

SOUTH CAROLINA RETIREMENT SYSTEM
REPORT OF THE ACTUARY ON
THE THIRTY-NINTH VALUATION
PREPARED AS OF JULY 1, 1990

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January 7, 1991

State Budget and Control Board
South Carolina Retirement System
Columbia, South Carolina 29211

Gentlemen:

We transmit herewith our report on the thirty-ninth actuarial valuation of the South Carolina Retirement System, prepared as of July 1, 1990.

The actuarial assumptions are, in the aggregate, reasonable, and represent our best estimate of anticipated experience under the System. The actuarial cost method utilized is the projected benefit method with level percentage entry age normal cost and open-end accrued liability. This cost method is specifically recognized as an acceptable method by the Employee Retirement Income Security Act of 1974. The current assets applicable to the System were supplied by the Retirement System office. They are valued at adjusted amortized cost.

In our opinion, the Schedule of Valuation Results included in this report correctly presents the condition of the South Carolina Retirement System as to those benefits which are funded on an actuarial reserve basis.

The valuation indicates that for Class One employers the total contribution rate payable should be 4.25 per cent of earnable compensation. For Class Two employers the contribution rates should be 7.55 per cent of earnable compensation by the State and 6.70 per cent of earnable compensation by other employers.

We trust that the report is in satisfactory form for use by the Board.

Respectfully submitted,

(Signed) DONALD M. OVERHOLSER

Donald M. Overholser
Consulting Actuary

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**REPORT ON AN ACTUARIAL VALUATION OF THE
SOUTH CAROLINA RETIREMENT SYSTEM
PREPARED AS OF JULY 1, 1990**

SECTION I - SUMMARY OF PRINCIPAL RESULTS

1. For convenience of reference, the principal results of the valuation and a comparison with the preceding valuation's results are summarized below (all dollar amounts are in thousands):

<u>Valuation Date</u>	<u>7/1/90</u>	<u>7/1/89</u>
Number of active members:		
Men	54,573	54,992
Women	<u>107,603</u>	<u>105,376</u>
Total	162,176	160,368
Annual earnable compensation of active members during year:		
Men	\$ 1,361,803	\$ 1,317,428
Women	<u>2,122,775</u>	<u>1,987,922</u>
Total	\$ 3,484,578	\$ 3,305,350
Number of retired members and beneficiaries	40,176	38,649
Annual retirement allowances	\$ 322,108	\$ 281,192
Assets for valuation purposes	\$ 6,813,695	\$ 6,068,577
Normal contribution as per cent of compensation:		
Class One Service	2.79%	2.79%
Class Two Service	3.81	3.75
Unfunded accrued liability (UAL)	\$ 2,082,758	\$ 2,070,920
UAL contribution as per cent of compensation:		
Class One Service	1.46%	1.46%
Class Two Service:		
State	3.74	3.80
Others	2.89	2.95
UAL liquidation period (years)	27	28
Pre-retirement death benefit contribution as per cent of compensation	.15%	.15%
Total contributions as per cent of compensation:		
Class One Service	4.40%	4.40%
Class Two Service:		
State	7.70	7.70
Others	6.85	6.85

2. Comments on the valuation results as of July 1, 1990 are given in Section IV and further discussion of the contribution levels is set out in Section V. The System was amended since the previous valuation to allow retirement at age 55 with 25 years' service credit and a 4% penalty for each year of credit less than 30. No COLA will be given until the second July 1st after age 60 or until 30 years of service is reached.
3. Schedule B of this report outlines the full set of actuarial assumptions and methods employed. The provisions of the System are summarized in Schedule C.

SECTION II - MEMBERSHIP DATA

1. Data needed with respect to each active member, retired member and beneficiary of the System and also with respect to terminations during the valuation year were furnished to the actuary by the Retirement System office on a magnetic tape.
2. From the data, tabulations were made showing as of July 1, 1990 the number and annual earnable compensation of active members classified by age and years of service and the number and retirement allowances of retired members and beneficiaries as of July 1, 1990 classified by age. These tabulations are presented in Schedule D.

3. The following table shows the number and annual earnable compensation of active members of the Retirement System as of July 1, 1990.

TABLE I
THE NUMBER AND EARNABLE COMPENSATION OF ACTIVE MEMBERS
AS OF JULY 1, 1990

GROUP	MEN	WOMEN	TOTAL
EMPLOYEES			
Number	41,838	52,229	94,067
Earnable Compensation (\$1,000's)	\$ 1,027,476	\$ 993,925	\$ 2,021,401
TEACHERS			
Number	12,735	55,374	68,109
Earnable Compensation (\$1,000's)	\$ 334,327	\$ 1,128,850	\$ 1,463,177
TOTAL			
Number	54,573	107,603	162,176
Earnable Compensation (\$1,000's)	\$ 1,361,803	\$ 2,122,775	\$ 3,484,578

NOTE: There are in addition 101,704 inactive members. The results of the valuation were adjusted to take these members into account.

4. The following table shows the number and annual amount of retirement allowances payable to retired members and to beneficiaries of deceased retired and active members as of July 1, 1990.

TABLE II
THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF
RETIRED MEMBERS AND BENEFICIARIES ON THE ROLL
AS OF JULY 1, 1990

GROUP	NUMBER	TOTAL ANNUAL RETIREMENT ALLOWANCES (\$1,000'S)
<u>Service Retirements</u>		
Employees:		
Men	8,210	\$ 78,308
Women	6,756	44,321
Teachers:		
Men	3,412	38,374
Women	<u>14,568</u>	<u>116,768</u>
Total	<u>32,946</u>	<u>\$ 277,771</u>
<u>Disability Retirements</u>		
Employees:		
Men	1,412	\$ 9,024
Women	1,094	6,595
Teachers:		
Men	428	3,452
Women	<u>1,178</u>	<u>8,146</u>
Total	<u>4,112</u>	<u>\$ 27,217</u>
<u>Beneficiaries of Deceased Retired Members and Active Members</u>		
Men	467	\$ 2,356
Women	<u>2,651</u>	<u>14,674</u>
Total	<u>3,118</u>	<u>\$ 17,030</u>
Grand Total	<u>40,176</u>	<u>\$ 322,018</u>

SECTION III - ASSETS

The amounts of the present assets taken into account in this valuation are at adjusted amortized cost. The values of the assets were taken from a statement furnished by the Director of the System and exclude reserve assets creditable to the Group Life Insurance Fund for pre-retirement lump sum death benefits.

Included in the valuation are the assets of the employee annuity savings fund which represent the accumulated contributions of members together with interest thereon. As of July 1, 1990, these assets amounted to \$1,812,178,000.

Also included in the valuation are the assets of the employer annuity accumulation fund to which the contributions made by employers are credited and from which are paid all benefits on account of retired members and their beneficiaries. The assets of the accumulation fund amounted to \$5,001,517,000 as of July 1, 1990.

SECTION IV - COMMENTS ON THE VALUATION

Schedule A of this report contains the results of the valuation which show present and prospective assets and liabilities of the System as of July 1, 1990. The following comments on the valuation are pertinent (all dollar amounts are in thousands):

The schedule shows that the System has actuarial liabilities of \$12,723,609, of which \$3,509,959 is for the prospective benefits payable on account of present retired members and beneficiaries and \$9,213,650 is for the prospective benefits payable on account of present active and inactive members. These liabilities include the reserves for all current and future cost-of-living increases to current retired members and beneficiaries and active members currently eligible for service retirement. Against these liabilities, the System has present assets of \$6,813,695 and anticipated future contributions by members of \$2,339,589 leaving a balance of \$3,570,325 to be provided by future contributions of the employers. Of this amount, \$1,487,567 represents the present value of normal contributions by the employers and the balance of \$2,082,758 represents the present value of unfunded accrued liability contributions.

The retirement act provides that the contributions of employers shall consist of a normal contribution to cover the liability on account of service currently rendered and an unfunded accrued liability contribution on account of liabilities for past service which are not covered by present assets.

The following rates of contribution are payable by employers exclusive of the rate required for the pre-retirement lump sum death benefit:

For Class One employers, the total employer contribution rate should be 4.25 per cent of earnable compensation, of which 2.79 per cent is attributable to the normal contribution and 1.46 per cent is attributable to the unfunded accrued liability contribution for the period July 1, 1990 to June 30, 1991.

For Class Two employers, the total contribution rate should be 7.55 per cent payable by the State and 6.70 per cent by other employers. Of the total rates, 3.81 per cent is attributable to normal contributions of the State and other employers. The unfunded accrued liability rates are therefore 3.74 per cent for the State and 2.89 per cent for other employers for the period July 1, 1990 to June 30, 1991.

On the basis of the above unfunded accrued liability contribution rates and assuming that active payroll will increase by 4% each year, it is anticipated that the unfunded accrued liability of \$2,082,758 shown in the valuation balance sheet will be liquidated within a period of approximately 27 years from the valuation date.

We recommend that the rate for employers participating in the Pre-retirement Death Benefit Program remain at .15 per cent of earnable compensation in addition to the appropriate rate above.

SECTION V - CONTRIBUTIONS PAYABLE UNDER THE SYSTEM

The following table gives the rates of contribution payable by employers, as determined on the basis of the present valuation.

RATES OF CONTRIBUTION	CLASS ONE	CLASS TWO	
		STATE	OTHERS
Normal	2.79%	3.81%	3.81%
Unfunded Accrued Liability	1.46	3.74	2.89
Pre-retirement Death Benefit	<u>.15</u>	<u>.15</u>	<u>.15</u>
Total	4.40%	7.70%	6.85%

SECTION VI - VALUATION BASIS

The valuation of the Retirement System was made on the basis of the rates of separation and mortality tables adopted by the Board on December 14, 1989 and a salary scale and interest rate of 8% adopted by the Board on July 18, 1989. An outline of the actuarial assumptions and methods employed is presented in Schedule B.

SECTION VII - ACCOUNTING INFORMATION

1. Governmental Accounting Standards Board Statement No. 5 sets forth certain items of information to be disclosed in the financial statements of the System and the employer. One such item is a distribution of the number of employees by type of membership, as follows:

**NUMBER OF ACTIVE AND RETIRED MEMBERS
AS OF JULY 1, 1990**

GROUP	NUMBER
Retirees and beneficiaries currently receiving benefits and terminated employees entitled to benefits but not yet receiving benefits	141,880
Active Members:	
Vested	99,068
Non-vested	<u>63,108</u>
Total Actives	162,176

2. Another such item is the pension benefit obligation, a standardized measure of the System's liabilities. It is the amount owed for benefits allocated to employee service before the balance sheet date, when total projected benefits (including the effects of projected salary increases) are allocated equally over all years of employee service before and after the balance sheet date. The pension benefit obligation, prepared in accordance with Governmental Accounting Standards Board Statement No. 5, and a comparison with net assets available for benefits as of July 1, 1990 are presented below. The amounts

shown reflect post-retirement increases in allowances already granted and at 4 per cent per year in the future for all retired and active members.

Pension Benefit Obligation
(in \$ thousand)

• Retirees and beneficiaries currently receiving benefits and terminated employees entitled to benefits but not yet receiving benefits	\$ 3,739,877
• Current employees:	
Accumulated contributions	1,697,791
Employer-financed vested	858,893
Employer-financed nonvested	<u>3,200,152</u>
Total Pension Benefit Obligation	\$ 9,496,713
• Net assets available for benefits	\$ 6,813,695
• Unfunded Pension Benefit Obligation	\$ 2,683,018

3. The following first five years of the ten-year historical trend information, prepared in accordance with Governmental Accounting Standards Board Statement No. 5, provides information on progress made in accumulating sufficient assets to pay benefits when due. A purpose of the chart is to establish a consistent method for analyzing and making comparisons among different public retirement systems.

Required Supplementary Information Analysis of Funding Progress
(in \$ million)

	(1)	(2)	(3)	(4)	(5)	(6)
Fiscal Year Beginning	Net Assets Available for Benefits	Pension Benefit Obligation	Percent-age Funded (1) ÷ (2)	Unfunded Pension Benefit Obligation (2) - (1)	Annual Covered Payroll	Unfunded PBO as % of Covered Payroll (4) ÷ (5)
7/1/86	\$4,202.4	\$5,747.5	73.1%	\$1,545.1	\$2,634.4	58.7%
7/1/87	4,805.4	6,447.5	74.5	1,642.1	2,796.5	58.7
7/1/88	5,413.7	7,377.8	73.4	1,964.1	3,023.4	65.0
7/1/89	6,068.6	8,646.1	70.2	2,577.5	3,305.4	78.0
7/1/90	6,813.7	9,496.7	71.7	2,683.0	3,484.6	77.0

Analysis of the dollar amounts of net assets available for benefits, pension benefit obligation, and unfunded pension benefit obligation in isolation can be misleading. Expressing the net assets available for benefits as a percentage of the pension benefit obligation provides one indication of the Retirement System's funding status on a going-concern basis. Analysis of this percentage over time indicates whether the System is becoming financially stronger or weaker. Generally, the greater this percentage, the stronger the Retirement System.

SCHEDULE A**RESULTS OF THE VALUATION AS OF JULY 1, 1990**
(All dollar amounts are in thousands)

(1) Actuarial liabilities	
Present value of prospective benefits payable in respect of:	
(a) Present retired members and beneficiaries	\$ 3,509,959
(b) Present active and inactive members	<u>9,213,650</u>
(c) Total actuarial liabilities	\$ 12,723,609
(2) Assets of the System	<u>6,813,695</u>
(3) Present value of future contributions = (1)(c) - (2)	\$ 5,909,914
(4) Present value of future contributions by members	<u>2,339,589</u>
(5) Present value of future contributions by employers = (3) - (4)	\$ 3,570,325
(6) Present value of future normal contributions by employers	\$ 1,487,567
(7) Present value of unfunded accrued liability contributions by employers = (5) - (6)	\$ 2,082,758
(8) Unfunded accrued liability rates	
(a) Class One Service	1.46%
(b) Class Two Service: State	3.74
(c) Class Two Service: Others	2.89
(9) Unfunded accrued liability liquidation period	27 years
(10) Pre-retirement death benefit contribution rate	.15%

SCHEDULE B**OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS**

INTEREST RATE: 8% per annum, compounded annually.

SEPARATIONS FROM SERVICE AND SALARY INCREASES: Representative values of the assumed annual rates of separation and annual rates of salary increase are as follows:

Annual Rates of								
Age	<u>With- drawal</u>	<u>Death</u>	<u>Dis- ability</u>	<u>Service Retire- ment*</u>	<u>With- drawal</u>	<u>Death</u>	<u>Dis- ability</u>	<u>Service Retire- ment*</u>
<u>Men Teachers</u>				<u>Women Teachers</u>				
20	11.11%	.04%	.01%		13.79%	.03%	.02%	
25	9.97	.05	.01		12.83	.03	.03	
30	7.91	.08	.02		9.12	.04	.04	
35	6.06	.12	.03		5.61	.06	.04	
40	4.67	.18	.06		3.43	.08	.07	
45	3.67	.25	.11		2.33	.13	.12	
50	2.83	.35	.20	5.00%	1.74	.20	.20	5.00%
55	2.03	.50	.34	5.00	1.18	.29	.35	5.00
60		.70	.59	10.00		.45	.61	15.00
64		.92	.94	20.00		.66	.82	20.00

Age	<u>Withdrawal</u>	<u>Death</u>	<u>Disability</u>	<u>Service Retirement*</u>	<u>Salary Increase</u>
<u>Employees</u>				<u>Teachers and Employees</u>	
	<u>Men</u>	<u>Women</u>			
20	13.94%	12.55%	.07%	.04%	11.81%
25	12.46	11.21	.09	.04	10.90
30	9.78	8.80	.11	.06	9.50
35	7.38	6.64	.14	.08	7.81
40	5.57	5.01	.18	.10	7.00
45	4.27	3.84	.28	.15	6.60
50	3.18	2.86	.46	.25	6.30
55	2.14	1.93	.75	.40	6.10
60			1.08	.61	5.90
64			1.36	.85	5.80

*Plus 0.15 in year when first eligible for unreduced early retirement.

DEATHS AFTER RETIREMENT: 1971 Group Annuity Mortality Tables, rated back one year, for service retirement and dependent beneficiaries. A special mortality table is used for disability retirements.

LOADING OR CONTINGENCY RESERVES: None.

VALUATION METHOD: Projected benefit with level percentage entry age normal cost and open-end unfunded accrued liability. Gains and losses are reflected in the period remaining to liquidate the unfunded accrued liability. Lump sum death benefits are provided on a one-year term cost basis.

ASSET VALUATION METHOD: Adjusted amortized cost.

COST-OF-LIVING INCREASES: For funding purposes, 4% per year for current retirees and active members eligible to retire; for GASB, 4% per year after assumed retirement for all members.

SCHEDULE C**SUMMARY OF MAIN SYSTEM PROVISIONS AS
INTERPRETED FOR VALUATION PURPOSES****BACKGROUND**

The South Carolina Retirement System was established as of July 1, 1945. There are two classes of employers and members under the System. Those employers becoming participants in the System on or after July 1, 1964 are Class Two employers. Class One employers include all employers who elected, by written notice to the Board not later than December 31, 1964, to remain and have their members remain under the provisions of the System as in effect on June 30, 1964. Class Two employers include all employers who elect, by written notice to the Board in allowable election periods, to participate and have their members participate as Class Two members provided such employers and employees in their employ make additional required contributions.

A summary of the main benefit provisions of the System, as interpreted in preparing the actuarial valuation, and a summary of the sources of revenue from which benefits are paid is presented in the following digest. "Average final compensation" means the average annual earnable compensation of a member during the twelve consecutive quarters of his creditable service producing the highest such average. "Prior service" means service prior to July 1, 1945 for which credit is allowed. "Membership service" means service rendered while a member of the System for which credit is allowed. The term "creditable service" means the sum of prior service and membership service.

BENEFITS

Service Retirement Allowance

Condition for Retirement

A retirement allowance is payable upon the request of any teacher or employee who has met one of the following conditions:

- a) rendered 30 or more years of creditable service,
- b) attained age 60,
- c) attained age 55 and rendered 25 or more years of creditable service.

Amount of Allowance

A Class One member receives a retirement allowance equal to 1.45% of average final compensation, multiplied by the number of years of his creditable service.

A Class Two member receives a retirement allowance equal to 1.82% of average final compensation, multiplied by the number of years of his creditable service.

If a member retiring under condition (b) above has not attained age 65 or completed 30 years of creditable service at the time of retirement, his allowance is reduced 5/12 of 1% for each month by which his age at retirement is less than age 65.

If a member retiring under condition (c) above has not completed 30 years of service at the time of retirement, his allowance is reduced by 4/12 of 1% for each month of service credit less than 30 years.

Disability Retirement Allowance

Condition for Allowance

A disability retirement allowance is payable to any member who while in service becomes permanently incapacitated for duty mentally or physically.

Amount of Allowance

Upon disability retirement, on or after July 1, 1976, a Class One or a Class Two member receives a service retirement allowance if he has attained age 65; otherwise he receives a disability retirement allowance equal to the service retirement allowance which would have been payable had he continued in service to age 65, minus the actuarial equivalent of the contributions he would have made during such continued service. The compensation to be used for purposes of computing this benefit is the average final compensation as of the date of disability.

**Deferred Retirement
Allowance**

Condition for Allowance

A deferred retirement allowance, commencing at age 60, is payable to any member who ceases to be a teacher or an employee after he has rendered at least 5 years of creditable service, provided he leaves his contributions in the System.

Amount of Allowance

The deferred retirement allowance is computed like a service retirement allowance, except that the employee annuity is the actuarial equivalent at age 60 of the member's contributions with such interest credits as are allowed.

**Supplemental Minimum
Allowance**

Upon retirement after 20 or more years of creditable service a supplemental monthly sum is paid, in addition to the regular allowance and any amount provided from the general funds of the State, to provide a minimum of \$150 per month plus \$1 per month for each completed year of service in excess of 20, reduced by $\frac{5}{12}$ of 1% for each month by which the member's age at retirement is less than age 65 unless he has completed 35 years of creditable service.

**Return of Contributions and
Optional Death Benefit**

Upon the withdrawal of a member without a retirement benefit, he is paid his total contributions with the accumulated regular interest thereon.

Upon the death of a member before retirement, his accumulated contributions are payable to his designated beneficiary or to his estate.

Upon the death of a member before retirement who had 30 years of creditable service or had attained age 65, or who had 20 years of creditable service and attained age 60, the person nominated to receive the amount of the member's accumulated contributions may elect to receive, in lieu of such accumulated contributions, an allowance for life in an amount as if the member had retired on the date of his death under Option 2 as described below. If such a person has received a refund of the member's accumulated contributions, he may, upon repayment of such refund in a single sum, receive the allowance under Option 2 from the time of the repayment of the contributions to the System.

Upon the death of a member before retirement who had 15 years of creditable service, the person nominated to receive the amount of the member's accumulated contributions may elect to receive, in lieu of such accumulated contributions, an allowance for life in an amount as if the member had

retired on the date of his death and had elected for payments to commence at age 60 under Option 2 as described below. The compensation to be used for purposes of computing this benefit is the average final compensation as of the date of death.

Upon the death of a retired member who has not elected an optional form of allowance, a lump sum amount equal to the excess, if any, of his total accumulated contributions at the time his retirement allowance commenced over the sum of the retirement allowance payments made to him, is paid to his designated beneficiary or estate.

Lump Sum Death Benefit

Upon the death of a contributing member in service after the completion of one year of membership service or at any time if death is a result of an injury arising out of and in the course of the performance of duty, a lump sum equal to the member's annual earnable compensation at the time of death is paid to the person he has nominated for the refund of his accumulated contributions or estate, provided the member's employer is a participant in the Pre-retirement Death Benefit Program. Benefits under this program are to be provided in the form of group life insurance.

Optional Allowance

Until the first payment on account of any benefit becomes normally due, any member may elect to receive his retirement allowance in accordance with one of the following forms, which are computed to be actuarially equivalent:

Option 1. A reduced retirement allowance payable during the retired member's life, with the provision that, if he dies within 10 years from his retirement date, an amount equal to his accumulated contributions at retirement, less 1/120 for each month he received a retirement allowance payment, shall be paid to a designated person.

Option 2. A reduced retirement allowance payable during the retired member's life, with the provision that after his death the reduced retirement allowance is to be continued to a designated beneficiary.

Option 3. A reduced retirement allowance payable during the retired member's life, with the provision that after his death one-half the reduced retirement allowance is to be continued to a designated beneficiary.

Option 4. A retirement allowance in such amount that, together with his Social Security benefit, he will receive approximately the same income per annum before and after the earliest age at which he is eligible for a Social Security benefit. A member who makes an election of this Option 4 shall be deemed to have made a further election of Option 1.

Option 5. A member may elect Option 2 or Option 3 with the added provision that in the event the designated beneficiary predeceases the member, the retirement allowance payable to the member after the designated beneficiary's death shall be equal to the retirement allowance which would have been payable had the member not elected the option.

**Post-Retirement
Increases in Allowances**

If the increase in the Consumer Price Index for the previous year ending December 31 equals or exceeds 3%, the retirement allowance of each beneficiary in receipt of an allowance for at least one year as of the following July 1 is to be increased by 4%. Any increase in allowance granted hereunder through July 1, 1980 is to be permanent, irrespective of any subsequent decrease in the Consumer Price Index, and is to be included in determining any subsequent increase. No increase will be granted on a service retirement allowance until the second July 1st after the member attains age 60 or would have completed 30 years of creditable service.

The allowance of a surviving annuitant of a beneficiary whose allowance is increased under this section is to be increased by the same percent, when and if payable.

CONTRIBUTIONS

By Members

Class One members contribute at the rate of 5% of earnable compensation, and Class Two members contribute at the rate of 6% of earnable compensation.

By Employers

Employers make annual contributions consisting of a "normal contribution" and an "accrued liability contribution". The "normal contribution" rate is determined by the actuary after each valuation. The "accrued liability contribution" rate is determined by the first actuarial valuation of the System, provided, however, that such rate shall be increased on the basis of subsequent valuations if benefits are increased. Such rate may be decreased if the actuary engaged by the Board certifies that such reduction will not impair the System. Each year's accrued liability payment is to be at least 3% greater than the preceding annual accrued liability payment subject to the preceding sentence. On and after July 1, 1946, all employers' contributions for teachers are paid by the State.

SCHEDULE D

TABLE 1

THE NUMBER AND EARNABLE COMPENSATION
OF MEMBERS DISTRIBUTED BY
AGE AS OF JULY 1, 1990

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
16	5	\$ 14,929	1	\$ 527
17	6	38,520	8	31,293
18	28	160,728	21	95,679
19	121	1,178,704	92	758,601
20	274	2,863,944	237	2,200,612
21	396	4,514,521	419	4,490,783
22	489	5,969,786	644	7,477,785
23	659	8,835,614	1,238	17,942,222
24	786	11,508,264	1,676	25,871,153
25	922	14,384,254	1,985	32,020,854
26	1,092	18,035,744	2,230	37,593,499
27	1,282	21,846,216	2,539	43,940,410
28	1,233	22,123,433	2,663	47,234,743
29	1,300	23,895,796	2,848	51,704,655
30	1,356	26,316,524	2,815	50,759,079
31	1,377	26,930,938	2,932	53,175,805
32	1,468	30,607,805	3,006	56,267,630
33	1,599	32,754,051	3,438	63,815,959
34	1,623	34,923,622	3,549	68,621,774
35	1,555	35,337,580	3,688	72,387,730
36	1,639	37,832,613	3,991	79,016,039
36	1,639	37,832,613	3,991	79,016,039
37	1,695	40,886,935	3,949	79,674,493
38	1,789	44,890,688	4,170	86,506,555
39	1,769	45,603,594	4,074	85,514,614
40	1,787	47,371,354	4,097	88,169,655
41	1,917	52,602,784	3,982	86,500,519
42	1,880	52,943,312	3,944	84,899,052
43	2,009	58,005,157	4,257	93,582,508
44	1,818	54,015,682	3,681	79,888,008
45	1,480	43,727,787	2,938	63,158,506
46	1,479	43,769,138	2,918	62,435,192
47	1,422	44,343,960	2,885	61,659,553
48	1,337	40,379,559	2,674	56,867,602
49	1,219	37,133,791	2,369	50,712,561
50	1,208	37,598,084	2,150	45,630,750
51	1,088	32,559,278	2,007	41,804,642
52	1,151	35,526,254	1,897	39,975,482
53	997	28,822,217	1,772	36,640,865
54	1,020	29,575,509	1,632	32,400,209
55	965	28,018,027	1,623	31,969,121

TABLE 1
THE NUMBER AND EARNABLE COMPENSATION
OF MEMBERS DISTRIBUTED BY
AGE AS OF JULY 1, 1990

CONTINUED

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
56	939 \$	28,398,787	1,517 \$	29,739,842
57	930	26,354,540	1,387	27,288,946
58	929	25,402,250	1,411	27,404,769
59	771	22,065,945	1,235	23,459,105
60	814	22,374,341	1,098	20,657,932
61	703	19,629,036	930	17,621,246
62	533	14,430,340	806	15,158,544
63	410	11,302,212	632	12,074,226
64	327	9,425,031	430	7,675,119
65	244	6,813,435	338	5,995,966
66	148	4,483,319	237	4,291,253
67	124	2,942,063	146	2,363,672
68	112	2,712,754	122	1,841,483
69	100	3,035,047	83	1,080,506
70	63	1,505,348	67	1,068,537
71	53	1,002,684	41	565,329
72	41	856,463	39	572,922
73	23	319,272	19	254,427
74	24	378,480	17	198,991
75	14	123,574	4	39,408
76	6	54,949	4	22,939
77	7	95,841	1	2,838
78	4	135,160		
79	6	89,529		
80	2	5,453		
82	2	10,097		
83	2	3,306		
84	1	4,572		
85	1	2,182		

TOTAL 54,573 \$1,361,802,706 107,603 \$2,122,774,719

SUMMARY

EMPLOYEES	41,838	\$1,027,475,491	52,229	\$	993,925,052
TEACHERS	12,735	\$	334,327,215	55,374	\$1,128,849,667

SEE FOOTNOTE TABLE I

TABLE 2

THE NUMBER AND EARNABLE COMPENSATION
OF MEMBERS DISTRIBUTED BY
YEARS OF CREDITED SERVICE AS OF JULY 1, 1990

YEARS OF SERVICE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
0	2,857	\$ 34,331,433	4,611	\$ 51,700,280
1	6,003	98,405,483	12,225	182,274,952
2	4,686	86,072,628	9,860	155,643,060
3	3,705	73,898,587	7,354	124,718,346
4	3,382	74,648,962	6,381	113,657,234
5	3,046	69,105,481	6,160	112,397,419
6	2,758	65,575,415	6,058	114,679,029
7	2,128	50,344,663	4,085	79,858,146
8	1,631	40,742,317	3,439	70,238,019
9	1,848	47,778,746	3,746	78,405,849
10	1,766	47,071,371	3,865	79,740,747
11	2,021	53,096,210	4,414	89,750,108
12	1,825	50,712,026	4,083	87,774,650
13	1,568	44,353,594	3,471	76,186,884
14	1,429	41,073,343	3,155	70,928,682
15	1,265	39,236,268	3,010	69,821,737
16	1,547	48,204,736	3,327	79,566,307
17	1,510	48,507,447	2,953	71,950,768
18	1,347	45,921,259	2,545	64,352,780
19	1,155	40,569,654	2,243	57,249,375
20	1,022	35,295,859	1,900	48,862,206
21	923	32,029,708	1,621	42,719,375
22	746	26,554,449	1,303	34,632,748
23	638	22,689,170	1,074	28,547,902
24	577	20,746,299	939	25,350,328
25	535	19,321,254	710	20,538,210
26	431	16,376,665	620	17,908,276
27	387	15,037,743	523	15,439,670
28	336	12,630,733	437	12,636,349
29	280	10,756,486	369	10,827,887
30	287	10,911,127	336	9,973,226
31	196	7,957,887	189	5,775,816
32	154	6,433,127	101	3,076,879
33	120	4,878,436	102	3,288,714
34	110	4,859,655	110	3,488,313
35	87	3,991,510	74	2,219,087

TABLE 2
THE NUMBER AND EARNABLE COMPENSATION
OF MEMBERS DISTRIBUTED BY
YEARS OF CREDITED SERVICE AS OF JULY 1, 1990

CONTINUED

YEARS OF SERVICE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
36	58	\$ 2,458,054	50	\$ 1,680,938
37	50	2,099,471	36	1,024,262
38	37	1,406,840	29	907,342
39	35	1,365,332	34	1,016,605
40	23	1,128,388	18	568,114
41	21	941,715	15	473,048
42	12	655,417	7	305,360
43	7	416,720	8	225,670
44	8	349,104	6	180,296
45	5	247,073		
46	4	137,540		
47	3	233,976	2	63,014
48	1	64,744	2	57,826
49	2	148,943		
51			1	21,568
52	1	29,658	2	71,318
TOTAL	54,573	\$1,361,802,706	107,603	\$2,122,774,719

SUMMARY

EMPLOYEES	41,838	\$1,027,475,491	52,229	\$ 993,925,052
TEACHERS	12,735	\$ 334,327,215	55,374	\$1,128,849,667

SEE FOOTNOTE TABLE I

TABLE 3

THE DISTRIBUTION OF THE NUMBER AND ANNUAL
RETIREMENT ALLOWANCES OF RETIRED MEMBERS
AND BENEFICIARIES BY AGE AS OF JULY 1, 1990

SERVICE RETIREMENTS AND BENEFICIARIES

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
8			2 \$	13,183
9			2	7,730
10	2 \$	4,704	1	9,902
11			3	7,640
12	1	2,078	4	21,796
13	1	4,449	1	6,658
14	1	2,647	1	4,832
15	1	2,522	2	12,783
17			1	4,392
18	1	3,378	3	16,739
19			3	14,348
20	1	2,479	4	26,332
21	4	19,373	4	22,859
22	3	15,648	4	14,363
23	4	30,219	2	8,069
24			6	17,285
25	2	7,897	5	25,704
26	4	8,817	3	25,370
27	2	13,513	2	11,952
28	3	9,070	6	29,400
29	2	11,746	4	6,118
30	2	11,395	1	5,385
31	4	10,172	4	5,636
32	3	14,287	3	8,081
33	4	23,113	6	35,359
34	4	25,538	5	37,128
35	3	11,840	6	34,161
36	7	32,257	3	9,188
37	4	19,957	9	51,401
38	4	32,254	11	65,182
39	6	28,246	17	86,360
40	4	11,881	8	33,141
41	5	27,229	5	15,234
42	14	49,816	11	59,040
43	9	50,917	13	76,536
44	7	38,959	17	61,631
45	4	17,626	13	74,590
46	2	5,083	9	78,643
47	9	44,899	14	77,523
48	12	65,982	16	90,780
49	7	68,471	27	188,385

TABLE 3

THE DISTRIBUTION OF THE NUMBER AND ANNUAL
RETIREMENT ALLOWANCES OF RETIRED MEMBERS
AND BENEFICIARIES BY AGE AS OF JULY 1, 1990

SERVICE RETIREMENTS AND BENEFICIARIES

CONTINUED

AGE	NUMBER	MEN AMOUNT	WOMEN NUMBER	AMOUNT
50	24	\$ 347,550	26	\$ 249,474
51	25	383,068	29	376,874
52	39	719,726	49	470,519
53	56	1,045,837	63	912,903
54	64	1,231,346	85	1,162,549
55	91	1,750,817	153	2,508,504
56	110	2,216,570	145	2,353,002
57	136	2,715,953	197	3,054,698
58	174	3,634,931	236	3,786,754
59	148	3,263,022	256	4,180,932
60	173	3,249,299	344	5,216,067
61	234	4,298,825	475	6,258,060
62	327	4,076,521	649	5,877,184
63	433	4,297,011	860	6,216,296
64	492	5,218,110	919	7,039,437
65	547	5,829,150	993	7,672,949
66	681	6,885,086	1,134	7,789,493
67	644	6,418,659	1,084	7,520,721
68	689	6,396,880	1,197	8,186,118
69	697	6,508,150	1,136	7,159,122
70	663	5,848,283	1,154	7,655,258
71	542	4,914,968	1,062	7,113,786
72	575	4,711,477	908	5,680,863
73	494	4,208,412	909	5,705,024
74	505	4,035,493	946	5,665,201
75	453	3,635,865	831	5,347,658
76	409	2,813,626	805	5,221,751
77	381	2,812,620	751	4,620,634
78	336	2,174,697	771	4,821,902
79	312	2,108,049	713	4,413,844
80	268	1,872,364	668	3,985,321
81	237	1,734,238	619	4,208,510
82	198	1,565,085	604	3,819,467
83	154	1,054,390	520	3,528,671
84	148	1,069,372	435	2,872,820
85	104	781,673	376	2,417,965
86	93	636,465	336	2,250,531
87	70	436,397	269	1,610,011
88	59	346,552	238	1,274,040

TABLE 3

**THE DISTRIBUTION OF THE NUMBER AND ANNUAL
RETIREMENT ALLOWANCES OF RETIRED MEMBERS
AND BENEFICIARIES BY AGE AS OF JULY 1, 1990**

SERVICE RETIREMENTS AND BENEFICIARIES

CONTINUED

AGE	NUMBER	MEN AMOUNT	WOMEN NUMBER	AMOUNT
89	39	\$ 332,252	183	\$ 1,076,577
90	37	217,173	142	759,873
91	17	94,708	108	510,771
92	19	163,617	95	526,308
93	14	91,903	57	279,992
94	11	54,113	41	222,819
95	6	28,395	43	228,182
96	1	1,819	34	181,440
97	3	18,245	19	91,562
98			20	115,071
99	3	6,322	11	68,558
100	2	30,117	7	39,983
101	3	19,856	3	25,371
102			4	22,877
103	1	805	1	1,485
104	1	614	1	6,035
105	1	2,894		
TOTAL	12,089	\$119,037,832	23,975	\$175,762,656

SUMMARY

LIFE ANNUITY	4,914	\$ 37,022,432	15,643	\$105,092,636
CASH REFUND	1,034	9,394,028	1,502	11,705,549
100% J+S	1,666	15,546,293	476	2,479,038
50% J+S	1,328	17,777,069	381	3,261,061
SOC. SEC. LEVELING	1,351	21,391,583	2,759	33,048,941
BENEFICIARIES	467	2,355,599	2,651	14,674,377
100% POP-UP	694	6,695,886	237	1,974,781
50% POP-UP	635	8,854,942	326	3,526,273

TABLE 4

**THE DISTRIBUTION OF THE NUMBER AND ANNUAL
RETIREMENT ALLOWANCES OF RETIRED MEMBERS BY
AGE AS OF JULY 1, 1990**

DISABILITY RETIREMENTS

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
26	1 \$	498		
28	1	3,501	1 \$	2,161
29	2	5,778		
30	1	3,807	2	5,733
31	2	5,024	1	4,276
32			4	19,587
33	3	10,041	1	3,288
34	2	7,598	5	20,164
35	8	37,622	9	57,284
36	13	47,504	12	49,010
37	7	23,265	11	79,301
38	5	24,208	14	72,624
39	12	51,388	12	107,864
40	11	68,795	18	115,275
41	13	83,091	13	64,242
42	17	99,554	21	123,169
43	14	84,037	22	153,685
44	20	126,268	28	177,283
45	13	76,754	23	170,543
46	20	129,107	20	110,832
47	22	157,189	25	221,169
48	20	181,540	31	162,145
49	28	196,278	28	173,489
50	23	153,949	28	190,491
51	22	137,984	24	171,227
52	39	264,086	27	158,924
53	44	319,759	38	259,386
54	43	375,651	35	268,862
55	39	282,516	54	287,052
56	49	348,611	53	414,546
57	45	386,380	69	453,356
58	59	408,220	68	413,860
59	66	481,158	73	538,572
60	84	650,380	79	515,779
61	69	454,682	79	488,361
62	91	591,070	108	671,595
63	89	593,346	114	764,987
64	82	538,827	100	734,158
65	94	690,043	105	701,631
66	73	515,233	91	622,344

TABLE 4

**THE DISTRIBUTION OF THE NUMBER AND ANNUAL
RETIREMENT ALLOWANCES OF RETIRED MEMBERS BY
AGE AS OF JULY 1, 1990**

DISABILITY RETIREMENTS

CONTINUED

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
67	74	\$ 542,304	95	\$ 597,252
68	59	393,795	96	573,518
69	89	585,377	98	645,095
70	69	512,285	86	654,241
71	76	454,395	91	551,631
72	54	324,775	74	429,532
73	36	254,234	77	503,702
74	42	282,887	63	344,879
75	31	188,331	52	364,426
76	32	161,284	40	229,539
77	23	124,614	37	208,599
78	3	8,631	8	44,922
79	3	13,082	4	24,730
80	1	4,203	2	8,170
81	1	816	1	1,838
83			1	5,729
88			1	5,521
103	1	9,977		
TOTAL	1,840	\$ 12,475,732	2,272	\$ 14,741,579

SUMMARY

LIFE ANNUITY	1,004	\$ 6,986,845	1,859	\$ 12,077,010
CASH REFUND	172	1,278,780	166	1,270,318
100% J+S	330	1,678,638	137	643,544
50% J+S	165	1,393,878	60	415,159
SOC. SEC. LEVELING			1	338
100% POP-UP	83	456,852	24	119,337
50% POP-UP	86	680,739	25	215,873

**BUCK
CONSULTANTS**

200 Galleria Parkway, N.W. Suite 1200
Atlanta, Georgia 30339

January 7, 1991

Mr. Purvis W. Collins
Director
South Carolina Retirement System
P. O. Box 11960 - Capitol Station
Columbia, South Carolina 29211

Dear Mr. Collins:

We are enclosing six copies of the "South Carolina Retirement System Report of the Actuary on the Thirty-Ninth Valuation Prepared as of July 1, 1990". The signed bound copy will be sent to you shortly.

Based on current employer and employee contribution rates, it is expected that the present unfunded accrued liability will be liquidated within approximately 27 years from July 1, 1990.

If you have any questions concerning the report, please contact us.

Sincerely yours,



Donald M. Overholser
Consulting Actuary

DMO:lt
Enc.