

STATE EMPLOYES' RETIREMENT SYSTEM

1982 ACTUARIAL REPORT

STATE EMPLOYEES' RETIREMENT SYSTEM

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HAY/HUGGINS
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July 12, 1983

Mr. Robert L. Cusma, Secretary
State Employees' Retirement System
204 Labor & Industry Building
Harrisburg, Pennsylvania 17120

Dear Mr. Cusma:

This report presents the results of our actuarial valuation of the State Employees' Retirement System as of December 31, 1982. 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 1983-84 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.

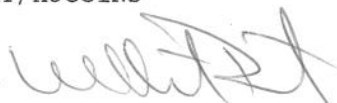
Certification

To the best of my 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 my best estimate of anticipated experience under the plan.

Respectfully submitted,

HAY/HUGGINS

By



WILLIAM A. REIMERT, F.S.A.

Member American Academy of Actuaries
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STATE EMPLOYES' RETIREMENT SYSTEM

VALUATION HIGHLIGHTS

	<u>1983-84</u> <u>Fiscal Year</u>	<u>1982-83</u> <u>Fiscal Year</u>
• Summary of Contributions: (Percent of Participants' Compensation)		
Normal Cost	7.47%	7.83%
Amortization of Unfunded Actuarial Accrued Liability ..	8.12%	8.74%
Amortization of Supplemental Annuities	1.18%	1.28%
Total	<u>16.77%</u>	<u>17.85%</u>
Contribution Rate for Special Class C Benefits:		
State Police	6.44%	1.49%
Enforcement Officers	7.91%	0%
Contribution Rate for:		
Class D Members	59.92%	29.91%
Class E Members	25.59%	21.84%
	<u>December 31, 1982</u> <u>Valuation</u>	<u>December 31, 1981</u> <u>Valuation</u>
• Market Value of Assets	\$3,742,622,253	\$2,818,109,202
• Actuarial Present Value of Accumulated Plan Benefits:		
Vested benefits	\$3,853,008,107	\$3,435,572,798
Non-vested benefits	100,811,640	78,830,488
Total	<u>\$3,953,819,747</u>	<u>\$3,514,403,286</u>
• Active Participants:		
Number	117,483	116,972
Average compensation	\$ 19,280	\$ 17,700
Total compensation	\$2,265,036,305	\$2,066,812,955
• Annuitants and Beneficiaries:		
Number	55,640	52,604
Total annual pension	\$ 240,991,962	\$ 224,707,506
• Inactive Participants:		
Number	2,705	3,075

GENERAL DISCUSSION

The costs and liabilities presented in this report have been determined on the basis of the set of actuarial assumptions approved by the Board in 1981 with the exception that the assumed rates of salary growth were decreased and the method for valuing plan assets was changed.

At the June 22, 1983 board meeting, the contribution rate developed as a result of the December 31, 1982 valuation was approved as the rate applicable to the 1983-84 fiscal year; whereas, the December 31, 1980 valuation contribution rate was the basis for the 1982-83 fiscal year contribution rate. A comparison of the contribution rates for the 1983-84 fiscal year and the 1982-83 fiscal year (based on the December 31, 1980 valuation) is shown above.

STATE EMPLOYES' RETIREMENT SYSTEM

COMMENTS ON SCHEDULES

Contribution Rate

Schedules A and B summarize the development of the Employer Contribution Rate. 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, 1982 actuarial valuation is 16.77% which is more than 2% lower than the comparable figure which was developed based on the December 31, 1981 actuarial valuation. These rates are summarized below.

	<u>1982</u> <u>Valuation</u>	<u>1981</u> <u>Valuation</u>
Normal Cost Rate	7.47%	8.35%
Unfunded Actuarial Accrued Liability Rate.	8.12	9.18
Supplemental Annuities Rate	<u>1.18</u>	<u>1.34</u>
TOTAL	16.77%	18.87%

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.

The unfunded actuarial accrued liability of \$2,835,923,161 is composed of two parts: one part is to be funded over 30 years from July 1, 1969 and 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 three parts: one part is to be funded over 20 years from July 1, 1969, the second part over 20 years from July 1, 1974, and the third over 20 years from July 1, 1979 on the basis of level payments for each part.

STATE EMPLOYES' RETIREMENT SYSTEM

There were numerous changes made in the actuarial assumptions and methods since the December 31, 1981 Actuarial Valuation. They are:

- the previously utilized book value of assets (amortized value for bonds; cost value for stocks) is no longer available so a method of valuing assets was developed which will write up the value each year by the actuarial interest rate and phase in the difference with market over a five year period (this asset value will be referred to as the actuarial value of assets);
- the salary scale utilized to project salary growth was decreased by 1% per year;
- the accounting for Special Police and Enforcement Officer Benefits was corrected (Special Class C Benefits);
- the liabilities associated with the McKenna and Catania decisions were reflected in the valuation; and,
- the anticipated cost of members applying to purchase service was projected.

The impact of each of these changes on the contribution rates are summarized below.

	<u>Normal Cost</u>	<u>Unfunded Accrued Liabilities</u>	<u>Supplemental Annuities</u>	<u>Total</u>
1981 Actuarial Valuation	8.35%	9.18%	1.34%	18.87%
- Book vs. Actuarial Value	--	0.47	--	0.47
- Salary Scale	(1.82)	(0.89)	0.01	(2.70)
- Class C Benefits	--	(0.22)	--	(0.22)
- McKenna/Catania	--	0.10	--	0.10
- Purchase Service	0.83	(0.40)	--	0.43
- Other	0.11	(0.12)	(0.17)	(0.18)
1982 Actuarial Valuation	7.47%	8.12%	1.18%	16.77%

Contribution Rates for Special State Police and Enforcement Officer Benefits

Schedule C summarizes the development of the additional contributions required to support the special benefits of State Police and Enforcement Officers.

The contribution rates developed as a result of the 1982 actuarial valuation applicable to the 1983-84 fiscal year are 6.44% and 7.91% of the Class C State Police and Enforcement Officers payroll respectively. The comparable figures for the 1982-83 fiscal year were 1.49% and 0%, respectively. (These 1982-83 figures did not reflect the corrected accounting for the Special Police and Enforcement Officer Benefit Accounts.)

STATE EMPLOYEES' RETIREMENT SYSTEM

In the 1981 actuarial report, we indicated that no contributions were required to support these special benefits. Those calculations were revised when it was discovered that the accounting in the State Police Benefit Account and the Enforcement Officers Benefit Account was inaccurate. The background as well as the approach utilized to restate these accounts was summarized in our letter to Mr. Everhart of May 2, 1983. The result of this restatement was to transfer \$57,128,751 from the State Police Benefit Account and \$4,047,121 from the Enforcement Officers Benefit Account to the State Accumulation Account.

Class D and Class E Member Contribution Rates

A special contribution rate is 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 rates is summarized in Schedule D. The significant increase in the 1983-84 fiscal year contribution rate over the previous fiscal year was due to the recognition of liabilities associated with the McKenna and Catania decisions.

Actuarial Balance Sheet

Schedule E contains an actuarial balance sheet. It illustrates that the actuarial present value of plan benefits (Total Liabilities) must be funded by present assets and 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 Transfer 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. Based on the figures reported by SERS as of December 31, 1982 and the results of the 1982 actuarial valuation, the required reserve transfer is determined as follows::

Annuity Reserve Account	\$2,188,255,817
Actuarial Liability	<u>2,200,182,614</u>
Surplus (Deficiency)	(11,926,797)

Thus \$11,926,797 should be transferred to the Annuity Reserve Account from the State Accumulation Account. This transfer has been reflected in the account balances shown in the accompanying schedules.

Schedule F summarizes the above transfer as well as the transfers from the State Police Benefit Account and the Enforcement Officers Benefit Account referred to earlier.

STATE EMPLOYEES' RETIREMENT SYSTEM

Funding Status

Schedule G 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. A comparison of the market value of assets with the actuarial present value of accumulated plan benefits provides a measure of the Plan's funded status. As shown in the schedule, the market value of assets was exceeded by the present value of the accumulated benefits as of the valuation date.

Plan Assets

Schedule H summarizes the development of the actuarial value of assets as of December 31, 1982.

In prior years the book value of assets was utilized in developing the actuarial value of assets. The book value represented the amortized value of bonds and the cost value of equities. As part of its compliance with FASB Statement No. 35, the Board decided to stop using the book value of assets and to utilize market values in the accounts of the system. Accordingly, book value under the old procedures is no longer calculated.

We recommend the use of an asset valuation method which will reflect market values but smooth out year to year fluctuations therein. The specific approach we developed will gradually recognize over a 5 year period the differences between total investment returns and the assumed rate of 5-1/2%. We applied this approach starting with the book value of assets as of December 31, 1981. A detailed description of the asset valuation method is contained in Schedule K.

Participant Data

Section I of Schedule I provides a distribution of the active participants as of December 31, 1982 by sex, age, and length of service. It also shows the average 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 the reasonableness and consistency of the participant data, we have not audited the data but have relied on it as submitted by SERS.

Plan Provisions

Schedule J contains a summary of the principal provisions of the plan in effect as of December 31, 1982. There have been changes in the provisions since the prior valuation to reflect the impact of the McKenna and Catania decisions as well as the anticipated outcome of the outstanding issues involved in those cases.

STATE EMPLOYEES' RETIREMENT SYSTEM

Actuarial Assumptions and Methods

Schedule K summarizes the actuarial assumptions, the asset valuation method and cost methods used for the valuation. Several changes were made in the actuarial assumptions and methods since the prior valuation. Specifically, the salary increase assumption was decreased by 1% and the actuarial value of assets was utilized in lieu of book value.

Because of the significant change required in the valuation of plan assets, we undertook a best estimate, realistic projection of plan costs. This calculation reflected:

- the market value of plan assets;
- the current expectation of a 10-1/2% return on market over the next five years
- a pattern of investment returns grading down to 5-1/2% after 25 years;
- the recently negotiated settlement providing a 2% salary increase in January, 1984 and a 3% salary increase in July, 1984;
- a 2% spread between the rate of investment return and salary growth;
- the costs of the McKenna and Catania decisions; and
- the purchase of service credits by plan members

These calculations indicated that an Employer contribution rate of 16.77% is appropriate.

STATE EMPLOYES' RETIREMENT SYSTEM

I. UNFUNDED ACTUARIAL ACCRUED LIABILITY DECEMBER 31, 1982

1) Present Value of Benefits:

(a) Active and Inactive Participants	
Superannuation and Withdrawal	\$ 6,256,645,810
Disability	509,209,233
Death	769,273,087
Refunds	88,550,441
Special Police Benefits	76,286,887
(b) Annuitants and Beneficiaries	2,366,945,564
(c) Miscellaneous	1,961,253
(d) Total	10,068,872,275

2) Present Value of Member and Employer Contributions:

(a) Normal Cost (Employer portion only)	1,701,973,913
(b) Supplemental Annuity Amortization	272,842,572
(c) Member Contributions	1,355,120,416
(d) Special Police and Enforcement	
Officer Contributions	73,060,444
(e) Total	3,402,997,345

3) Actuarial Accrued Liability: (1) - (2)	6,665,874,930
4) Actuarial Value of Assets	3,829,951,769
5) Unfunded Actuarial Accrued Liability: (3) - (4)	2,835,923,161

II. AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY

<u>Funding Period</u> <u>30 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	1,994,787,751	134,787,145	5.77%
1974	<u>841,135,410</u>	<u>45,133,583</u>	<u>1.93</u>
	2,835,923,161	179,920,728	7.70%

*Payment for 1983 expressed as a percentage of the estimated total payroll for active members in 1983 of \$2,334,701,238.

STATE EMPLOYEES' RETIREMENT SYSTEM

I. DEVELOPMENT OF EMPLOYER NORMAL COST RATE
(Fiscal Year 1983-84)

1) Normal Cost Rate for new active members to fund:		
(a) Superannuation and Withdrawal	9.00%	
(b) Disability92	
(c) Death	1.00	
(d) Refunds	<u>1.16</u>	
(e) Total	12.08%	
2) Member Deductions	5.00%	
3) Employer Portion of Normal Cost Rate: (1)(e) - (2)	7.08%	

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	\$ 3,510,635	\$ 623,265	.03%
1974	63,772,446	7,234,062	.31
1979	<u>205,559,491</u>	<u>18,272,824</u>	<u>.78</u>
	\$272,842,572	\$26,130,151	1.12%

*Payment for 1983 expressed as a percentage of the estimated total payroll for active members in 1983 of \$2,334,701,238.

III. DEVELOPMENT OF TOTAL EMPLOYER CONTRIBUTION RATE
(Fiscal Year 1983-84)

	<u>Payable</u> <u>January 1</u>	<u>Payable</u> <u>Quarterly</u>
1) Employer Portion of Normal Cost Rate	7.08%	7.47%
2) Payment on Unfunded Actuarial Accrued Liability	7.70	8.12
3) Payment on Supplemental Annuities	<u>1.12</u>	<u>1.18</u>
4) Total	15.90%	16.77%

STATE EMPLOYES' RETIREMENT SYSTEM

I. DEVELOPMENT OF CONTRIBUTION RATES FOR SPECIAL STATE POLICE
AND ENFORCEMENT OFFICER BENEFITS

(Fiscal Year 1983-84)

	<u>State Police</u>	<u>Enforcement Officers</u>
1) Balance in Benefit Account	\$ 159,505,640	\$10,483,753
2) Present Value of Benefits for Annuitants and Beneficiaries	156,481,252	10,281,698
3) Assets available for Special Benefits for Active Members: (1) - (2)	3,024,388	202,055
4) Present Value of Special Benefits for Active Members	73,257,775	3,029,112
5) Present Value of future contribution to fund Special Benefits: (4) - (3) ..	70,233,387	2,827,057
6) Present Value of Future Compensation for eligible Active Members	1,089,925,127	35,749,431
7) Contribution Rate as a percentage of payroll: (5) / (6)	<u>6.44%</u>	<u>7.91%</u>

STATE EMPLOYES' RETIREMENT SYSTEM

DEVELOPMENT OF CONTRIBUTION RATES FOR
CLASS D AND CLASS E MEMBERS
(Fiscal Year 1983-84)

	<u>Class D</u>	<u>Class E</u>
1) Average Percentage of Compensation Contributed by Members in 1982	8.589%	6.103%
2) Supplemental Percentage Contribution to reflect McKenna and Catania decisions ...	10.095	1.875
3) Total Member Contribution Rate: (1) + (2)....	18.684	7.978
4) Ratio of Employer to Member Contributions ...	3.207	3.207
5) Employer Contribution Rate: (3) x (4)	59.92%	25.59%

STATE EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL BALANCE SHEET

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	Annuity Reserve Account
\$ 1,083,165,468	\$ 2,200,182,614
Annuity Reserve Account	State Police Benefit Account
2,200,182,614	156,481,252
State Police Benefit Account	Enforcement Officers Benefit Account
159,505,640	10,281,698
Enforcement Officers Benefit Account	Total for Annuitants and Beneficiaries
10,483,753	\$ 2,366,945,564
State Accumulation Account	<u>Present Value of Benefits to Active and Inactive Members from:</u>
811,564,375	Member Savings Account and State Accumulation Account
Supplemental Annuity Account	Superannuation and
(272,842,572)	Withdrawal
Reserve for Gains and Losses	\$6,256,645,810
(251,398,278)	Disability
Miscellaneous	509,209,233
1,961,253	Death
Total Present Assets (Market Value)	769,273,087
\$ 3,742,622,253	Refunds
Adjustment to smooth market fluctuations	88,550,441
87,329,516	Total
Total Present Assets (Actuarial Value)	\$ 7,623,678,571
\$ 3,829,951,769	State Police Benefit Account
<u>Present Value of Future Contributions</u>	73,257,775
Members' Savings Account (Employee)	Enforcement Officers Benefit Account
\$ 1,355,120,416	3,029,112
Normal Cost Contributions (Employer)	Total for Active and Inactive Members
1,701,973,913	\$ 7,699,965,458
Accrued Liability Amortization (Employer)	Miscellaneous
2,835,923,161	1,961,253
Supplemental Annuity Amortization (Employer)	TOTAL LIABILITIES
272,842,572	\$10,068,872,275
Special State Police Contributions (Employer)	TOTAL ASSETS
70,233,387	\$ 6,238,920,506
Special Enforcement Officer Contributions (Employer)	\$10,068,872,275
2,827,057	
Total Future Contributions	
\$ 6,238,920,506	
TOTAL ASSETS	
\$10,068,872,275	

STATE EMPLOYEES' RETIREMENT SYSTEM

SUMMARY OF TRANSFERS WITHIN SERS ACCOUNTS

1) Transfer to bring the Annuity Reserve Account into balance with the Actuarial Present Value of Annuitant and Beneficiaries Benefits.	
Transfer to Annuity Reserve Account	\$11,926,797
Transfer from State Accumulation Account	11,926,797
2) Transfer to correct cumulative misstatement in State Police Benefit Account.	
Transfer from State Police Benefit Account	\$57,128,751
Transfer to State Accumulation Account	57,128,751
3) Transfer to correct cumulative misstatement in Enforcement Officers Benefit Account.	
Transfer from Enforcement Officers Benefit Account ..	\$ 4,047,121
Transfer to State Accumulation Account	4,047,121

STATE EMPLOYEES' RETIREMENT SYSTEM

I. FUNDING STATUS OF ACCUMULATED PLAN BENEFITS DECEMBER 31, 1982

1. Actuarial present value of accumulated plan benefits:	
(a) Vested	
Active participants (62,941)	\$2,012,485,125
Inactive (2,705)	33,875,039
Superannuation Retirements (39,127)	1,378,764,942
Early Retirements (8,796)	239,500,278
Disabled (3,236)	86,386,024
Beneficiaries (4,481)	101,996,699
Total (121,286)	<u>\$3,853,008,107</u>
(b) Non-vested (54,542)	<u>100,811,640</u>
(c) Total: (a) + (b)	\$3,953,819,747
2. Market value of assets	
	3,742,622,253
3. Unfunded actuarial present value of:	
(a) Vested benefits: (1a) - (2)	<u>\$ 110,385,854</u>
(b) Accumulated benefits: (1c) - (2)	<u>\$ 211,197,494</u>

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

1. Actuarial present value of accumulated plan benefits as of December 31, 1981	
	\$3,514,403,286
2. Changes during the year:	
(a) Due to passage of time	\$ 263,326,131
(b) Due to plan provision changes	0
(c) Due to actuarial assumption changes	176,090,330
(d) Total	<u>\$ 439,416,461</u>
3. Actuarial present value of accumulated plan benefits as of December 31, 1982: (1) + (2)	
	<u>\$3,953,819,747</u>

* The assumed rate of return on investments was 9.5% in 1982 as compared to 10.0% in 1981. The assumptions relating to disability, termination and retirement were not changed.

STATE EMPLOYES' RETIREMENT SYSTEM

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

1) Actuarial Value at January 1, 1982	\$ 3,497,667,000
2) Contributions in 1982	505,108,393
3) Benefits and Expenses in 1982	347,691,884
4) Interest @ 5.5% to December 31, 1982	196,700,639
5) Expected Actuarial Value: (1) + (2) - (3) +(4)	3,851,784,148
6) Market Value at December 31, 1982	3,742,622,253
7) Difference between Expected Actuarial and Market Values: (5) - (6)	(109,161,895)
8) 20% of Difference between Expected Actuarial Value and Market Value	(21,832,379)
9) Actuarial Value at December 31, 1982: (5) + (8).....	<u>\$ 3,829,951,769</u>

SCHEDULE H

STATE EMPLOYEES' RETIREMENT SYSTEM

I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1982

GENERAL EMPLOYEES

Age	Males - Full Years of Service to December 31, 1982								Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+	Total	
Under 20	63	-	-	-	-	-	-	63	\$15,909
20-24	1,678	189	-	-	-	-	-	1,867	14,802
25-29	2,691	1,956	293	-	-	-	-	4,940	16,776
30-34	2,323	3,361	2,849	179	-	-	-	8,712	19,508
35-39	1,519	2,367	3,647	1,437	84	-	-	9,054	21,765
40-44	963	1,200	2,173	1,774	774	87	-	6,971	23,248
45-49	743	940	1,537	1,424	1,016	632	63	6,355	23,631
50-54	732	1,032	1,476	1,370	980	959	403	6,952	23,384
55-59	663	981	1,598	1,446	1,038	813	765	7,304	22,692
60-64	356	646	1,076	1,099	645	396	527	4,745	22,158
65 & over	119	209	341	284	142	74	85	1,254	22,505
Total	11,850	12,881	14,990	9,013	4,679	2,961	1,843	58,217	\$21,513

Average age 43.5
 Average service 11.9

Age	Females - Full Years of Service to December 31, 1982								Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+	Total	
Under 20	188	-	-	-	-	-	-	188	\$13,078
20-24	2,656	588	-	-	-	-	-	3,244	14,099
25-29	2,867	3,183	959	-	-	-	-	7,009	15,842
30-34	2,080	2,759	3,171	390	-	-	-	8,400	17,139
35-39	1,580	1,694	1,874	1,100	122	-	-	6,370	17,733
40-44	1,325	1,423	1,295	748	479	90	-	5,360	17,688
45-49	1,004	1,234	1,353	719	399	261	39	5,009	17,705
50-54	782	1,162	1,478	1,010	476	331	213	5,452	17,704
55-59	600	993	1,665	1,244	702	380	323	5,907	17,633
60-64	207	535	1,062	852	416	229	181	3,482	17,398
65 & over	59	125	247	236	93	62	91	913	17,708
Total	13,348	13,696	13,104	6,299	2,687	1,353	847	51,334	\$17,086

Average age 41.4
 Average service 10.0

STATE EMPLOYEES' RETIREMENT SYSTEM

I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1982

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

Age	Males - Full Years of Service to December 31, 1982							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
Under 20	-	-	-	-	-	-	-	-	\$ -
20-24	191	2	-	-	-	-	-	193	14,821
25-29	386	196	4	-	-	-	-	586	18,848
30-34	184	393	298	9	-	-	-	884	22,811
35-39	110	204	994	559	14	-	-	1,881	25,448
40-44	72	89	247	546	299	22	-	1,275	25,822
45-49	37	71	55	129	170	190	23	675	26,185
50-54	18	35	32	55	87	110	150	487	26,676
55-59	13	32	33	42	80	71	204	475	26,533
60-64	5	6	9	17	45	30	36	148	25,140
65 & over	-	1	-	5	2	4	5	17	23,690
Total	<u>1,016</u>	<u>1,029</u>	<u>1,672</u>	<u>1,362</u>	<u>697</u>	<u>427</u>	<u>418</u>	<u>6,621</u>	<u>\$24,506</u>

Average age 40.1
Average service 14.1

Age	Females - Full Years of Service to December 31, 1982							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
Under 20	-	-	-	-	-	-	-	-	\$ -
20-24	21	-	-	-	-	-	-	21	13,389
25-29	37	9	-	-	-	-	-	46	16,998
30-34	17	20	14	-	-	-	-	51	21,455
35-39	6	9	8	2	1	-	-	26	22,362
40-44	5	5	1	3	-	2	-	16	22,084
45-49	4	4	4	1	-	3	-	16	23,612
50-54	1	3	2	1	1	2	1	11	23,751
55-59	1	3	4	1	-	2	-	11	21,480
60-64	-	1	2	-	1	1	-	5	20,936
65 & over	1	-	-	-	-	1	-	2	18,117
Total	<u>93</u>	<u>54</u>	<u>35</u>	<u>8</u>	<u>3</u>	<u>11</u>	<u>1</u>	<u>205</u>	<u>\$20,041</u>

Average age 35.8
Average service 7.1

STATE EMPLOYEES' RETIREMENT SYSTEM

I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1982

LEGISLATORS

Age	Males - Full Years of Service to December 31, 1982							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
Under 20	-	-	-	-	-	-	-	-	\$ -
20-24	-	-	-	-	-	-	-	-	-
25-29	7	2	-	-	-	-	-	9	25,615
30-34	15	12	2	-	-	-	-	29	25,615
35-39	16	18	4	-	-	-	-	38	25,916
40-44	8	10	9	3	2	-	-	32	26,730
45-49	4	6	5	2	-	1	-	18	28,162
50-54	5	14	6	7	3	-	1	36	26,257
55-59	4	6	3	4	5	1	2	25	26,630
60-64	2	2	2	8	4	4	2	24	26,774
65 & over	2	1	4	1	3	1	-	12	25,616
Total	<u>63</u>	<u>71</u>	<u>35</u>	<u>25</u>	<u>17</u>	<u>7</u>	<u>5</u>	<u>223</u>	<u>\$26,374</u>

Average age 46.4
 Average service 9.7

Age	Females - Full Years of Service to December 31, 1982							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
Under 20	-	-	-	-	-	-	-	-	\$ -
20-24	-	-	-	-	-	-	-	-	-
25-29	1	-	-	-	-	-	-	1	25,610
30-34	1	1	-	-	-	-	-	2	25,615
35-39	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-	-
45-49	1	-	-	-	-	-	-	1	25,610
50-54	-	-	-	-	-	-	-	-	-
55-59	1	1	-	-	-	-	-	2	25,617
60-64	-	1	1	-	-	-	2	4	25,617
65 & over	-	-	-	-	-	1	-	1	25,616
Total	<u>4</u>	<u>3</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>2</u>	<u>11</u>	<u>\$25,615</u>

Average age 51.0
 Average service 13.4

STATE EMPLOYEES' RETIREMENT SYSTEM

I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1982

JUDGES AND JUSTICES OF THE PEACE

Age	Males - Full Years of Service to December 31, 1982							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
Under 20	-	-	-	-	-	-	-	-	\$ -
20-24	-	-	-	-	-	-	-	-	-
25-29	5	2	-	-	-	-	-	7	24,523
30-34	22	10	2	-	-	-	-	34	24,533
35-39	29	16	8	-	-	-	-	53	32,021
40-44	30	23	7	4	1	-	-	65	37,874
45-49	27	29	23	1	1	-	-	81	40,929
50-54	27	37	44	14	6	1	-	129	40,569
55-59	20	35	69	29	9	1	2	165	39,074
60-64	17	30	47	29	8	10	2	143	39,175
65 & over	-	13	28	18	9	4	3	75	43,253
Total	<u>177</u>	<u>195</u>	<u>228</u>	<u>95</u>	<u>34</u>	<u>16</u>	<u>7</u>	<u>752</u>	<u>\$38,573</u>

Average age 52.9

Average service 10.4

Age	Females - Full Years of Service to December 31, 1982							Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
Under 20	-	-	-	-	-	-	-	-	\$ -
20-24	1	-	-	-	-	-	-	1	25,098
25-29	1	2	-	-	-	-	-	3	23,114
30-34	3	2	-	-	-	-	-	5	24,436
35-39	5	1	1	-	-	-	-	7	26,125
40-44	5	4	2	-	-	-	-	11	25,409
45-49	7	6	7	-	-	-	-	20	25,254
50-54	5	1	13	-	-	-	-	19	25,621
55-59	5	8	19	2	-	-	-	34	26,269
60-64	-	2	8	-	1	-	-	11	33,311
65 & over	1	3	3	2	-	-	-	9	37,829
Total	<u>33</u>	<u>29</u>	<u>53</u>	<u>4</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>120</u>	<u>\$27,258</u>

Average age 51.4

Average service 9.0

STATE EMPLOYEES' RETIREMENT SYSTEM

I. AGE, SERVICE AND SALARY PROFILE OF ACTIVE PARTICIPANTS DECEMBER 31, 1982

ALL EMPLOYEES*

Age	Males - Full Years of Service to December 31, 1982								Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+	Total	
Under 20	63	-	-	-	-	-	-	63	\$15,909
20-24	1,897	191	-	-	-	-	-	2,088	15,073
25-29	3,132	2,165	297	-	-	-	-	5,594	17,154
30-34	2,594	3,789	3,164	189	-	-	-	9,735	19,895
35-39	1,717	2,615	4,683	2,002	99	-	-	11,116	22,469
40-44	1,135	1,335	2,475	2,346	1,079	109	-	8,479	23,763
45-49	868	1,068	1,648	1,577	1,192	824	86	7,263	24,071
50-54	864	1,159	1,596	1,485	1,091	1,080	562	7,837	23,884
55-59	800	1,091	1,790	1,556	1,155	905	987	8,284	23,261
60-64	430	725	1,186	1,200	726	459	588	5,314	22,725
65 & over	150	249	406	329	168	88	100	1,490	23,610
Total	13,650	14,387	17,244	10,684	5,510	3,465	2,323	67,263	\$22,063

Average age 43.5

Average service 12.1

Age	Females - Full Years of Service to December 31, 1982								Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30+	Total	
Under 20	188	-	-	-	-	-	-	188	\$13,078
20-24	2,713	589	-	-	-	-	-	3,302	14,292
25-29	2,946	3,206	963	-	-	-	-	7,115	15,962
30-34	2,150	2,807	3,214	391	-	-	-	8,562	17,269
35-39	1,646	1,720	1,898	1,107	123	-	-	6,494	17,882
40-44	1,387	1,451	1,320	758	482	92	-	5,490	17,851
45-49	1,068	1,264	1,392	732	403	265	39	5,163	17,892
50-54	857	1,211	1,526	1,027	485	335	215	5,656	17,899
55-59	709	1,065	1,740	1,277	714	385	327	6,217	17,893
60-64	282	586	1,104	890	432	235	190	3,719	17,768
65 & over	91	152	259	250	100	69	98	1,019	18,349
Total	14,037	14,051	13,416	6,432	2,739	1,381	869	52,925	\$17,286

Average age 41.6

Average service 10.0

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

STATE EMPLOYEES' RETIREMENT SYSTEM

II. AGE AND BENEFIT PROFILE OF INACTIVE PARTICIPANTS DECEMBER 31, 1982

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	1	\$ 3,878	1	\$ 4,113	2	\$ 7,991
50-54	111	1,260,975	4	22,543	115	1,283,518
55-59	459	5,322,738	75	783,305	534	6,106,043
60-64	3,077	20,605,630	2,341	11,487,229	5,418	32,092,859
65-69	6,958	36,306,180	4,823	19,983,022	11,781	56,289,202
70-74	6,429	30,420,915	4,160	16,936,512	10,589	47,357,427
75-79	3,900	17,734,907	2,503	9,153,229	6,403	26,888,136
80-84	1,731	7,708,787	1,149	3,991,312	2,880	11,700,099
85-89	566	2,475,693	500	1,541,020	1,066	4,016,713
90 & Over	154	703,906	185	520,988	339	1,224,894
Total	23,386	\$122,543,609	15,741	\$64,423,273	39,127	\$186,966,882

Average age 70.0
Average annual pension ...\$4,778

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	4	\$ 2,019	20	\$ 10,909	24	\$ 12,928
30-34	132	76,416	350	205,178	482	281,594
35-39	582	476,490	368	280,091	950	756,581
40-44	555	702,472	231	265,797	786	968,269
45-49	443	942,071	234	365,125	677	1,307,196
50-54	622	1,999,452	407	952,993	1,029	2,952,745
55-59	802	3,885,558	737	2,447,813	1,539	6,333,371
60-64	760	4,391,335	741	2,988,184	1,501	7,379,519
65 & Over	1,033	3,762,780	775	2,958,902	1,808	6,721,682
Total	4,933	\$16,238,593	3,803	\$10,474,992	8,796	\$26,713,585

Average age 54.6
Average annual pension....\$3,037

STATE EMPLOYES' RETIREMENT SYSTEM

II. AGE AND BENEFIT PROFILE OF INACTIVE PARTICIPANTS DECEMBER 31, 1982

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	3	\$ 9,810	4	\$ 15,441	7	\$ 25,251
30-34	24	95,047	16	58,501	40	153,548
35-39	55	242,113	40	162,101	95	404,214
40-44	85	374,302	45	177,350	130	551,652
45-49	127	619,710	71	278,673	198	898,383
50-54	266	1,415,075	136	563,037	402	1,978,112
55-59	478	2,482,726	305	1,224,025	783	3,706,751
60-64	502	2,146,924	362	1,277,429	864	3,424,353
65 & over	359	1,151,720	358	911,699	717	2,063,419
Total	<u>1,899</u>	<u>\$8,537,427</u>	<u>1,337</u>	<u>\$4,668,256</u>	<u>3,236</u>	<u>\$13,205,683</u>

Average age 58.4
 Average annual pension ... \$4,081

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>
Total	<u>998</u>	<u>\$4,257,908</u>	<u>3,483</u>	<u>\$9,847,904</u>	<u>4,481</u>	<u>\$14,105,812</u>

Average annual pension..... \$3,148

STATE EMPLOYES' RETIREMENT SYSTEM

BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1982
(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, 1982
(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.

Classes C and D-3 - Age 50.

Class E-1 - Age 60.

Class E-2 - Age 60.

* Members of Class A with 35 or more years of credited service are entitled to at least full formula benefits regardless of age.

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	
D-3	3.75	
E-1	2.	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 EMPLOYEES' RETIREMENT SYSTEM

BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1982
(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, 1982
(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, 1982
(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, 1982
(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, 1979 for annuitants who had retired prior to July 1, 1978. The increase percentages varied according to year of retirement and began with a 5% increase for those who retired between July 1, 1977 and June 30, 1978 and increased to 31% for those who retired prior to March 1, 1974. Other supplemental annuities have become effective as of July 1, 1968 and July 1, 1974.

Rate of Member Contribution

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

Class A - 5% 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%

Class D-3 - Assumed to be 18.75%

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

Class E-2 - Assumed to be 7.5%

- (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.

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.

STATE EMPLOYES' RETIREMENT SYSTEM

BENEFIT AND CONTRIBUTION PROVISIONS as of DECEMBER 31, 1982
(as embodied in Act 31, approved March 1, 1974)

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 Retire- ment**	Super- annuation Retire- ment**	
		1	5	11					
A and B (MALE)	25	.2279	.1074	.0040	.0012	.0007	.0340	-	\$ 4,000
	35	.2008	.0750	.0036	.0012	.0020	.0270	-	7,409
	45	.1649	.0498	.0033	.0039	.0051	.0160	-	11,318
	55	.1286	.0320	-	.0099	.0135	.0210	.1924	16,114
	65	-	-	-	.0251	-	-	.4329	22,727
A and B (FEMALE)	25	.1829	.1290	.0023	.0005	.0006	.0321	-	4,000
	35	.1516	.0836	.0019	.0010	.0016	.0204	-	7,409
	45	.1320	.0543	.0016	.0018	.0041	.0149	-	11,318
	55	.1280	.0353	-	.0038	.0102	.0258	.1800	16,114
	65	-	-	-	.0121	-	-	.4000	22,727
C (MALE and FEMALE)	25	.1303	.0102	.0002	.0012	.0007	.0125	-	4,000
	35	.1303	.0102	.0002	.0039	.0020	.0125	-	7,109
	45	.1303	.0102	-	.0099	.0051	.0125	-	11,221
	55	-	-	-	.0251	-	-	.0843	16,300
	65	-	-	-	.0475	-	-	.5000	22,992
D (MALE and FEMALE)	25	.0300	.0160	.0145	.0012	.0007	.0390	-	4,000
	35	.0300	.0160	.0145	.0039	.0020	.0390	-	5,642
	45	.0300	.0160	-	.0099	.0051	.0390	-	7,959
	55	-	-	-	.0251	-	-	.0700	11,227
	65	-	-	-	.0475	-	-	.2500	15,837
E (MALE and FEMALE)	25	.0950	.0200	.0070	.0012	.0007	.0183	-	4,000
	35	.0950	.0200	.0070	.0039	.0020	.0183	-	5,642
	45	.0950	.0200	.0070	.0099	.0051	.0183	-	7,959
	55	.0950	.0200	-	.0251	.0135	.0183	-	11,227
	65	-	-	-	.0475	-	-	.1000	15,837

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 (since no separate actuarial value existed as of December 31, 1981, book value was used as of that date) brought forward to reflect actual contributions, benefit payments and expenses, and assumed investment income (@ 5.5%). In 1982, 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. In subsequent years twenty (20) percent of the excess of the total return (income plus realized and unrealized capital gains) over the assumed investment income (@ 5.5%) will be recognized immediately with the remaining eighty (80) percent recognized in equal installments over the succeeding 4 years.

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.