annuity Amortization (Employer)	425,822,135	Refunds	58,121,769
Special State Police Contributions (Employer)	0	Subtotal	\$13,114,671,855
Special Enforcement Officer Contributions (Employer)	0	State Police Benefit Account	41,888,232
Total Future Contributions	\$ 4,904,967,536	Enforcement Officers Benefit Account	2,113,182
TOTAL ASSETS	\$17,965,580,284	Total	\$13,158,673,269
		TOTAL LIABILITIES	\$17,965,580,284

**STATE EMPLOYES' RETIREMENT SYSTEM**

**REQUIRED TRANSFERS WITHIN SERS ACCOUNTS**

I. Annuity Reserve Account

Balance as reported by SERS .....	\$ 4,142,376,417
Transfer from State Accumulation Account .....	<u>51,830,764</u>
December 31, 1993 balance after transfers .....	\$ 4,194,207,181

II. State Accumulation Account

Balance as reported by SERS .....	\$ 7,002,322,426
Transfer to Annuity Reserve Account .....	(51,830,764)
Transfer to Enforcement Officer Account .....	<u>(481,169)</u>
December 31, 1993 Balance after transfers .....	\$ 6,950,010,493

III. Enforcement Officers Benefit Account

Balance as reported by SERS .....	\$ 16,071,153
Transfer from State Accumulation Account .....	<u>481,169</u>
December 31, 1993 balance after transfers .....	\$ 16,552,322

**STATE EMPLOYES' RETIREMENT SYSTEM**

**ACCOUNTING DISCLOSURE STATEMENTS**

**I. FUNDING STATUS OF PROJECTED BENEFIT OBLIGATION AS OF DECEMBER 31, 1993**

	<u>Number of</u> <u>Members</u>	
1) Projected benefit obligation		
a) Retirees and beneficiaries		
1. Superannuation retirements .....	47,824	\$3,091,625,952
2. Early retirements .....	21,645	1,322,815,329
3. Disabled .....	4,425	214,213,665
4. Beneficiaries .....	<u>6,796</u>	<u>191,037,294</u>
5. Total .....	80,690	\$4,819,692,240
b) Inactive participants .....	4,717	\$ 67,372,945
c) Active members		
1. Employee contributions and interest .....		\$2,166,958,219
2. Employer-financed liability - vested .....	65,026	4,391,134,940
3. Employer-financed liability - nonvested .....	<u>46,936</u>	<u>408,785,199</u>
4. Total .....	111,962	\$6,966,878,358
d) Total obligation for all members .....	197,369	\$11,853,943,543
2) Market value of assets available for benefits .....		\$13,700,885,096
3) Unfunded projected benefit obligation .....		\$(1,846,941,553)
4) Assets as a percent of projected benefit obligation .....		115.6%

The amount shown above as the projected benefit obligation (PBO) is a standardized disclosure measure of the present value of pension benefits estimated to be payable in the future as a result of employee service to December 31, 1993. The PBO was calculated in conformance with the requirements of Statement No. 5 of the Governmental Accounting Standards Board (GASB) - "Disclosure of Pension Information by Public Employees' Retirement Systems and State and Local Governmental Employers." The investment return assumption is 9.25 percent. The calculation assumes salaries will increase as stated in Schedule N. No post-retirement increases are assumed.

**SCHEDULE H**

(Page 1 of 2)

STATE EMPLOYEES' RETIREMENT SYSTEM

ACCOUNTING DISCLOSURE STATEMENTS

II. FUNDING STATUS OF ACCUMULATED PLAN BENEFITS AS OF DECEMBER 31, 1993

1)	Actuarial Present Value of Accumulated Plan Benefits	
	a) Vested	
	1. Active participants	\$ 5,080,834,674
	2. Inactive	54,460,078
	3. Superannuation Retirements	3,385,051,163
	4. Early Retirements	1,481,472,656
	5. Disabled	235,613,218
	6. Beneficiaries	<u>208,267,134</u>
	7. Total Vested	\$10,445,698,923
	b) Non-vested	\$ 185,727,896
	c) Total Accumulated Plan Benefits	\$10,631,426,819
2)	Market Value of Assets	\$13,700,885,096
3)	Ratio of market value of assets to actuarial present value of accumulated benefits	
	a) Vested Benefits	131.2%
	b) Total Accumulated Benefits	128.9%
4)	Changes in Accumulated Plan Benefits	
	a) Value as of December 31, 1992	\$12,260,584,752
	b) Changes during year	
	1. Due to passage of time and other causes	\$ 614,120,990
	2. Due to change in interest rate	(2,243,278,923)
	3. Total change	(1,629,157,933)
	c) Value as of December 31, 1993	\$10,631,426,819

The amount shown above as the present value of accumulated plan benefits is a standardized disclosure measure of the present value of pension benefits estimated to be payable in the future as a result of employee service to December 31, 1993. This measure assumes that salaries will not increase in the future. The investment return assumption is 7.75 percent.

STATE EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL VALUE OF ASSETS

I.	Development of 12/31/93 Expected Actuarial Value:	
1)	Actuarial Value as of 12/31/92 .....	\$11,783,795,443
2)	Contributions in 1993 .....	507,035,652
3)	Benefits and Expenses in 1993 .....	(793,878,953)
4)	Interest @ 9.9% to 12/31/93 on (1) .....	1,166,595,749
5)	Interest @ 9.9% to 12/31/93 on .5 x ((2) - (3)) .....	(14,198,743)
6)	Expected Actuarial Value as of 12/31/93: (1) + (2) + (3) + (4) + (5) .....	\$12,649,349,148
II.	Previous Differences Not Yet Amortized:	
1)	Unrecognized Amount of 12/31/89 Difference: .2 x \$1,051,384,490 .....	\$ 210,276,898
2)	Unrecognized amount of 12/31/90 Difference: .4 x \$(364,286,067) .....	(145,714,427)
3)	Unrecognized amount of 12/31/91 Difference: .6 x \$1,245,070,096 .....	747,042,058
4)	Unrecognized amount of 12/31/92 Difference: .8 x \$(177,551,390) .....	(142,041,112)
5)	Total .....	\$ 669,563,417
III.	Gain or Loss from 1993	
1)	Market Value of Assets on 12/31/93 .....	\$ 13,700,885,096
2)	Expected Market Value II(5) + I(6) .....	<u>13,318,912,565</u>
3)	Gain (loss) from 1993 Investments (1) - (2) .....	\$ 381,972,531
IV.	Development of Actuarial Value of Assets as of 12/31/93:	
1)	20% of \$1,051,384,490 (12/31/89 Difference): .....	\$ 210,276,898
2)	20% of \$(364,286,067) (12/31/90 Difference): .....	(72,857,213)
3)	20% of \$1,245,070,096 (12/31/91 Difference): .....	249,014,019
4)	20% of \$(177,551,390) (12/31/92 Difference): .....	(35,510,278)
5)	20% of \$381,972,531 (12/31/93 Difference): .....	76,394,5061
6)	Total Difference: (1) + (2) + (3) + (4) + (5) .....	\$ 427,317,932
7)	Actuarial Value at 12/31/93: I(6) + IV(6) .....	\$ 13,076,667,080

**STATE EMPLOYEES' RETIREMENT SYSTEM**

**ACTUARIAL VALUE OF ASSETS**

V.	Adjustments to Actuarial Value of Assets For Transactions Before 7/1/94:		
	1) Employer Total Cost Payable 1/1/94 Through 6/30/94 .....	\$	155,024,630
	2) Employer Normal Cost Payable 1/1/94 Through 6/30/94 .....		(171,078,962)
	3) Total Adjustments .....	\$	(16,054,332)
VI.	Adjusted Actuarial Value of Assets (IV) + (V) .....	\$	<u>13,060,612,748</u>

**STATE EMPLOYEES' RETIREMENT SYSTEM**

**PROJECTION OF POPULATION, BENEFITS, AND CONTRIBUTIONS**

**Projection of Annuitants and Employees**

Year Ending <u>December 31</u>	<u>Annuitants</u>			<u>Active Employees</u>
	<u>Former Employees</u>	<u>Survivors</u>	<u>Total</u>	
1987 Actual	64,086	5,429	69,515	109,499
1988 Actual	65,655	5,661	71,316	109,611
1989 Actual	66,951	5,879	72,830	109,819
1990 Actual	68,156	6,066	74,222	111,248
1991 Actual	69,908	6,332	76,240	105,731
1992 Actual	73,897	6,595	80,492	109,609
1993 Actual	73,894	6,796	80,690	116,652
1994	73,894	7,041	80,935	116,652
1995	74,334	7,266	81,600	116,652
1996	75,146	7,469	82,615	116,652
1997	76,464	7,649	84,113	116,652
1998	77,640	7,802	85,442	116,652
1999	78,668	7,926	86,594	116,652
2000	79,541	8,022	87,563	116,652
2001	80,250	8,086	88,336	116,652
2002	80,788	8,118	88,906	116,652
2003	81,188	8,159	89,347	116,652
2004	81,588	8,126	89,714	116,652

**Projection of Expected Contributions and Benefits**

(Millions of Dollars)

<u>Calendar Year</u>	<u>Contribution</u>		<u>Benefits/ Expenses</u>
	<u>Employee</u>	<u>Employer</u>	
1987 Actual	\$147	\$366	\$490
1988 Actual	153	382	521
1989 Actual	165	416	573
1990 Actual	175	418	607
1991 Actual	183	381	664
1992 Actual	187	318	851
1993 Actual	190	312	781
1994	196	322	794
1995	203	341	872
1996	212	353	937
1997	220	370	1,015
1998	229	394	1,108
1999	238	408	1,207
2000	247	436	1,280
2001	257	466	1,354
2002	268	484	1,429
2003	278	504	1,507
2004	289	524	1,830

The projection is based upon the following assumptions: Investment return of 9.9 percent; general pay increases of 4.0 percent; and supplemental increases in 1994, 1999, and 2004.



**STATE EMPLOYES' RETIREMENT SYSTEM**

**I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1993**  
**ACTIVE EMPLOYEES\***

Age	Males - Full Years of Service to December 31, 1993							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
less than 20	8	0	0	0	0	0	0	8	\$17,138
20-24	751	57	0	0	0	0	0	808	20,274
25-29	1,800	873	39	0	0	0	0	2,712	23,896
30-34	1,657	1,856	1,048	157	0	0	0	4,718	27,329
35-39	1,485	1,828	1,727	1,267	258	0	0	6,565	29,740
40-44	1,762	1,644	1,631	2,101	2,418	222	0	9,778	32,259
45-49	1,150	1,139	1,220	1,508	3,190	1,809	81	10,097	35,675
50-54	819	780	713	795	1,545	1,869	885	7,406	38,055
55-59	571	612	571	627	980	1,017	969	5,347	39,277
60-64	331	441	396	422	455	480	490	3,015	39,336
65+	156	185	158	124	111	112	158	1,004	40,844
Total	<u>10,490</u>	<u>9,415</u>	<u>7,503</u>	<u>7,001</u>	<u>8,957</u>	<u>5,509</u>	<u>2,583</u>	<u>51,458</u>	<u>\$33,670</u>

Average age ..... 44.98  
Average service ..... 14.14

Age	Females - Full Years of Service to December 31, 1993							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
less than 20	45	0	0	0	0	0	0	45	\$17,624
20-24	1,002	205	0	0	0	0	0	1,207	19,106
25-29	1,608	1,291	161	0	0	0	0	3,060	21,940
30-34	1,476	1,700	1,385	303	0	0	0	4,864	24,628
35-39	1,469	1,659	1,638	1,767	571	0	0	7,104	26,905
40-44	1,306	1,571	1,361	1,853	2,568	496	0	9,155	28,529
45-49	1,115	1,348	1,175	1,170	1,745	1,309	112	7,974	29,241
50-54	623	952	900	1,060	995	781	418	5,729	29,495
55-59	347	552	753	812	968	521	328	4,281	29,621
60-64	167	280	408	372	511	269	152	2,159	29,500
65+	51	91	115	119	111	90	89	666	30,806
Total	<u>9,209</u>	<u>9,649</u>	<u>7,896</u>	<u>7,456</u>	<u>7,469</u>	<u>3,466</u>	<u>1,099</u>	<u>46,244</u>	<u>\$27,598</u>

Average age ..... 43.43  
Average service ..... 13.02

\* The following three pages contain information on members in special categories. These include selected hazardous duty members, legislators, judges and district judges. The above information is for all other active members. Page five of Schedule K is the total of all active categories. Page six is the total of all active and inactive employees.

**STATE EMPLOYES' RETIREMENT SYSTEM**

**I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1993**  
**SELECTED HAZARDOUS DUTY\***

Age	Males - Full Years of Service to December 31, 1993							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
less than 20	0	0	0	0	0	0	0	0	\$ 0
20-24	367	1	0	0	0	0	0	368	24,069
25-29	1,533	383	4	0	0	0	0	1,920	28,722
30-34	695	909	282	5	0	0	0	1,891	33,660
35-39	354	517	555	206	3	0	0	1,635	36,327
40-44	301	398	329	428	183	9	0	1,648	37,239
45-49	254	402	241	267	736	376	6	2,282	40,441
50-54	120	198	132	84	212	292	90	1,128	40,605
55-59	56	140	77	60	54	59	72	518	37,764
60-64	19	79	33	27	27	15	37	237	37,370
65+	<u>5</u>	<u>13</u>	<u>7</u>	<u>6</u>	<u>0</u>	<u>0</u>	<u>3</u>	<u>34</u>	<u>36,815</u>
Total	<u>3,704</u>	<u>3,040</u>	<u>1,660</u>	<u>1,083</u>	<u>1,215</u>	<u>751</u>	<u>208</u>	<u>11,661</u>	<u>\$35,690</u>

Average age . . . . . 39.63

Average service . . . . . 10.48

Age	Females - Full Years of Service to December 31, 1993							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
less than 20	0	0	0	0	0	0	0	0	\$ 0
20-24	26	0	0	0	0	0	0	26	23,231
25-29	118	31	0	0	0	0	0	149	27,026
30-34	91	81	47	2	0	0	0	221	31,928
35-39	106	77	76	21	4	0	0	284	32,698
40-44	83	59	41	32	24	5	0	244	34,449
45-49	61	54	36	25	22	9	1	208	34,596
50-54	31	29	24	18	11	12	5	130	36,809
55-59	21	21	21	16	10	7	4	100	35,460
60-64	4	8	16	6	2	2	0	38	38,241
65+	<u>0</u>	<u>1</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>8</u>	<u>38,059</u>
Total	<u>541</u>	<u>361</u>	<u>264</u>	<u>122</u>	<u>74</u>	<u>36</u>	<u>10</u>	<u>1,408</u>	<u>\$33,142</u>

Average age . . . . . 40.88

Average service . . . . . 8.39

\*Enforcement officers, correction officers, psychiatric security aides, Capitol Police Officers, and officers of the Pennsylvania State Police and Delaware River Port Authority.

**STATE EMPLOYEES' RETIREMENT SYSTEM**

**I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1993**

**LEGISLATORS**

Age	Males - Full Years of Service to December 31, 1993							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
less than 20	0	0	0	0	0	0	0	0	\$ 0
20-24	0	0	0	0	0	0	0	0	0
25-29	2	0	0	0	0	0	0	2	47,000
30-34	7	4	0	1	0	0	0	12	47,000
35-39	14	4	13	0	0	0	0	31	47,213
40-44	4	5	14	12	2	0	0	37	49,085
45-49	5	8	16	7	6	2	0	44	48,481
50-54	6	7	4	7	6	3	0	33	50,111
55-59	3	3	6	4	3	0	2	21	51,669
60-64	3	3	2	9	2	0	4	23	48,900
65+	<u>3</u>	<u>2</u>	<u>7</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>21</u>	<u>48,704</u>
Total	<u>47</u>	<u>36</u>	<u>62</u>	<u>43</u>	<u>22</u>	<u>7</u>	<u>7</u>	<u>224</u>	<u>\$48,916</u>

Average age . . . . . 49.38  
Average service . . . . . 12.38

Age	Females - Full Years of Service to December 31, 1993							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
less than 20	0	0	0	0	0	0	0	0	\$ 0
20-24	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0
35-39	1	0	0	0	0	0	0	1	47,000
40-44	0	1	2	0	1	0	0	4	47,000
45-49	5	0	0	0	0	0	0	5	47,000
50-54	2	0	2	0	0	0	0	4	47,000
55-59	2	1	1	0	0	0	0	4	47,000
60-64	0	2	0	0	0	0	0	2	47,000
65+	<u>0</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>2</u>	<u>4</u>	<u>48,648</u>
Total	<u>10</u>	<u>5</u>	<u>6</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>2</u>	<u>24</u>	<u>\$47,275</u>

Average age . . . . . 53.17  
Average service . . . . . 9.96

**STATE EMPLOYEES' RETIREMENT SYSTEM**

**I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1993**

**JUDGES AND DISTRICT JUSTICES**

<u>Age</u>	<u>Males - Full Years of Service to December 31, 1993</u>							<u>Total</u>	<u>Average Salary</u>
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>		
less than 20	0	0	0	0	0	0	0	0	\$ 0
20-24	0	0	0	0	0	0	0	0	0
25-29	2	0	0	0	0	0	0	2	49,594
30-34	2	4	0	0	0	0	0	6	50,547
35-39	14	16	4	2	0	0	0	36	58,043
40-44	34	35	22	12	3	0	0	106	60,471
45-49	36	52	36	12	5	5	0	146	69,225
50-54	18	42	22	17	6	9	5	119	66,011
55-59	10	22	19	28	14	16	3	112	69,299
60-64	6	19	25	30	25	20	5	130	70,799
65+	<u>1</u>	<u>9</u>	<u>19</u>	<u>21</u>	<u>20</u>	<u>20</u>	<u>19</u>	<u>109</u>	<u>72,016</u>
<b>Total</b>	<b><u>123</u></b>	<b><u>199</u></b>	<b><u>147</u></b>	<b><u>122</u></b>	<b><u>73</u></b>	<b><u>70</u></b>	<b><u>32</u></b>	<b><u>766</u></b>	<b><u>\$67,466</u></b>

Average age ..... 53.29  
Average service ..... 13.18

<u>Age</u>	<u>Females - Full Years of Service to December 31, 1993</u>							<u>Total</u>	<u>Average Salary</u>
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>		
less than 20	0	0	0	0	0	0	0	0	\$ 0
20-24	0	0	0	0	0	0	0	0	0
25-29	2	0	0	0	0	0	0	2	46,911
30-34	5	1	0	0	0	0	0	6	44,604
35-39	5	9	2	0	0	0	0	16	54,998
40-44	12	17	2	4	1	0	0	36	73,195
45-49	8	15	4	3	1	1	0	32	70,325
50-54	3	11	5	3	0	2	0	24	51,824
55-59	7	5	7	4	3	1	2	29	57,333
60-64	1	4	6	2	4	1	1	19	48,552
65+	<u>1</u>	<u>1</u>	<u>7</u>	<u>0</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>13</u>	<u>60,812</u>
<b>Total</b>	<b><u>44</u></b>	<b><u>63</u></b>	<b><u>33</u></b>	<b><u>16</u></b>	<b><u>11</u></b>	<b><u>6</u></b>	<b><u>4</u></b>	<b><u>177</u></b>	<b><u>\$60,713</u></b>

Average age ..... 49.81  
Average service ..... 9.95

**STATE EMPLOYES' RETIREMENT SYSTEM**

**I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1993**

**ALL ACTIVE EMPLOYES**

Age	Males - Full Years of Service to December 31, 1993							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
less than 20	8	0	0	0	0	0	0	8	\$17,138
20-24	1,118	58	0	0	0	0	0	1,176	21,461
25-29	3,337	1,256	43	0	0	0	0	4,636	25,916
30-34	2,361	2,773	1,330	163	0	0	0	6,627	29,192
35-39	1,867	2,365	2,299	1,475	261	0	0	8,267	31,232
40-44	2,101	2,082	1,996	2,553	2,606	231	0	11,569	33,280
45-49	1,445	1,601	1,513	1,794	3,937	2,192	87	12,569	36,975
50-54	963	1,027	871	903	1,769	2,173	980	8,686	38,815
55-59	640	777	673	719	1,051	1,092	1,046	5,998	39,751
60-64	359	542	456	488	509	515	536	3,405	40,465
65+	165	209	191	154	134	134	181	1,168	43,777
<b>Total</b>	<b>14,364</b>	<b>12,690</b>	<b>9,372</b>	<b>8,249</b>	<b>10,267</b>	<b>6,337</b>	<b>2,830</b>	<b>64,109</b>	<b>\$34,495</b>

Average age ..... 44.12  
Average service ..... 13.46

Age	Females - Full Years of Service to December 31, 1993							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
less than 20	45	0	0	0	0	0	0	45	\$17,624
20-24	1,028	205	0	0	0	0	0	1,233	19,193
25-29	1,728	1,322	161	0	0	0	0	3,211	22,192
30-34	1,572	1,782	1,432	305	0	0	0	5,091	24,969
35-39	1,581	1,745	1,716	1,788	575	0	0	7,405	27,190
40-44	1,401	1,648	1,406	1,889	2,594	501	0	9,439	28,860
45-49	1,189	1,417	1,215	1,198	1,768	1,319	113	8,219	29,548
50-54	659	992	931	1,081	1,006	795	423	5,887	29,759
55-59	377	579	782	832	981	529	334	4,414	29,952
60-64	172	294	430	380	517	272	153	2,218	29,829
65+	52	94	126	121	114	92	92	691	31,558
<b>Total</b>	<b>9,804</b>	<b>10,078</b>	<b>8,199</b>	<b>7,594</b>	<b>7,555</b>	<b>3,508</b>	<b>1,115</b>	<b>47,853</b>	<b>\$27,894</b>

Average age ..... 43.38  
Average service ..... 12.87

**STATE EMPLOYES' RETIREMENT SYSTEM**

**I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1993**

**ACTIVE AND INACTIVE EMPLOYEES**

<u>Age</u>	<u>Males - Full Years of Service to December 31, 1993</u>							<u>Total</u>
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
less than 20	9	0	0	0	0	0	0	9
20-24	1,181	59	0	0	0	0	0	1,240
25-29	3,464	1,264	44	0	0	0	0	4,772
30-34	2,452	2,802	1,337	163	0	0	0	6,754
35-39	1,958	2,397	2,325	1,481	261	0	0	8,422
40-44	2,764	2,113	2,059	2,589	2,614	233	0	12,372
45-49	1,580	1,633	1,563	1,839	3,964	2,201	87	12,867
50-54	1,090	1,055	910	939	1,787	2,180	991	8,952
55-59	785	816	722	743	1,074	1,101	1,054	6,295
60-64	481	569	473	507	526	524	550	3,630
65+	<u>218</u>	<u>230</u>	<u>204</u>	<u>168</u>	<u>141</u>	<u>138</u>	<u>188</u>	<u>1,287</u>
<b>Total</b>	<b><u>15,982</u></b>	<b><u>12,938</u></b>	<b><u>9,637</u></b>	<b><u>8,429</u></b>	<b><u>10,367</u></b>	<b><u>6,377</u></b>	<b><u>2,870</u></b>	<b><u>66,600</u></b>

Average age . . . . . 44.21  
Average service . . . . . 13.18

<u>Age</u>	<u>Females - Full Years of Service to December 31, 1993</u>							<u>Total</u>
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
less than 20	48	0	0	0	0	0	0	48
20-24	1,087	206	0	0	0	0	0	1,293
25-29	1,805	1,338	161	0	0	0	0	3,304
30-34	1,656	1,810	1,453	307	0	0	0	5,226
35-39	1,689	1,778	1,791	1,810	577	0	0	7,645
40-44	1,557	1,710	1,490	1,956	2,610	502	0	9,825
45-49	1,356	1,494	1,268	1,233	1,784	1,327	114	8,576
50-54	810	1,049	991	1,105	1,018	804	424	6,201
55-59	523	627	834	857	993	533	340	4,707
60-64	295	326	448	391	538	274	156	2,428
65+	<u>130</u>	<u>125</u>	<u>138</u>	<u>128</u>	<u>118</u>	<u>94</u>	<u>93</u>	<u>826</u>
<b>Total</b>	<b><u>10,956</u></b>	<b><u>10,463</u></b>	<b><u>8,574</u></b>	<b><u>7,787</u></b>	<b><u>7,638</u></b>	<b><u>3,534</u></b>	<b><u>1,127</u></b>	<b><u>50,079</u></b>

Average age . . . . . 43.56  
Average service . . . . . 12.61

**STATE EMPLOYEES' RETIREMENT SYSTEM**

**II. AGE AND BENEFIT PROFILE OF ANNUITANTS AND BENEFICIARIES DECEMBER 31, 1993**  
**SUPERANNUATION ANNUITANTS**

<u>Age</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>
50-54	336	10,380,665	8	101,878	344	10,482,543
55-59	796	20,093,676	120	2,225,189	916	22,318,865
60-64	2,785	48,813,727	1,816	19,158,207	4,601	67,971,934
65-69	6,132	72,329,055	4,410	34,745,852	10,542	107,074,907
70-74	6,438	60,119,409	5,197	32,704,047	11,635	92,823,456
75-79	4,941	34,053,635	4,296	22,334,498	9,237	56,388,133
80-84	3,402	21,969,752	3,151	16,306,335	6,553	38,276,087
85-89	1,470	8,989,520	1,433	7,106,654	2,903	16,096,173
90 & Over	509	3,319,885	584	2,804,237	1,093	6,124,123
<b>Total</b>	<b><u>26,809</u></b>	<b><u>280,069,324</u></b>	<b><u>21,015</u></b>	<b><u>137,486,897</u></b>	<b><u>47,824</u></b>	<b><u>417,556,221</u></b>

Average Age . . . . . 73.3  
Average Pension . . . . . 8,731

**EARLY RETIREMENT ANNUITANTS**

<u>Age</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>
30-34	35	32,562	127	123,859	162	156,421
35-39	248	301,651	716	830,529	964	1,132,179
40-44	853	1,227,787	1,637	2,114,022	2,490	3,341,809
45-49	1,950	16,073,054	1,239	2,340,243	3,189	18,413,297
50-54	1,858	19,713,738	1,049	4,982,786	2,907	24,696,524
55-59	1,795	20,419,342	1,399	10,535,600	3,194	30,954,942
60-64	2,225	26,755,169	1,608	12,547,351	3,833	39,302,520
65 & Over	2,409	19,354,147	2,497	14,010,946	4,906	33,365,093
<b>Total</b>	<b><u>11,373</u></b>	<b><u>103,877,450</u></b>	<b><u>10,272</u></b>	<b><u>47,485,336</u></b>	<b><u>21,645</u></b>	<b><u>151,362,786</u></b>

Average Age . . . . . 56.2  
Average Pension . . . . . 6,991

**STATE EMPLOYES' RETIREMENT SYSTEM**

**II. AGE AND BENEFIT PROFILE OF ANNUITANTS AND BENEFICIARIES DECEMBER 31, 1993**  
**DISABLED ANNUITANTS**

<u>Age</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>
30-34	14	96,704	22	156,291	36	252,995
35-39	56	404,170	83	571,578	139	975,748
40-44	131	988,783	175	1,191,664	306	2,180,447
45-49	280	2,191,430	198	1,460,461	478	3,651,891
50-54	302	2,483,504	237	1,633,531	539	4,117,035
55-59	331	2,595,244	301	2,221,443	632	4,816,687
60-64	388	2,906,391	341	2,073,664	729	4,980,055
65 & Over	<u>783</u>	<u>4,367,317</u>	<u>783</u>	<u>3,487,310</u>	<u>1,566</u>	<u>7,854,627</u>
Total	<u>2,285</u>	<u>16,033,543</u>	<u>2,140</u>	<u>12,795,942</u>	<u>4,425</u>	<u>28,829,485</u>

Average Age . . . . . 59.4  
Average Pension . . . . . 6,515

**BENEFICIARIES AND SURVIVOR ANNUITANTS**

<u>Age</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>
Under 25	2	8,121	3	15,404	5	23,525
25-29	4	65,499	6	25,162	10	90,661
30-34	9	51,151	8	42,722	17	93,873
35-39	16	64,566	18	113,353	34	177,919
40-44	21	137,817	26	67,085	47	204,902
45-49	24	68,776	54	212,212	78	280,988
50-54	26	67,032	110	644,530	136	711,562
55-59	26	87,527	214	1,160,088	240	1,247,615
60-64	36	173,171	350	2,294,053	386	2,467,224
65-69	50	255,242	766	4,007,367	816	4,262,609
70-74	61	259,621	1,149	5,189,379	1,210	5,448,991
75-79	88	345,995	1,387	5,202,170	1,475	5,548,165
80-84	41	137,740	1,248	4,844,472	1,289	4,982,212
85-89	20	86,796	693	2,678,976	713	2,765,772
90 & Over	<u>9</u>	<u>20,289</u>	<u>331</u>	<u>993,638</u>	<u>340</u>	<u>1,013,927</u>
Total	<u>433</u>	<u>1,829,343</u>	<u>6,363</u>	<u>27,490,602</u>	<u>6,796</u>	<u>29,319,945</u>

Average Age . . . . . 74.7  
Average Pension . . . . . 4,314



**STATE EMPLOYES' RETIREMENT SYSTEM**

**BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1993**  
**(as embodied in Act 31, approved March 1, 1974)**

The State Employees' Retirement System of Pennsylvania makes provision for retirement, disability, and death benefits for all State employes and certain other eligible groups. The major provisions may be summarized as follows:

**Eligibility Employes**

- Class A - All regular State employes as well as employes of certain Commissions and Authorities and all employes of state-owned educational institutions and the Pennsylvania State University (unless such employes have joined the Public School Employes' Retirement System of Pennsylvania or TIAA-CREF). All employes who become members (or who rejoin the Retirement System) on and after March 1, 1974 except Judges and District Justices.
- Class C - Liquor Law enforcement officers and other officers and certain employes of the Pennsylvania State Police who have been members and employes continuously since prior to March 1, 1974.
- Class D-3 - Members of the General Assembly who have been members and employes continuously since prior to March 1, 1974.
- Class E-1 - Judges.
- Class E-2 - District Justices.

**STATE EMPLOYES' RETIREMENT SYSTEM**

**BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1993**  
**(as embodied in Act 31, approved March 1, 1974)**

**Age and Service Requirements for Superannuation Retirement (full formula benefits)**

Class A - Age 60, with three years of service, except for members of the General Assembly, enforcement officers, correction officers, psychiatric security aides, and officers of the Delaware River Port Authority; for whom the requirement is age 50 with three years of service. Members of Class A with 35 or more years of credited service are entitled to full formula benefits regardless of age. State Police Officers can retire on full benefits after age 50 or with 20 years of service. Capitol Police and Park Rangers can retire on full benefits at age 50 with 20 years of Capitol Police or Park Ranger service.

Classes C and D-3 - Age 50.

Class E-1 - Age 60.

Class E-2 - Age 60.

**Formula for Superannuation Retirement Annuity**

The standard single-life annuity applicable to members of Class A and Class C is equal to 2 percent of the high 3-year average salary ("F.A.S.") of the member multiplied by the years and fractions of credited service.

The applicable single-life annuity for Class C State Police and Class A State Police is a minimum of 50 percent of highest annual salary if the member has over 20 but less than 25 years of service. With more than 25 years of service the benefit is a minimum of 75 percent of highest annual salary.

The annuity for other classes of members is obtained by multiplying the standard single-life annuity by a class multiplier as follows:

**STATE EMPLOYES' RETIREMENT SYSTEM**

**BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1993**  
**(as embodied in Act 31, approved March 1, 1974)**

<u>Class</u>	<u>Multiplier</u>	
D-3	3.75	
E-1	2.0	for each of the first 10 years of judicial service dropping to 1.5 for each subsequent year of judicial service.
E-2	1.5	for each year of judicial service.

**NOTE:** There are conditions under which long-service members or members retiring at advanced ages may receive somewhat larger benefits than those described above. Further, benefit limitations exist for most members of class D-3.

In addition to the standard single-life annuity as determined above, a member of Class C receives a "member's annuity" actuarially equivalent to the regular accumulated member contributions and interest at retirement but not less than such annuity determined as if the member was age 60 at retirement.

In addition to the above benefits, a member who has elected Social Security Integration Coverage is entitled to a single-life annuity of 2 percent of his "Average Non-Covered Salary" for each year of Social Security Integration (SSI) coverage. All Class E members can elect SSI coverage. Other members must have elected SSI coverage before March, 1974. "Average Non-Covered Salary" is the average annual salary received while covered by the Retirement System since January 1, 1956 in excess of the maximum covered wages under Social Security.

**Age and Service Requirements for Disability Retirement**

A member is eligible for disability retirement if the member is unable to perform his or her current job prior to superannuation retirement age and has at least 5 years of service. An officer of the State Police or Liquor Law enforcement officer does not have a service requirement.

**STATE EMPLOYEES' RETIREMENT SYSTEM**

**BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1993**  
**(as embodied in Act 31, approved March 1, 1974)**

**Formula for Disability Benefit**

The disability benefit is equal to the benefit calculated as for superannuation retirement, based on years of credited service at disability, if the result is greater than or equal to 33-1/3 percent of F.A.S. at time of disability. If the benefit so calculated is less than 33-1/3 percent of F.A.S., the disability benefit is equal to the smaller of:

- (a) the benefit calculated as for superannuation retirement based on service projected to superannuation date, or
- (b) 33-1/3 percent of F.A.S. at time of disability.

**Eligibility for Vested Benefit**

A member is eligible for a vested benefit after 10 years of service, except for members of Class D-3 who are eligible after 6 years of credited service.

**Vested Benefit**

The vested benefit is equal to the benefit calculated as for superannuation, based on years of credited service at the time of leaving the plan. The former member can receive the full benefit beginning at superannuation age, or an actuarially reduced early retirement benefit beginning at the date of separation.

**Eligibility for Death Benefit Prior to Retirement**

A member is eligible if the member has 10 years of credited service, except for a member of Class D-3 who is eligible after 6 years of credited service, or upon attainment of superannuation age with 3 years of credited service.

**Amount of Death Benefit Prior to Retirement**

An eligible beneficiary receives the full reserve value of the benefits to which the member would have been entitled had the member retired the day before he or she died, assuming the member had elected Option 1 if no other option had been elected.

## STATE EMPLOYES' RETIREMENT SYSTEM

### BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1993

(as embodied in Act 31, approved March 1, 1974)

#### Death Benefits After Retirement

A member may elect one of several optional reduced pensions in lieu of the single-life annuity provided by the formula. However, if the member elects the single-life annuity, there is a provision for a modified cash refund without actuarial reduction of the unpaid balance of the member accumulated contributions and interest at time of retirement.

#### Supplemental Allowances

Any superannuation or disability annuitant is entitled to a supplemental allowance sufficient to build the amount of the total single-life allowance, including any cost-of-living supplements, up to the rate of \$84.50 for each year of credited service. An annuitant who retired early is entitled to the supplemental allowance upon attaining superannuation age.

Supplemental annuities applying cost-of-living increases to the benefits of annuitants have been instituted from time to time. The most recent of these became effective as of January 1, 1989.

#### Rate of Member Contribution

- (i) Regular member contributions, excluding Social Security Integration contributions

Class A - 5.00% of total salary

For other classes of members, the class of service multiplier is applied to the 5% rate to produce the following:

Class C - 5.00%

Class D-3 - 18.75%

Class E-1 - 10.00% during the first 10 years of judicial service and 7.5% thereafter.

Class E-2 - 7.50%

**STATE EMPLOYES' RETIREMENT SYSTEM**

**BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1993**  
**(as embodied in Act 31, approved March 1, 1974)**

(ii) Additional contribution for Social Security Integration Credit

Any member who elects Social Security Integration Credit pays 5 percent of any salary in excess of the amount of salary covered by Social Security during the year for which contributions are being made. A member electing to end additional contributions is ineligible to make future contributions or accrue future benefits.

**Interest Credited on Member Contributions**

A rate of 4 percent stipulated as the statutory rate of interest, has been credited on the member contributions since the inception of the system.

**Refund of Accumulated Member Contributions**

On the death of a member not qualifying for death benefits, the accumulated member contributions are paid to the beneficiary; also, any member terminating service when not eligible for another form of benefit is paid a refund of the accumulated contributions and interest; any other terminating member may elect the refund of accumulated contributions and interest in lieu of a retirement allowance.

**Employer Contributions**

The employer pays the balance of the cost in excess of the members' contributions with payment schedules determined by law. The employer contribution is the employer share of the normal cost plus the amount needed to amortize the December 31, 1990 accrued and supplemental liabilities over a twenty-year period ending with June 30, 2011. Changes in cost after 1990 are typically amortized over new twenty-year periods beginning with the July first following the effective date of the change.

## STATE EMPLOYEES' RETIREMENT SYSTEM

### ACTUARIAL ASSUMPTIONS

Schedule M shows the actuarial assumptions used for the valuation. The assumptions were based on an evaluation of experience under SERS from 1986 through 1990. Schedule M contains an extract of the full set of rates used in the valuation. The full set of rates is in the evaluation report which can be obtained from SERS. The rates are the probabilities that an event will occur in the year after the valuation. For instance, the male superannuation rate of .200 at age 60 means that 200 of every 1,000 employees age 60 and eligible for full benefits are expected to retire before they reach age 61.

Interest Rate: Interest rate of 9.9 percent graded down to 6.0 percent as shown in Schedule M, compounded annually.

Superannuation and Early Retirement Allowances: The mortality table used for those receiving superannuation and early retirement allowances is the 1971 Group Annuity Mortality Table.

Disability Allowances: The mortality tables used for those receiving disability allowances are modifications of the Federal Civil Service Disability Mortality table.

### FOR ACTIVE GENERAL EMPLOYEES

<u>Early Retirement Rate*</u>			<u>Superannuation Retirement Rates</u>		
<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Age</u>	<u>Male</u>	<u>Female</u>
30	.020	.047	50-58	.150	.040
35	.022	.029	59	.150	.150
40	.016	.025	60	.200	.308
45	.015	.021	61	.220	.250
50	.016	.025	62	.600	.500
55	.022	.035	63	.300	.330
			64	.300	.330
			65	.600	.590
			66	.400	.410
			67	.300	.390
			68-79	.280	.280
			80	1.000	1.000

\* Early retirement rates only apply to members not eligible for superannuation retirement.

**STATE EMPLOYES' RETIREMENT SYSTEM**

**ACTUARIAL ASSUMPTIONS (Continued)**

**FOR ACTIVE GENERAL EMPLOYES**

**Rates of Separation Due to Withdrawal\***

<u>Age</u>	<u>Male</u>				<u>Age</u>	<u>Female</u>			
	<u>Years of Service</u>					<u>Years of Service</u>			
	<u>0</u>	<u>1</u>	<u>5</u>	<u>9+</u>		<u>0</u>	<u>1</u>	<u>5</u>	<u>9+</u>
20	.1720	.1200	.0500	.0048	20	.1902	.1014	.1176	.0098
25	.1720	.1200	.0546	.0048	25	.2114	.1820	.1176	.0098
30	.1293	.1069	.0536	.0048	30	.2117	.2023	.1150	.0098
35	.1293	.1069	.0536	.0048	30	.1780	.1461	.0897	.0078
40	.1095	.0642	.0376	.0037	40	.1503	.0979	.0682	.0061
45	.1035	.0796	.0293	.0034	45	.1279	.0882	.0611	.0051
50	.0979	.0511	.0217	.0032	50	.1550	.0870	.0545	.0060
55	.0856	.0430	.0190	.0030	55	.1289	.1130	.0511	.0056

**FOR ALL ACTIVE EMPLOYES**

<u>Age</u>	<u>Death</u>		<u>Age</u>	<u>Disability*</u>	
	<u>Male</u>	<u>Female</u>		<u>Male</u>	<u>Female</u>
25	.0006	.0005	25	.0004	.0005
30	.0008	.0005	30	.0008	.0014
35	.0008	.0007	35	.0016	.0023
40	.0013	.0011	40	.0024	.0031
45	.0022	.0012	45	.0044	.0049
50	.0036	.0022	50	.0062	.0073
55	.0059	.0037	55	.0081	.0093
60	.0090	.0042			

\* Separation due to withdrawal and disability retirement rates only apply to members not eligible for superannuation retirement.



**STATE EMPLOYES' RETIREMENT SYSTEM**

**ACTUARIAL ASSUMPTIONS (Continued)**

**FOR SPECIAL BENEFIT CLASSES**

Withdrawal

<u>Years of Service</u>	<u>Class C</u>	<u>Class D</u>	<u>Class E</u>
0	.074	.000	.050
1	.035	.030	.040
2-3	.027	.030	.030
4-6	.025	.030	.020
7-8	.009	.030	.010
9+	.001	.002	.002

Early Retirement

	<u>Class C</u>	<u>Class D</u>	<u>Class E</u>
Any Age	.0130	.0450	.0210

Superannuation

<u>Age</u>	<u>Class C Less Than 20 Years of Service</u>		<u>Class C 20 or More Years of Service</u>	
	<u>Class D</u>	<u>Class E</u>	<u>Service</u>	
50	.075	.060	N/A	20 .200
55	.130	.060	N/A	21 .080
60	.350	.100	.150	22 .080
65	.650	.130	.250	23 .040
70	.300	.130	.900	24 .040
75	.300	.130	.900	25 .200
80	1.000	1.000	1.000	26-30 .080

**STATE EMPLOYEES' RETIREMENT SYSTEM**

**ACTUARIAL ASSUMPTIONS (continued)**

**Career Salary Scale for Members in Classes A and C**

<u>Age</u>	<u>Hire Date Before July 1988</u>	<u>Hire Date After July 1988</u>
20	4.5%	4.5%
21	4.3	4.0
22	4.1	3.8
23	3.9	3.4
24	3.7	3.2
25	3.5	2.9
26	3.5	2.9
27	3.4	2.8
28	3.4	2.8
29	3.3	2.7
30	3.3	2.7
31	3.2	2.6
32	3.2	2.6
33	3.1	2.5
34	3.1	2.5
35	3.0	2.4
36	3.0	2.4
37	2.9	2.4
38	2.9	2.3
39	2.8	2.3
40	2.8	2.2
41	2.7	2.2
42	2.7	2.2
43	2.6	2.2
44	2.6	2.2
45 and Older	2.5	2.2

No salary scale is used for members in Classes D and E. These rates predict the career salary growth for individuals. In addition to career salary growth, it is assumed that salary rates will increase by 4 percent each year.

# STATE EMPLOYEES' RETIREMENT SYSTEM

## I. ASSET VALUATION METHOD

The actuarial value of assets is developed by recognizing the difference between the expected actuarial value of assets and the market value of assets over a five-year period. The expected actuarial value is last year's actuarial value brought forward to reflect actual contributions, benefit payments and expenses, and assumed investment income. Each year 20 percent of the difference between this expected value and the market value is recognized in determining the current actuarial value of assets with the remaining 80 percent to be recognized over the next four years.

The adjustments and the resulting actuarial assets are shown in Schedule I. The assets are further adjusted to account for the remaining employer contributions in fiscal year 1993/94 (through June 30, 1994). This adjustment is made because the 1993 valuation results will not be reflected in employer contributions until July 1, 1994. The assets are increased by employer contributions payable through June 30, 1994. This adjustment includes any employer contributions due and payable as of the valuation date. The assets are then reduced by the employer normal cost payable through June 30, 1994.

## II. FUNDING AND CONTRIBUTION POLICY

The Pennsylvania State Employees' Retirement System funding policy provides for periodic employer contributions at actuarially determined rates that will amortize the liabilities by June 30, 2014. This policy assures that the SERS is appropriately funded and also that the fund will accumulate sufficient assets to pay benefits when they are due. The policy is set by the State Employees' Retirement Board in conformance with specific legal requirements as to the method of funding.

A variation of the Entry-Age Actuarial Cost Method is used to determine the liabilities and costs related to all SERS benefits including superannuation, withdrawal, death and disability benefits. The significant difference between the method used for SERS and the typical Entry-Age Actuarial Cost Method is that the normal cost is based on the benefits and contributions for new employees rather than for all current employees from their date of entry. The SERS variation should produce approximately the same results as the typical method over the long run.

The annual contribution is equal to the sum of:

The employer share of the normal cost.

The amortization of the unfunded liabilities as of December 31, 1990 over a twenty-year period ending on June 30, 2011.

The amortization of changes in liability after 1990 over twenty-year periods typically beginning with the July first following the effective date of the change. Changes include actuarial gains and losses and plan amendments.

## STATE EMPLOYES' RETIREMENT SYSTEM

All of the amortization payments are based on a schedule of contributions that increase five percent a year. The employer cost is determined as a percent of payroll and the employer contributes that percent of the payroll of all covered members during each fiscal year. The employer cost is the total of (1) the employer normal cost percent and (2) the amortization payment for fiscal year 1994/95 divided by the projected payroll for the fiscal year.

The assumptions used in determining the actuarial cost are stated in Schedule M, and the employer cost, as a percent of payroll, is determined in Schedules A and B. The assumptions used for the current valuation were adopted after a review of the evaluation of experience under SERS from 1986 through 1990. The salary increases and investment returns are:

<u>Years</u>	<u>Salary Increases</u>			<u>Investment Return</u>
	<u>General</u>	<u>Average Career</u>	<u>Total</u>	
1994 to 2000	4.0%	2.5%	6.5%	9.9%
2001 to 2005	4.0	2.5	6.5	9.0
2006 to 2010	4.0	2.5	6.5	8.0
2011 to 2015	4.0	2.5	6.5	7.0
After 2015	4.0	2.5	6.5	6.0

All costs and liabilities have been determined in conformance with generally accepted actuarial principles and procedures in accordance with the principles of practice prescribed by the Actuarial Standards Board. The calculations were performed on the basis of actuarial assumptions and methods which are internally consistent and reasonable (taking into account past experience under the SERS and reasonable expectations) and which in combination represent the best estimate of anticipated experience under the plan.

### III. DISCLOSURE ASSUMPTIONS

The Projected Benefit Obligation (PBO) is the present value of accumulated plan benefits based on past service and projected salary. The PBO was calculated using the withdrawal, death and retirement assumptions set forth in Schedule M.

The career salary for the PBO growth was set equal to the salary growth shown in Schedule M including the assumptions that the salary rates would increase by 4 percent per year, compounded annually. The rate of interest was 9.25 percent per year, compounded annually. The rate of 9.25 percent is approximately equal to the assumed investment return rates averaged over the period during which past obligations to current employees and annuitants will be paid. The 1992 investment return rate was also 9.25 percent.

The result of the use of the above salary scales and interest rate is to determine a PBO that is the best estimate of the actual obligations of the fund using the procedures established by the Governmental Accounting Standards Board.

## STATE EMPLOYEES' RETIREMENT SYSTEM

The present value of accumulated plan benefits is the liability based on past service but without projection of a salary increase. This value was determined using the assumptions from Schedule M and an interest rate of 7.75 percent for this 1993 report. The interest rate used before 1993 was the Pension Benefit Guaranty Corporation rate for immediate annuities. That rate had been 5.75 percent for the 1992 report. This series had been commonly used for premium plans in the past but, for technical reasons, auditors and actuaries believe that the rate is no longer appropriate for the measure of accumulated benefit obligations. The measurement assumption was reviewed with the auditors this year and they agreed that a more representative assumption should be used. The 1993 report uses an assumption of 7.75 percent which is in the range of the latest (April 1993) rates for 30-Year Treasury Bonds (7.27 percent) and Aaa Seasoned Issue Corporate Bonds as reported by Moody's Investment Service (7.88 percent).

Both disclosure values were determined using the demographic assumptions based on the 1986 to 1990 evaluation of experience.

## STATE EMPLOYEES' RETIREMENT SYSTEM

### DEFINITIONS OF TECHNICAL TERMS

Accrued Service. Service credited under the system which was rendered before the date of the actuarial valuation.

Actuarial Accrued Liability. The portion of the actuarial present value of benefits which is not provided for by the actuarial present value of future normal costs. Also referred to as Past Service Liability.

Actuarial Assumptions. Estimates of future experience with respect to rates of mortality, disability, turnover, retirement, investment income and salary growth. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the actuarial present value of future benefits between future normal costs and the actuarial accrued liability.

Actuarial Present Value. The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting projected future payments at assumed rates of interest and probabilities of payment.

Amortization. Paying off an amount with periodic payments of interest and principle -- as opposed to paying off with a lump sum payment.

Normal Cost. The portion of the actuarial present value of future benefits that is allocated to the current year by the actuarial cost method.

Projected Benefit Obligation. The present value of pension benefits estimated to be payable in the future as a result of employe service to the date of the valuation. The projection includes expected increases in salary.

Unfunded Actuarial Accrued Liabilities. The difference between actuarial accrued liabilities and valuation assets.