

STATE EMPLOYEES' RETIREMENT SYSTEM

1984 ACTUARIAL REPORT

**HAY/HUGGINS COMPANY, INC.**229 SOUTH 18TH STREET • PHILADELPHIA, PA 19103  
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MEMBER OF THE HAY GROUP, INC.

**Actuarial & Benefits Consultants**

May 10, 1985

Mr. John Brosius, Secretary  
State Employees' Retirement System  
204 Labor & Industry Building  
Harrisburg, PA 17120

Dear Mr. Brosius:

This report presents the results of our actuarial valuation of the State Employees' Retirement System as of December 31, 1984. 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.

Purpose

The main purposes of this report are:

- . to indicate the pension contribution rates which will be the basis for the Fiscal Year 1985-86 appropriation request;
- . to disclose the financial condition of the Plan;
- . to provide information relating to the disclosure and reporting requirements of Statement No. 35 of the Financial Accounting Standards Board; and,
- . to summarize the required transfers among the various accounts in order to bring them into actuarial balance.

Certification

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 Plan and reasonable expectations) and which in combination represent our best estimate of anticipated experience under the plan.

Respectfully submitted,

HAY/HUGGINS COMPANY, INC.

By 

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STATE EMPLOYES' RETIREMENT SYSTEM

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STATE EMPLOYES' RETIREMENT SYSTEM

VALUATION HIGHLIGHTS

	<u>December 31, 1984</u> Valuation	<u>December 31, 1983</u> Valuation
. Summary of Contributions: (Percent of Participants' Compensation)		
Normal Cost .....	6.42%	6.84%
Amortization of Unfunded Actuarial Accrued Liability ...	9.92%	8.58%
Amortization of Supplemental Annuities .....	1.69%	1.15%
Total .....	<u>18.03%</u>	<u>16.57%</u>
Contribution Rate for:		
Class A Members: Age 60 Superannuation .....	17.61%	16.57%
Class A Members: Age 50 Superannuation .....	21.85%	16.57%
Class C Members .....	21.85%	16.57%
Class D Members .....	74.42%	60.22%
Class E Members .....	25.32%	25.24%
Contribution Rate for Special Class C Benefits:		
State Police .....	6.32%	6.59%
Enforcement Officers .....	0.00%	0.46%
. Market Value of Assets .....	\$4,921,841,789	\$4,411,359,238
. Actuarial Present Value of Accumulated Plan Benefits:		
Vested benefits .....	\$4,549,746,418	\$4,283,514,387
Non-vested benefits .....	94,878,301	103,200,163
Total .....	<u>\$4,644,624,719</u>	<u>\$4,386,714,550</u>
. Active Participants:		
Number .....	113,831	115,587
Average Projected compensation. \$	21,644	\$ 20,640
Total Projected compensation ..	\$2,463,711,799	\$2,385,683,968
. Annuitants and Beneficiaries:		
Number .....	60,964	58,542
Total annual pension .....	\$ 297,990,372	\$ 260,966,675
. Inactive Vested Participants:		
Number .....	2,726	2,446

STATE EMPLOYES' RETIREMENT SYSTEM

General Discussion

The costs and liabilities presented in this report have been determined on the basis of the same set of actuarial assumptions as used in the December 31, 1983 valuation. These assumptions are those approved by the Board in 1981 with modifications to the salary growth assumption and asset valuation method in 1982.

There were changes in the benefit and contribution provisions, and method of determining the contribution rates, since the 1983 valuation which are reflected in the current valuation. These changes include:

- . The determination of a distinct employer contribution rate for members who are eligible for Age 50 Superannuation retirement.
- . An Early Retirement Window during the period July 1, 1985 to June 30, 1986. During this time, members who meet certain eligibility requirements can retire with increased early retirement benefits.
- . The increase in Supplemental Annuity Allowances for annuitants as of July 1, 1984.
- . The change in the method of determining the interest adjustment on the employer contribution rate payable quarterly.

COMMENTS ON SCHEDULES

Contribution Rate

Schedules A and B summarize the development of the Employer Contribution Rate before allocation by group. The Employer Contribution Rate comprises three pieces: the Normal Cost; the amortization of the Unfunded Actuarial Accrued Liability; and, the amortization of the Supplemental Annuities.

The Employer Contribution Rate calculated as a result of the December 31, 1984 actuarial valuation is 18.03%. The 1983 valuation had produced an Employer Contribution Rate of 16.57% if all members contributed 6.25%. This was later increased to 18.09% when certain member contribution rates were decreased to 5.00% and Supplemental Annuity Allowances were granted as of July 1, 1984. The December 31, 1984 rate of 18.03% includes these changes as well as the cost of the Early Retirement Window and the change in the interest charged for delayed contributions. The results of these valuations are summarized below:

	1984 Valuation	1983 Valuation	1984/85 Contribution Rate
Normal Cost Rate .....	6.42%	6.84%	6.85%
Unfunded Actuarial Accrued Liability Rate	9.92	8.58	9.43
Supplemental Annuities Rate .....	<u>1.69</u>	<u>1.15</u>	<u>1.81</u>
TOTAL .....	18.03%	16.57%	18.09%

The normal cost rate is the level percentage of compensation which would be required for new active members to fund the liability for any prospective benefit payable to them over their period of active service. In making this calculation we used data for all active members who had not yet completed one year of credited service.

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The unfunded actuarial accrued liability of \$3,373,017,900 is composed of two parts: one part is to be funded over 30 years from July 1, 1969 and the other part over 30 years from July 1, 1974. To the extent the unfunded actuarial accrued liability increases (decreases) due to changes in assumptions or due to gains or losses because actual experience differs from the actuarial assumptions, those increases (decreases) are prorated between the two parts based on the expected outstanding balances.

The accrued liability for supplemental allowances is composed of four parts to be funded in level payments over 20 years from July 1, 1969; July 1, 1974; July 1, 1979; and July 1, 1984.

Schedule C contains a detailed analysis of the change in the Employer Contribution Rate and Unfunded Actuarial Accrued Liability from the 1983 to the 1984 valuation. The significant items of change were due to excess investment earnings, excess salary growth, the projected costs of the Early Retirement Window, the increase in the Supplemental Annuity Allowances, and changing the interest charged for delayed contributions.

### Contribution Rates for Additional Annuities for State Police and Enforcement Officers

Schedule D summarizes the development of the additional contributions required to support the additional annuities of State Police and Enforcement Officers. This additional annuity is equal to the member's accumulated deductions converted to a monthly benefit, using SERS actuarial equivalent factors.

The contribution rate developed as a result of the 1984 actuarial valuation applicable to the 1985-86 fiscal year is 6.32% of the Class C State Police payroll compared to the 6.59% in 1984. The cost of the Enforcement Officers additional annuity is fully funded by current funds so there is no need for an additional contribution. The contribution rate last year was 0.46%.

### Special Member Contribution Rates

Special contribution adjustments are developed for Class D and E members to adjust the Employer Contribution Rates made on their behalf to reflect the higher level of benefits to which they are entitled. This adjustment is made on an approximate basis since an exact accounting is not possible. The development of these rate adjustments is summarized in Schedule E.

### Development of Employer Contribution Rates by Group

Schedule F develops the contribution rate for certain members who are entitled to additional benefits. This contribution pays for the additional cost of full benefits payable at age 50 and the higher multiplier paid to Class D and Class E employees. The full age 50 benefit is available to all Class C and Class D members and some Class A members.

The contribution rates are determined by adding the cost of the age 50 benefit for the groups who can receive the benefit and multiplying the total cost by the increased multiple, where appropriate.

STATE EMPLOYES' RETIREMENT SYSTEM

By increasing the contribution for the groups with additional benefits, the employer contribution for members with basic benefits can be reduced. The effect of the adjustments is to produce an aggregate contribution equal to the required 18.03% of the total payroll. The employer contribution by group is:

Class A with age 60 benefit	17.61%
Class A with age 50 benefit and Class C	21.85%
Class D	74.42%
Class E	25.32%

Contribution For Air and Army National Guard

A special contribution is developed for members of the Air and Army National Guard on Schedule G. It consists of the Employer Contribution Rate plus a contribution sufficient to amortize the deficiency in the Air and Army National Guard Account over 20 years from July 1, 1980.

Actuarial Balance Sheet

Schedule H contains an actuarial balance sheet. It illustrates that the excess of actuarial present value of plan benefits (Total Liabilities) over the present assets is fully funded by future contributions. These future contributions consist of Normal Cost payments, amounts to fund the Unfunded Actuarial Accrued Liability and Supplemental Annuities, special contributions for State Police and Enforcement Officers and Member Contributions.

Reserve Transfers to Adjust Account Balances

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. Due to increases in the supplemental annuity payments to annuitants as of July 1, 1984, transfers are also required this year from the Supplemental Annuity Account to the Annuity Reserve Account, the State Police Benefit Account and the Enforcement Officer Benefit Account.

These transfers have been reflected in the account balances shown in Schedule H.

Schedule I shows the details of the required account transfers.

Funding Status

Schedule J provides information required under Statement No. 35 of the Financial Accounting Standards Board (FASB). This schedule provides information regarding the funding status of vested and non-vested accumulated plan benefits as of the current valuation date.



## STATE EMPLOYEES' RETIREMENT SYSTEM

### Plan Assets

Schedule K summarizes the development of the actuarial value of assets as of December 31, 1984. The assets are based on the unaudited financial statements prepared by SERS.

The asset valuation method, which reflects market values, smooths out year-to-year fluctuations. The specific approach gradually recognizes over a 5 year period the differences between total investment returns and the assumed rate of 5-1/2%. This smoothing method recognized 20% of the asset gain of \$129,746,917 this year, with the remainder to be recognized over the next four years.

A detailed description of the asset valuation method is contained in Schedule M.

### Participant Data

Section I of Schedule L provides a distribution of the active participants as of December 31, 1984 by sex, age, and length of service. It also shows the average projected salary by age group and sex. Section II of the schedule includes a breakdown of 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 was submitted by SERS.

### Plan Provisions

Schedule M contains a summary of the principal provisions of the plan in effect as of December 31, 1984. There have been changes in the provisions since the prior valuation; namely the 1.25% increase in the member contribution rate for only those who became members after July 22, 1983, the increases in the Supplemental Annuity Allowances as of July 1, 1984, and the introduction of an Early Retirement Window (July 1, 1985 to June 30, 1986) providing increases in the early retirement allowances.

### Actuarial Assumptions and Methods

Schedule N summarizes the actuarial assumptions, the asset valuation method and cost methods used for the valuation. There were no changes made in the actuarial assumptions and methods used for contribution determination since the prior valuation. The interest rate used in the determination of the Present Value of Accumulated Plan Benefits was changed from 9.0% in 1983 to 9.5% in 1984 to reflect the market cost of annuities.



STATE EMPLOYES' RETIREMENT SYSTEM

I. UNFUNDED ACTUARIAL ACCRUED LIABILITY DECEMBER 31, 1984

1) Present Value of Benefits:

(a) Active and Inactive Participants	
Superannuation and Withdrawal .....	\$ 7,067,910,415
Disability .....	566,097,996
Death .....	925,974,810
Refunds .....	86,271,665
Special Police Benefits .....	87,923,559
(b) Annuitants and Beneficiaries .....	2,895,928,874
(d) Total .....	\$11,630,107,319

2) Present Value of Member and Employer Contributions:

(a) Normal Cost (Employer portion only) .....	\$ 1,604,631,279
(b) Supplemental Annuity Amortization .....	427,180,597
(c) Member Contributions .....	1,458,452,174
(d) Special Police and Enforcement Officer Contributions .....	65,817,189
(e) Total .....	\$ 3,556,081,239

3) Actuarial Accrued Liability: (1) - (2) ..... \$ 8,074,026,080

4) Actuarial Value of Assets ..... \$ 4,701,008,180

5) Unfunded Actuarial Accrued Liability: (3) - (4) ..... \$ 3,373,017,900

II. AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY

<u>Funding Period</u> 30 Years from July 1	<u>Amount of</u> <u>Liability</u>	<u>Annual Payment to Fund</u>	
		<u>Amount</u>	<u>Percent*</u>
1969	\$2,350,334,986	\$178,238,713	7.23%
1974	<u>1,022,682,914</u>	<u>59,684,616</u>	<u>2.42</u>
	\$3,373,017,900	\$237,923,329	9.65%

\*Payment for 1985 expressed as a percentage of the estimated total payroll for active members in 1985 of \$2,463,711,799. The estimate was obtained by multiplying the 1984 salary for each active employee by the salary growth assumption for one year.

STATE EMPLOYES' RETIREMENT SYSTEM

I. DEVELOPMENT OF EMPLOYER NORMAL COST RATE  
(Fiscal Year 1985-86)

1) Normal Cost Rate for new active members to fund:	
(a) Superannuation and Withdrawal .....	9.12%
(b) Disability .....	.96
(c) Death .....	1.11
(d) Refunds .....	<u>1.31</u>
(e) Total .....	12.50%
2) Member Deductions .....	6.25%
3) Employer Normal Cost (1)(e) - (2) .....	6.25%

II. AMORTIZATION OF SUPPLEMENTAL ANNUITIES

<u>Funding Period:</u> <u>20 Years from July 1</u>	<u>Amount of</u> <u>Liability</u>	<u>Annual Payment to Fund</u>	
		<u>Amount</u>	<u>Percent*</u>
1969	\$ 2,521,439	\$ 614,754	.03%
1974	54,544,172	7,136,132	.29
1979	186,604,830	18,023,601	.73
1984	<u>183,510,156</u>	<u>14,767,218</u>	<u>.60</u>
	\$427,180,597	\$40,541,705	1.65%

\*Payment for 1985 expressed as a percentage of the estimated total payroll for active members in 1985 of \$2,463,711,799. The estimate was obtained by multiplying the 1984 salary for each active employee by the salary growth assumption for one year.

III. DEVELOPMENT OF TOTAL EMPLOYER CONTRIBUTION RATE  
(Fiscal Year 1985-86)

	<u>Payable</u> <u>January 1</u>	<u>Payable</u> <u>Quarterly*</u>
1) Employer Normal Cost	6.25%	6.42%
2) Payment on Unfunded Actuarial Accrued Liability	9.65	9.92
3) Payment on Supplemental Annuities	<u>1.65</u>	<u>1.69</u>
4) Total	<u>17.55%</u>	<u>18.03%</u>

\*Equals the contribution payable January 1 plus 2.75% interest.

STATE EMPLOYES' RETIREMENT SYSTEM

I. ANALYSIS OF CHANGE IN EMPLOYER CONTRIBUTION RATE

	<u>Normal Cost</u>	<u>Accrued Liability</u>	<u>Supplemental Annuities</u>	<u>Total</u>
1. December 31, 1983 Valuation .....	6.84%	8.58%	1.15%	16.57%
2. Changes during 1984:				
a) Increase due to reduction of member contribution rate to 5.0% ..	.01	.85	---	.86
b) Increase in Supplemental Annuity Allowances .....	---	---	.66	.66
c) Total after 1983 changes.....	6.85%	9.43%	1.81%	18.09%
3. Changes - 12/31/84 Valuation:				
a) Difference in economic assumptions				
. Excess investment earnings .....	---	(.17)	---	(.17)
. Excess salary growth .....	---	.36	---	.36
b) Total payroll growth .....	---	.07	(.06)	.01
c) Projected cost of Early Retirement Window .....	---	.07	---	.07
d) Change in New Entrant demographics .	(.26)	.20	---	(.06)
e) Change in interest charge .....	(.17)	(.26)	(.05)	(.48)
f) Other changes .....	---	.22	(.01)	.21
g) Total change .....	(.43)	.49	(.12)	(.06)
4. December 31, 1984 Valuation:				
(2c) + (3g) .....	6.42%	9.92%	1.69%	18.03%

II. ANALYSIS OF CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY

1. December 31, 1983 Unfunded Actuarial Accrued Liability .....	\$ 2,905,259,675
2. Increase in liability due to reduction of member contribution rate to 5.0% .....	288,582,187
3. Expected amortization payment .....	213,275,178
4. Expected liability as of December 31, 1984 [((1) + (2) - (3)) x 1.055] .....	3,144,497,852
5. Change in liability due to	
a) Difference in economic assumptions	
. Excess investment earnings .....	(56,993,948)
. Excess salary growth .....	119,396,478
b) Projected cost of Early Retirement Window .....	23,174,934
c) Change in New Entrant demographics .....	61,617,841
d) Other changes .....	81,324,743
e) Total change .....	228,520,048
6. December 31, 1984 Unfunded Actuarial Accrued Liability:	
(4) + (5e) .....	\$ 3,373,017,900

STATE EMPLOYES' RETIREMENT SYSTEM

I. DEVELOPMENT OF CONTRIBUTION RATES FOR ADDITIONAL ANNUITY FOR  
STATE POLICE AND ENFORCEMENT OFFICERS

(Fiscal Year 1985-86)

	<u>State Police</u>	<u>Enforcement Officers</u>
1) Balance in Benefit Account as of December 31, 1984 .....	\$ 190,895,235	\$16,783,506
2) Transfer from Supplemental Annuity Account to fund annuitant benefit increases .....	9,962,265	576,568
3) Balance in Benefit Account after transfer: (1) + (2) .....	200,857,500	17,360,074
4) Present Value of Benefits for Annuitants and Beneficiaries .....	182,167,189	13,195,510
5) Assets available for additional annuities for Active Members: (3) - (4) .....	18,690,311	4,164,564
6) Present Value of additional annuities for Active Members .....	84,507,500	3,416,059
7) Present Value of Future Contribution to fund additional annuities: (6) - (5) .....	65,817,189	0
8) Present Value of Future Compensation for eligible Active Members .....	1,041,172,069	35,742,469
9) Contribution Rate as a percentage of payroll: (7) / (8) .....	<u>6.32%</u>	<u>0.00%</u>

STATE EMPLOYEES' RETIREMENT SYSTEM

DEVELOPMENT OF CONTRIBUTION RATE ADJUSTMENTS  
(Fiscal Year 1985-86)

I.	<u>Additional Contribution Rate For Age 50 Superannuation</u>		4.24%
II.	<u>Additional Contribution Rate due to Benefit Multiplier for Class D and Class E Members</u>		
		<u>Class D</u>	<u>Class E</u>
1)	Average Percentage of Compensation Contributed by Members of Class in 1984	17.659%	7.452%
2)	Average Percentage of Compensation Contributed by All Members in 1984	5.184	5.184
3)	Multiplier Adjustment (Ratio of Average Employer to Member Contributions): (1)/(2)	3.406	1.438

STATE EMPLOYEES' RETIREMENT SYSTEM

Development of Employer Contribution Rates by Group

	<u>Class A (Age 60 Super- annuation)</u>	<u>Class A (Age 50 Super- annuation) and Class C</u>	<u>Class D</u>	<u>Class E</u>	<u>Total</u>
1. Basic Contribution Rate	17.61%	17.61%	17.61%	17.61%	N/A
2. Additional Contribution Rate for Age 50 Superannuation	-	4.24%	4.24%	-	N/A
3. Service Multiplier Adjustment for Class D and Class E	1.0	1.0	3.406	1.438	N/A
4. Adjusted Contribution Rates: [(1) + (2)] *(3)	17.61%	21.85%	74.42%	25.32%	18.03%
5. Projected 1985 Payroll	\$ 2,258,253,080	\$ 187,659,460	\$ 1,833,290	\$ 15,965,969	\$ 2,463,711,799
6. Employer Contribution Amount	\$ 397,796,728	\$ 41,003,592	\$ 1,364,334	\$ 4,042,583	\$ 444,207,237

The basic contribution rate is determined algebraically such that the sum of the adjusted contribution rate for each class times the payroll for each class equals the product of the total contribution rate and total payroll. The Class A (Age 60 Superannuation) contribution was adjusted so that the employer contribution amounts totalled \$444,207,237.

STATE EMPLOYES' RETIREMENT SYSTEM

DEVELOPMENT OF CONTRIBUTION RATE AND ACCOUNT BALANCE

FOR AIR AND ARMY NATIONAL GUARD ACCOUNT  
(Fiscal Year 1985-86)

1. Estimated Account Balance @ July 1, 1985 .....	\$5,260,577
2. Contribution Required to Amortize (1) over 20 years from July 1, 1980 .....	510,064
3. Estimated Fiscal year 1985-86 payroll for Air and Army National Guard Members .....	4,100,000
4. Employer Contribution Rate .....	17.61%
5. Total Required Contribution: (2) + (3) x (4) .....	1,232,074
6. Total Required Contribution as percent of payroll (5)/(3) .....	30.05%



STATE EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL BALANCE SHEET

A S S E T S

Present Assets:

Members' Savings Account .....	\$ 1,243,588,362
Annuity Reserve Account .....	2,700,566,175
State Police Benefit Account .....	200,857,500
Enforcement Officers Benefit Account....	17,360,074
State Accumulation Account .....	1,186,650,275
Supplemental Annuity Account .....	(427,180,597)
Total Present Assets (Market Value).....	\$ 4,921,841,789

Adjustment to smooth market fluctuations (220,833,609)	
Total Present Assets (Actuarial Value) \$	<u>4,701,008,180</u>

Present Value of Future Contributions

Members' Savings Account (Employee) ...	\$ 1,458,452,174
Normal Cost Contributions (Employer)...	1,604,631,279
Accrued Liability Amortization (Employer) .....	3,373,017,900
Supplemental Annuity Amortization (Employer) .....	427,180,597
Special State Police Contributions (Employer) .....	65,817,189
Special Enforcement Officer Contributions (Employer) .....	0

Total Future Contributions .....	<u>\$ 6,929,099,139</u>
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TOTAL ASSETS .....	<u>\$11,630,107,319</u>
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L I A B I L I T I E S

Present Value of Benefits Payable to Annuitants and Beneficiaries from:

Annuity Reserve Account .....	\$ 2,700,566,175
State Police Benefit Account .....	182,167,189
Enforcement Officers Benefit Account .....	13,195,510
Total for Annuitants and Beneficiaries ....	\$ 2,895,928,874

Present Value of Benefits to Active and Inactive Members from:

Member Savings Account and State Accumulation Account

Superannuation and Withdrawal .....	\$7,067,910,415
Disability .....	566,097,996
Death .....	925,974,810
Refunds .....	86,271,665
Total .....	\$ 8,646,254,886
State Police Benefit Account .....	84,507,500
Enforcement Officers Benefit Account .....	3,416,059
Total for Active Members .....	<u>\$ 8,734,178,445</u>

TOTAL LIABILITIES .....	<u>\$11,630,107,319</u>
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STATE EMPLOYES' RETIREMENT SYSTEM

SUMMARY OF TRANSFERS WITHIN SERS ACCOUNTS

1. Annuity Reserve Account	
Balance as reported by SERS .....	\$ 2,492,156,233
Transfer from Supplemental Annuity Account .....	172,971,323
Transfer from State Accumulation Account .....	35,438,619
December 31, 1984 balance after transfers .....	<u>\$ 2,700,566,175</u>
2. Supplemental Annuity Account	
Balance as reported by SERS .....	\$ (243,670,441)
Transfer to Annuity Reserve Account .....	(172,971,323)
Transfer to State Police Benefit Account .....	(9,962,265)
Transfer to Enforcement Officers Benefit Account ....	(576,568)
December 31, 1984 balance after transfers .....	<u>\$ (427,180,597)</u>
3. State Accumulation Account	
Balance as reported by SERS .....	\$ 1,222,088,894
Transfer to Annuity Reserve Account .....	(35,438,619)
December 31, 1984 balance after transfers .....	<u>\$ 1,186,650,275</u>
4. State Police Benefit Account	
Balance as reported by SERS .....	\$ 190,895,235
Transfer from Supplemental Annuity Account .....	9,962,265
December 31, 1984 balance after transfers .....	<u>\$ 200,857,500</u>
5. Enforcement Officers Benefit Account	
Balance as reported by SERS .....	\$ 16,783,506
Transfer from Supplemental Annuity Account .....	576,568
December 31, 1984 balance after transfers .....	<u>\$ 17,360,074</u>

STATE EMPLOYEES' RETIREMENT SYSTEM

I. FUNDING STATUS OF ACCUMULATED PLAN BENEFITS DECEMBER 31, 1984

1. Actuarial present value of accumulated plan benefits:		
(a) Vested		
Active participants (66,488) .....	\$2,300,447,275	
Inactive (2,726) .....	28,299,425	
Superannuation Retirements (41,863) .....	1,697,282,611	
Early Retirements (10,866) .....	321,140,419	
Disabled (3,388) .....	104,290,989	
Beneficiaries (4,847) .....	98,285,699	
Total (130,178) .....	<u>\$4,549,746,418</u>	
(b) Non-vested (47,343) .....	<u>94,878,301</u>	
(c) Total: (a) + (b) .....	\$4,644,624,719	
2. Market value of assets .....	4,921,841,789	
3. Ratio of Market value of assets to actuarial present value of accumulated plan benefits		
	1984	1983
	<u>Valuation</u>	<u>Valuation</u>
(a) Vested benefits: .....	108.2%	103.0%
(b) Accumulated benefits: .....	106.0%	100.6%

II. CHANGE IN ACTUARIAL PRESENT VALUE OF ACCUMULATED PLAN BENEFITS\*

1. Actuarial present value of accumulated plan benefits as of December 31, 1983 .....	\$4,386,714,550
2. Changes during the year:	
(a) Due to passage of time .....	\$ 329,902,655
(b) Due to plan provision changes .....	
(July 1, 1984 Supplemental Annuity Allowances).....	143,388,081
(c) Due to actuarial assumption changes .....	<u>(215,380,567)</u>
(d) Total .....	\$ 257,910,169
3. Actuarial present value of accumulated plan benefits as of December 31, 1984: (1) + (2) .....	<u><u>\$4,644,624,719</u></u>

\* The assumed rate of return on investments is 9.5% in 1984 as compared to 9.0% in 1983. The assumptions relating to disability, termination and retirement were not changed.

STATE EMPLOYES' RETIREMENT SYSTEM

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

I. Change to 12/31/83 Actuarial Value due to Audit Adjustment:

1) Expected Actuarial Value as of 12/31/83 .....	\$ 4,223,708,663
2) Market Value as of 12/31/83 (including post audit adjustment) .....	4,402,833,868
3) Difference between Expected Actuarial Value and Market Value as of 12/31/82: .....	(119,511,895)
4) 80% of difference in (3) .....	(95,609,516)
5) Difference between Expected Actuarial Value and Market Value as of 12/31/83: (2) - (1) - (4) .	274,734,721
6) 20% of 12/31/82 Difference: .20 x (3) .....	(23,902,379)
7) 20% of 12/31/83 Difference: .20 x (5) .....	54,946,944
8) Adjusted Actuarial Value as of 12/31/83: (1) + (6) + (7) .....	\$ 4,254,753,228

II. Development of 12/31/84 Expected Actuarial Value:

1) Actuarial Value as of 12/31/83 .....	\$ 4,256,458,302
2) Change due to Audit Adjustment .....	1,705,074
3) Adjusted Actuarial Value as of 12/31/83: (1) - (2) .....	4,254,753,228
4) Contributions in 1984 .....	561,764,508
5) Benefits and Expenses in 1984 .....	410,670,030
6) Interest @ 5.5% to 12/31/84 on (3) .....	234,011,428
7) Interest @ 5.5% to 12/31/84 on (4) - (5) .....	4,155,098
8) Expected Actuarial Value as of 12/31/84: (3) + (4) - (5) + (6) + (7) .....	\$ 4,644,014,232

III. Development of Amount of Difference to Be Amortized:

1) Unrecognized Amount of 12/31/82 Difference: .6 x I(3) .....	\$ (71,707,137)
2) Unrecognized Amount of 12/31/83 Difference: .8 x I (5) .....	219,787,777
3) Market Value as of 12/31/84 .....	4,921,841,789
4) Difference between Expected Actuarial and Market Value as of 12/31/84: (3) - (2) - (1) - II(8)..	\$ 129,746,917

IV. Development of Actuarial Value of Assets as of 12/31/84:

1) 20% of 12/31/82 Difference: .2 x I(3) .....	\$ (23,902,379)
2) 20% of 12/31/83 Difference: .2 x I(5) .....	54,946,944
3) 20% of 12/31/84 Difference: .2 x III(4) .....	25,949,383
4) Actuarial Value at 12/31/84: II(8) + (1) + (2) + (3) .....	<u>\$ 4,701,008,180</u>

STATE EMPLOYES' RETIREMENT SYSTEM

I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1984

GENERAL EMPLOYEES

Age	Males - Full Years of Service to December 31, 1984							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
Under 20	27	-	-	-	-	-	-	27	\$13,865
20-24	1,054	236	-	-	-	-	-	1,290	15,429
25-29	2,170	1,784	228	-	-	-	-	4,182	17,890
30-34	1,884	2,863	2,451	268	-	-	-	7,466	20,469
35-39	1,403	2,317	4,004	2,205	112	-	-	10,041	23,119
40-44	894	1,151	1,966	2,304	1,072	63	-	7,450	24,776
45-49	692	820	1,329	1,552	1,276	687	61	6,417	25,706
50-54	545	812	1,282	1,386	1,145	969	536	6,675	25,740
55-59	563	781	1,333	1,377	1,103	907	806	6,870	25,022
60-64	321	570	928	1,015	716	457	562	4,569	24,531
65 & over	91	155	266	257	152	79	102	1,102	25,221
<b>Total</b>	<b>9,644</b>	<b>11,489</b>	<b>13,787</b>	<b>10,364</b>	<b>5,576</b>	<b>3,162</b>	<b>2,067</b>	<b>56,089</b>	<b>\$23,413</b>

Average age ..... 43.9  
Average service ..... 12.8

Age	Females - Full Years of Service to December 31, 1984							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
Under 20	83	-	-	-	-	-	-	83	\$12,391
20-24	1,766	648	-	-	-	-	-	2,414	14,748
25-29	2,192	2,657	664	-	-	-	-	5,513	16,846
30-34	1,768	2,568	3,386	701	-	-	-	8,423	18,273
35-39	1,430	1,735	2,249	1,843	200	-	-	7,457	19,124
40-44	1,070	1,370	1,288	1,090	598	86	-	5,502	19,230
45-49	746	1,341	1,261	894	516	352	39	5,149	19,311
50-54	633	1,013	1,322	1,225	518	316	228	5,255	19,136
55-59	485	856	1,363	1,350	656	382	330	5,422	19,132
60-64	180	427	905	929	420	275	193	3,329	18,905
65 & over	49	89	224	218	124	68	95	867	19,135
<b>Total</b>	<b>10,402</b>	<b>12,704</b>	<b>12,662</b>	<b>8,250</b>	<b>3,032</b>	<b>1,479</b>	<b>885</b>	<b>49,414</b>	<b>\$18,518</b>

Average age ..... 41.9  
Average service ..... 10.9

STATE EMPLOYES' RETIREMENT SYSTEM

I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1984

STATE POLICE, CORRECTION OFFICERS,  
ENFORCEMENT OFFICERS, AND PSYCHIATRIC SECURITY AIDES

Age	Males - Full Years of Service to December 31, 1984							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
Under 20	-	-	-	-	-	-	-	-	\$ -
20-24	156	1	-	-	-	-	-	157	17,168
25-29	517	213	3	-	-	-	-	733	21,003
30-34	251	385	140	4	-	-	-	780	24,256
35-39	202	188	722	600	14	-	-	1,726	27,286
40-44	124	91	213	813	309	32	-	1,582	28,061
45-49	73	57	51	153	266	231	14	845	28,293
50-54	30	45	51	41	77	142	143	529	28,853
55-59	16	20	24	25	70	76	167	398	28,659
60-64	2	12	7	13	22	34	53	143	28,657
65 & over	0	2	2	1	5	3	5	18	24,722
<b>Total</b>	<u>1,371</u>	<u>1,014</u>	<u>1,213</u>	<u>1,650</u>	<u>763</u>	<u>518</u>	<u>382</u>	<u>6,911</u>	<u>\$26,569</u>

Average age ..... 40.3  
Average service ..... 13.9

Age	Females - Full Years of Service to December 31, 1984							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
Under 20	-	-	-	-	-	-	-	-	\$ -
20-24	26	2	-	-	-	-	-	28	16,875
25-29	63	22	2	-	-	-	-	87	19,679
30-34	34	22	13	-	-	-	-	69	21,608
35-39	12	10	16	3	-	-	-	41	23,926
40-44	11	9	1	4	1	-	-	26	21,904
45-49	5	6	1	3	1	3	-	19	22,296
50-54	2	5	1	2	-	2	1	13	24,862
55-59	-	3	4	1	1	2	-	11	22,593
60-64	1	-	1	3	-	2	-	7	24,547
65 & over	-	1	-	1	1	1	-	4	18,942
<b>Total</b>	<u>154</u>	<u>80</u>	<u>39</u>	<u>17</u>	<u>4</u>	<u>10</u>	<u>1</u>	<u>305</u>	<u>\$21,210</u>

Average age ..... 34.9  
Average service ..... 6.6

STATE EMPLOYEES' RETIREMENT SYSTEM

I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1984

LEGISLATORS

<u>Age</u>	<u>Males - Full Years of Service to December 31, 1984</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>		
Under 20	-	-	-	-	-	-	-	-	\$ -
20-24	-	-	-	-	-	-	-	-	-
25-29	5	2	-	-	-	-	-	7	32,515
30-34	12	15	3	-	-	-	-	30	32,116
35-39	8	18	7	1	-	-	-	34	31,728
40-44	7	15	9	4	-	-	-	35	31,310
45-49	7	7	6	4	4	-	-	28	32,360
50-54	4	9	7	4	1	4	1	30	31,786
55-59	4	8	7	6	1	1	2	29	31,337
60-64	1	7	-	4	6	4	1	23	31,582
65 & over	-	1	2	2	3	4	1	13	31,696
<b>Total</b>	<u>48</u>	<u>82</u>	<u>41</u>	<u>25</u>	<u>15</u>	<u>13</u>	<u>5</u>	<u>229</u>	<u>\$31,758</u>

Average age ..... 46.8  
Average service ..... 10.5

<u>Age</u>	<u>Females - Full Years of Service to December 31, 1984</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>		
Under 20	-	-	-	-	-	-	-	-	\$ -
20-24	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-
30-34	-	1	1	-	-	-	-	2	31,180
35-39	-	1	-	-	-	-	-	1	31,169
40-44	1	-	-	-	-	-	-	1	35,872
45-49	1	-	-	-	-	-	-	1	31,174
50-54	-	-	-	-	-	-	-	-	-
55-59	-	1	-	-	-	-	-	1	31,176
60-64	-	1	-	-	-	-	2	3	31,175
65 & over	-	-	-	1	-	1	-	2	31,175
<b>Total</b>	<u>2</u>	<u>4</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>2</u>	<u>11</u>	<u>\$31,602</u>

Average age ..... 51.8  
Average service ..... 15.0



STATE EMPLOYES' RETIREMENT SYSTEM

I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1984

JUDGES AND JUSTICES OF THE PEACE

Age	Males - Full Years of Service to December 31, 1984							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
Under 20	-	-	-	-	-	-	-	-	\$ -
20-24	-	-	-	-	-	-	-	-	-
25-29	3	-	-	-	-	-	-	3	29,004
30-34	18	7	4	-	-	-	-	29	30,856
35-39	34	15	15	2	-	-	-	66	34,497
40-44	30	15	10	4	-	-	-	59	45,814
45-49	22	25	19	19	1	1	-	87	48,706
50-54	17	30	32	23	2	9	-	113	50,057
55-59	20	18	43	48	13	3	1	146	47,119
60-64	10	19	46	54	15	6	5	155	45,293
65 & over	4	5	22	36	9	7	2	85	50,440
Total	<u>158</u>	<u>134</u>	<u>191</u>	<u>186</u>	<u>40</u>	<u>26</u>	<u>8</u>	<u>743</u>	<u>\$45,818</u>

Average age ..... 53.3

Average service ..... 11.4

Age	Females - Full Years of Service to December 31, 1984							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
Under 20	-	-	-	-	-	-	-	-	\$ -
20-24	-	-	-	-	-	-	-	-	-
25-29	1	-	1	-	-	-	-	2	26,031
30-34	2	4	-	-	-	-	-	6	35,398
35-39	7	1	1	1	-	-	-	10	35,440
40-44	3	4	1	-	-	-	-	8	37,760
45-49	6	5	6	3	-	-	-	20	27,142
50-54	3	4	5	4	-	-	-	16	33,322
55-59	9	3	7	14	-	-	-	33	31,957
60-64	2	2	11	10	1	-	-	26	34,893
65 & over	-	1	3	2	1	1	-	8	42,128
Total	<u>33</u>	<u>24</u>	<u>35</u>	<u>34</u>	<u>2</u>	<u>1</u>	<u>0</u>	<u>129</u>	<u>\$33,300</u>

Average age ..... 52.2

Average service ..... 10.0

STATE EMPLOYEES' RETIREMENT SYSTEM

I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1984

ALL EMPLOYEES\*

Age	Males - Full Years of Service to December 31, 1984							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
Under 20	28	-	-	-	-	-	-	28	\$14,091
20-24	1,243	239	-	-	-	-	-	1,482	15,725
25-29	2,724	2,003	234	-	-	-	-	4,961	18,393
30-34	2,207	3,286	2,611	274	-	-	-	8,378	20,901
35-39	1,700	2,559	4,784	2,821	126	-	-	11,990	23,784
40-44	1,113	1,292	2,245	3,156	1,384	95	-	9,285	25,434
45-49	858	932	1,438	1,752	1,555	919	75	7,529	26,200
50-54	683	935	1,415	1,479	1,241	1,125	682	7,560	26,228
55-59	704	876	1,459	1,495	1,206	992	988	7,720	25,520
60-64	405	638	1,013	1,117	775	516	642	5,106	25,158
65 & over	116	182	316	309	178	99	117	1,317	26,562
<b>Total</b>	<b>11,781</b>	<b>12,942</b>	<b>15,515</b>	<b>12,403</b>	<b>6,465</b>	<b>3,746</b>	<b>2,504</b>	<b>65,356</b>	<b>\$23,982</b>

Average age ..... 43.8  
Average service ..... 12.9

Age	Females - Full Years of Service to December 31, 1983							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
Under 20	85	-	-	-	-	-	-	85	\$12,573
20-24	1,822	657	-	-	-	-	-	2,479	14,853
25-29	2,303	2,710	672	-	-	-	-	5,685	16,944
30-34	1,844	2,626	3,435	701	-	-	-	8,606	18,346
35-39	1,512	1,762	2,295	1,855	200	-	-	7,624	19,205
40-44	1,145	1,408	1,302	1,109	601	87	-	5,652	19,321
45-49	840	1,376	1,292	906	524	355	39	5,332	19,419
50-54	711	1,059	1,359	1,248	526	321	229	5,453	19,270
55-59	612	923	1,420	1,386	665	389	333	5,728	19,344
60-64	280	474	952	975	429	285	200	3,595	19,211
65 & over	80	115	237	231	129	74	96	962	19,524
<b>Total</b>	<b>11,234</b>	<b>13,110</b>	<b>12,964</b>	<b>8,411</b>	<b>3,074</b>	<b>1,511</b>	<b>897</b>	<b>51,201</b>	<b>\$18,651</b>

Average age ..... 42.1  
Average service ..... 10.8

\* Includes Active and Inactive (Departments 710, 712 and 714) Employees.

STATE EMPLOYES' RETIREMENT SYSTEM

II. AGE AND BENEFIT PROFILE OF INACTIVE PARTICIPANTS DECEMBER 31, 1984

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>
Under 50	-	\$ -	-	\$ -	-	\$ -
50-54	114	1,446,471	5	47,951	119	1,494,422
55-59	466	6,139,029	92	1,104,148	558	7,243,177
60-64	3,294	27,670,617	2,422	13,430,711	5,716	41,101,328
65-69	6,581	38,960,430	4,833	22,519,982	11,414	61,480,412
70-74	6,688	36,725,290	4,717	21,740,655	11,405	58,465,945
75-79	4,503	23,649,112	2,947	13,019,151	7,450	36,668,263
80-84	2,021	10,519,572	1,455	5,858,698	3,476	16,378,270
85-89	695	3,457,881	580	2,387,069	1,275	5,844,950
90 & Over	214	1,210,329	236	893,326	450	2,103,655
<b>Total</b>	<b>24,576</b>	<b>\$149,778,731</b>	<b>17,287</b>	<b>\$81,001,691</b>	<b>41,863</b>	<b>\$230,780,422</b>

Average age ..... 71.4  
Average annual pension ...\$5,512

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>
Under 30	1	\$ 546	20	\$ 12,654	21	\$ 13,200
30-34	115	73,037	463	305,075	578	378,112
35-39	705	598,420	622	514,705	1,327	1,113,125
40-44	757	927,752	363	395,308	1,120	1,323,060
45-49	578	1,240,154	336	548,578	914	1,788,732
50-54	704	2,264,587	475	1,169,914	1,179	3,434,501
55-59	921	4,522,464	846	3,120,998	1,767	7,643,462
60-64	957	6,331,886	931	4,093,151	1,888	10,425,037
65 & Over	1,123	5,334,586	949	4,373,161	2,072	9,707,747
<b>Total</b>	<b>5,861</b>	<b>\$21,293,432</b>	<b>5,005</b>	<b>\$14,533,544</b>	<b>10,866</b>	<b>\$35,826,976</b>

Average age ..... 53.9  
Average annual pension....\$3,297

STATE EMPLOYES' RETIREMENT SYSTEM

II. AGE AND BENEFIT PROFILE OF INACTIVE PARTICIPANTS DECEMBER 31, 1984

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>
Under 30	1	\$ 3,333	3	\$ 13,976	4	\$ 17,309
30-34	18	79,770	24	105,328	42	185,098
35-39	66	315,663	38	164,547	104	480,210
40-44	91	473,753	66	303,996	157	777,749
45-49	126	684,255	68	304,014	194	988,269
50-54	220	1,314,856	132	637,758	352	1,952,614
55-59	463	2,700,149	268	1,225,600	731	3,925,749
60-64	519	2,610,908	383	1,608,027	902	4,218,935
65 & over	451	1,803,916	451	1,493,762	902	3,297,678
<b>Total</b>	<b><u>1,955</u></b>	<b><u>\$9,986,603</u></b>	<b><u>1,433</u></b>	<b><u>\$5,857,008</u></b>	<b><u>3,388</u></b>	<b><u>\$15,843,611</u></b>

Average age ..... 58.9  
 Average annual pension ...\$4,676

BENEFICIARIES

<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	6	\$ 12,301	6	\$ 14,611	12	\$ 26,912
25-29	6	20,364	10	39,199	16	59,563
30-34	8	25,158	10	23,736	18	48,894
35-39	9	33,205	25	70,575	34	103,780
40-44	22	63,125	21	57,221	43	120,346
45-49	17	55,994	47	124,588	64	180,582
50-54	12	47,261	86	343,013	98	390,274
55-59	13	44,133	233	929,540	246	973,673
60-64	35	139,803	459	1,804,191	494	1,943,994
65-69	47	166,776	808	2,849,905	855	3,016,681
70-74	36	116,279	977	3,207,378	1,013	3,323,657
75-79	29	90,163	887	2,771,457	916	2,861,620
80-84	13	39,704	577	1,524,471	590	1,564,175
85-89	7	24,170	292	668,955	299	693,125
90 & Over	3	4,496	146	227,561	149	232,057
<b>Total</b>	<b><u>263</u></b>	<b><u>\$ 882,932</u></b>	<b><u>4,584</u></b>	<b><u>\$14,656,401</u></b>	<b><u>4,847</u></b>	<b><u>\$15,539,333</u></b>

Average age ..... 71.4  
 Average annual pension ...\$3,206

STATE EMPLOYES' RETIREMENT SYSTEM

BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1984  
(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 employees and certain other eligible groups. The major provisions may be summarized as follows:

Eligibility Employees

- Class A - All regular State employees as well as employees of certain Commissions and Authorities and all employees of state-owned educational institutions and the Pennsylvania State University (unless such employees have joined the Public School Employees' Retirement System of Pennsylvania). All employees who become members (or who rejoin the Retirement System) on and after March 1, 1974.
- Class C - Officers and employees of the Pennsylvania State Police and enforcement officers of the Pennsylvania Liquor Control Board who were members prior to March 1, 1974.
- Class D-3 - Members of the General Assembly who were members prior to March 1, 1974.
- Class E-1 - Members of the Judiciary who were members prior to March 1, 1974.
- Class E-2 - Justices of the Peace paid by the Commonwealth who were members prior to March 1, 1974.

STATE EMPLOYES' RETIREMENT SYSTEM

BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1984  
(as embodied in Act 31, approved March 1, 1974)

Age Requirements for Superannuation Retirement (with full formula benefits)

Class A - Age 60, except for members of the General Assembly, enforcement officers, correction officers, psychiatric security aides and officers of the Pennsylvania State Police for whom the requirement is age 50. Members of Class A with 35 or more years of credited service are entitled to at least full formula benefits regardless of age.

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, is equal to 2% of the high 3-year average salary ("F.A.S.") of the member multiplied by the years and fractions of credited service.

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

<u>Class</u>	<u>Multiplier</u>	
C	1.0	
D-3	3.75	
E-1	2.0	for each of the first 10 years of judicial service plus 1.5 for each subsequent year.
E-2	1.5	

NOTE: There are conditions under which long-service members or members retiring at very young or advanced ages may receive somewhat larger benefits than those described above.

STATE EMPLOYES' RETIREMENT SYSTEM

BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1984  
(as embodied in Act 31, approved March 1, 1974)

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 were age 60 at retirement.

In addition to the above benefits, a member who, prior to March 1, 1974, has elected "Social Security Integration Credits" is entitled to a single-life annuity of 2% of his "Average Non-Covered Salary" for each year of Social Security Integration credits. "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. In effect, the years of Social Security Integration Credit are the same as total credited service unless the member did not elect coverage when first eligible.

Age and Service Requirements for Early Retirement

In the case of withdrawal, a member of Class D-3 is eligible for early retirement after 6 years of legislative service and members of other classes are eligible after 10 years of service.

Adjustment for Early Retirement Benefit

A member receives the actuarial equivalent of the annuity payable at superannuation retirement age earned to the date of early retirement.



STATE EMPLOYES' RETIREMENT SYSTEM

BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1984  
(as embodied in Act 31, approved March 1, 1974)

Age and Service Requirements for Disability Retirement

A member is eligible for disability retirement if he is unable to perform his current job prior to superannuation retirement age and has at least 5 years of service, except an officer of the State Police or an enforcement officer for whom there is no service requirement.

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% of F.A.S. at time of disability. If the benefit so calculated is less than 33-1/3% of F.A.S., the disability benefit is equal to the smaller of:

- (a) the benefit calculated as for superannuation retirement based on service to superannuation, or
- (b) 33-1/3% 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 calculated as for superannuation retirement but deferred until superannuation retirement age.

STATE EMPLOYEES' RETIREMENT SYSTEM

BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1984  
(as embodied in Act 31, approved March 1, 1974)

Eligibility for Death Benefit Prior to Retirement

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

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 he retired the day before he dies, assuming he had elected Option 1 if no other option had been elected.

Death Benefits After Retirement

A member may elect one of several typical optional reduced pensions in lieu of his maximum single-life annuity provided by the formula. However, if he 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 his total single-life allowance including any cost of living supplements up to not less than at the rate of \$84.50 for each year of credited service.

STATE EMPLOYES' RETIREMENT SYSTEM

BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1984  
(as embodied in Act 31, approved March 1, 1974)

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 July 1, 1984 for annuitants who had retired on or prior to July 1, 1982. The increases varied according to year of retirement years of service and were determined as the total of 2% of the annuity in effect on July 1, 1984 plus (b) \$1 times full years of active service, plus (c) \$2 times full years of retirement through July 1, 1983. Other supplemental annuities have become effective as of July 1, 1968, July 1, 1974, and July 1, 1979.

Rate of Member Contribution

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

Class A - 5.00% of total salary for those who became members prior to July 22, 1983 and  
6.25% of total salary for those who became members July 22, 1983 or thereafter.

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 - Assumed to be 18.75%

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

Class E-2 - Assumed to be 7.50%

(ii) Additional contribution for Social Security Integration Credit

A member of any class who elected before March 1, 1974 Social Security Integration Credit pays 5% 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.

STATE EMPLOYES' RETIREMENT SYSTEM

BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1984  
(as embodied in Act 31, approved March 1, 1974)

Interest Credited on Member Contribution

A rate of 4% 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, his accumulated member contributions are paid to his beneficiary; also, any member terminating service when not eligible for another form of benefit is paid a refund of his accumulated contributions and interest; any other terminating member may elect the refund of his accumulated contributions and interest in lieu of the retirement allowance to which he is entitled.

Employer Contributions

The State pays the balance of the required contributions in excess of the members contributions in accordance with the law. Basically, the employer contribution is the normal cost plus an accrued liability contribution funded over 30 years, assuming the accrued liability contribution increases at least 4% each year. In addition, contributions are required to fund each of the Supplemental Allowances over a 20-year period.

STATE EMPLOYES' RETIREMENT SYSTEM

I. ACTUARIAL ASSUMPTIONS

Interest Rate: 5-1/2% per annum, compounded annually.

Service Tables: Service tables for active members based on the experience of the Retirement System in 1975-80, with values at specimen ages in five separate classes as follows:

CLASS*	AGE	Rates of Separation Due To							Salary Scale
		Withdrawal after Years of Service			Death	Dis-ability	Early Retirement**	Super-annuation Retirement**	
		1	5	11					
A and B (MALE)	25	.2279	.1074	.0040	.0012	.0007	.0340	-	\$ 4,000
	35	.2008	.0750	.0036	.0012	.0020	.0270	-	6,721
	45	.1649	.0498	.0033	.0039	.0051	.0160	-	9,313
	55	.1286	.0320	-	.0099	.0135	.0210	.1924	12,028
	65	-	-	-	.0251	-	-	.4329	15,389
A and B (FEMALE)	25	.1829	.1290	.0023	.0005	.0006	.0321	-	4,000
	35	.1516	.0836	.0019	.0010	.0016	.0204	-	6,721
	45	.1320	.0543	.0016	.0018	.0041	.0149	-	9,313
	55	.1280	.0353	-	.0038	.0102	.0258	.1800	12,028
	65	-	-	-	.0121	-	-	.4000	15,389
C (MALE and FEMALE)	25	.1303	.0102	.0002	.0012	.0007	.0125	-	4,000
	35	.1303	.0102	.0002	.0039	.0020	.0125	-	6,448
	45	.1303	.0102	-	.0099	.0051	.0125	-	9,231
	55	-	-	-	.0251	-	-	.0843	12,165
	65	-	-	-	.0475	-	-	.5000	15,566
D (MALE and FEMALE)	25	.0300	.0160	.0145	.0012	.0007	.0390	-	4,000
	35	.0300	.0160	.0145	.0039	.0020	.0390	-	5,118
	45	.0300	.0160	-	.0099	.0051	.0390	-	6,549
	55	-	-	-	.0251	-	-	.0700	8,379
	65	-	-	-	.0475	-	-	.2500	10,723
E (MALE and FEMALE)	25	.0950	.0200	.0070	.0012	.0007	.0183	-	4,000
	35	.0950	.0200	.0070	.0039	.0020	.0183	-	5,118
	45	.0950	.0200	.0070	.0099	.0051	.0183	-	6,549
	55	.0950	.0200	-	.0251	.0135	.0183	-	8,379
	65	-	-	-	.0475	-	-	.1000	10,723

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

Disability Allowances: The mortality tables used for those receiving disability allowances are modifications based on sex of 1965 Railroad Retirement Board Mortality among Totally Disabled Annuitants.

\* As defined in Retirement Law prior to March 1, 1974 amendment (Act 31).

\*\* Retirement Rates are assumed to decrease by 20% after 1990.

## STATE EMPLOYEES' RETIREMENT SYSTEM

### II. 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 (@ 5.5%). Each year twenty (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 eighty (80) percent to be recognized over the next four years. This asset valuation method began with the December 31, 1982 valuation. To begin this process, the actuarial value of assets was set equal to the book value of assets as of December 31, 1981 and carried forward.

### III. ACTUARIAL COST METHOD

A variation of the Entry Age Actuarial Cost Method was used to determine liabilities and costs related to superannuation, withdrawal, death and disability benefits. The normal cost for new entrants is calculated as a level percentage of compensation. Then the present value of future benefits for active and inactive participants and annuitants is reduced by the present value of future normal costs, the present value of future member contributions, the value of the supplemental annuities, and the actuarial value of assets. The remaining amount is the unfunded actuarial accrued liability.

The annual contribution rate is equal to the sum of the normal cost, plus amounts necessary to amortize the unfunded actuarial accrued liability, and the supplemental annuity liability. Actuarial gains and losses are included in the unfunded actuarial accrued liability and are amortized accordingly.

The Unit Credit Actuarial Cost Method was used to determine the actuarial present value of accumulated plan benefits (both vested and nonvested) as of the valuation date.

STATE EMPLOYES' RETIREMENT SYSTEM

DEFINITIONS OF TECHNICAL TERMS

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.

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

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.

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.

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