SOUTH CAROLINA RETIREMENT SYSTEM

REPORT OF THE ACTUARY ON THE EIGHTEENTH ANNUAL VALUATION

Prepared as of June 30, 1963

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February 12, 1965

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

#### Gentlemen:

I transmit herewith my report on the eighteenth actuarial valuation of the South Carolina Retirement System, prepared as of June 30, 1963.

The valuation indicates that the total contribution rate payable on account of teachers may be continued at 6.17 per cent of earnable compensation and on account of employees at 3.98 per cent of earnable compensation.

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

Respectfully submitted,

Actuary

# REPORT OF THE ACTUARY ON THE EIGHTEENTH ANNUAL VALUATION OF THE SOUTH CAROLINA RETIREMENT SYSTEM

The South Carolina Retirement System was established as of July 1, 1945. The system is supported by the joint contributions of members and employers. The contributions to be made by employers are to be set from time to time on the basis of periodic actuarial valuations.

This report presents the results of an actuarial valuation of the contingent assets and liabilities of the system as of June 30, 1963, and gives the percentage rates of contribution payable by employers as determined on the basis of the valuation. Appended to the report are tables showing the distribution of the members classified by age and by years of service, and of retired members and beneficiaries classified by age.

# SUMMARY OF MAIN BENEFIT AND CONTRIBUTION PROVISIONS

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. Under the act, "out-of-State service" means continuous service rendered by a member of the system for any state other than the State of South Carolina, excluding any such service rendered after he first became eligible for membership in the system or which terminated more than six months prior to the inception of his service within the State of South Carolina. Out-of-State service is not considered creditable service, nor is it taken into account in determining the eligibility for any benefit under the system. Any member may elect to become entitled to a special annuity on account of his out-of-State service by making a

special lump sum contribution equal to the aggregate, excluding interest, of the contributions he would have made to the system during the portion of his service rendered after July 1, 1945 had such service been rendered within the State of South Carolina. Such contributions are thereafter treated in the same way as regular contributions.

#### BENEFITS

#### Service Retirement Benefit

#### Condition for Allowance

A retirement allowance is payable upon the request of any teacher or employee who has attained age 60 or has rendered 35 or more years of creditable service.

An employee must retire at age 70 except that with the approval of both his employer and the Board, an employee may remain in service to age 72, or for such period of time as may be necessary for such employee to qualify for coverage under the old age and survivors insurance provision of Title II of the Federal Social Security Act, as amended.

A teacher must retire at age 65 or upon the completion of the scholastic year in which he attains age 65, except that with the approval of his employer, a teacher may remain in service to age 72.

#### Amount of Allowance

On service retirement, a member receives a retirement allowance which consists of:

- (a) An employee annuity which is the actuarial equivalent of the member's accumulated contributions at the time of his retirement; and
- (b) An employer annuity equal to the employee annuity allowable at age 65, or at age of retirement, whichever is less, on the basis of contributions made prior to age 65; and

- (c) If the member has credit for service rendered prior to the date of establishment, an additional employer annuity allowable at age 65, or at age of retirement, whichever is less, equal to the employee annuity which would have been provided by twice the contributions which he would have made during such prior service had the system been in force and he contributed\* thereunder during the period of such prior service; and
- (d) If the member has credit for outof-State service rendered prior to July 1, 1945, an additional special annuity allowable at age 65, or at age of retirement, whichever is less, equal to the excess of
  - (i) an employer annuity computed on the basis of the part of his out-of-State service and his creditable service rendered prior to July 1, 1945 over
  - (ii) an employer annuity computed on the basis of his creditable service rendered prior to July 1, 1945.

If the member's creditable service does not, at his retirement, exceed twice his out-of-State service, the employer annuity based on his out-of-State service under (b) and (d) above shall be reduced in the proportion which his creditable service bears to twice his out-of-State service.

#### Disability Retirement Benefit

#### Condition for Allowance

A disability retirement allowance is payable to any member who while in service becomes permanently incapacitated for duty mentally or physically, and who has had 10 or more years of creditable service.

\*In determining the contributions which would have been made during prior service, the Board is authorized to use, in lieu of the actual compensation received by the member, the compensation rates which on the basis of the salary scale adopted by the Board would have resulted in the actual average compensation received by the member during the five years immediately preceding the establishment of the system.

#### Amount of Allowance

Upon disability retirement, a member who has attained age 60 or has 35 years of creditable service, receives a service retirement allowance, otherwise a disability retirement allowance which consists of:

- (a) An employee annuity which is the actuarial equivalent of the member's accumulated contributions at the time of retirement; and
- (b) An employer annuity equal to 75% of the employer annuity that would have been payable upon service retirement at age 60 had he continued in service to such date without further change in compensation, and had his contributions been at the rate of 4 per cent of such compensation from the date of disability to such date; and
- (c) For members in positions covered by Social Security, an additional employer annuity of \$6.00 per annum for each full year of membership service after July 1, 1955 payable only to age 65 and not subject to optional modification as defined below.

## Deferred Retirement Benefit

### 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 20 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.

# Return of Contributions and Death Benefit

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

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 35 years of creditable service or attained age 65, or who had twenty years of creditable service and attained age sixty, 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.

#### 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 at his death the excess, if any, of his accumulated contributions at retirement over the total of the employee annuity payments he has received 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 age 65.

#### CONTRIBUTIONS

Members contribute, by deduction from each payroll, at the rate of 4% of their earnable compensation.

#### By Members

After July 1, 1955, members in positions covered by Social Security, contribute at the rate of 3% of earnable compensation not in excess of the amount taxable under the Federal Insurance Contributions Act (at present \$4,800 per annum) plus 5% of earnable compensation not so taxable.

#### 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.

#### MEMBERSHIP OF THE SYSTEM

The following table shows the number and annual earnable compensation of active members, as of June 30, 1963, on the basis of which the valuation was prepared.

TABLE 1

THE NUMBER AND EARNABLE COMPENSATION OF ACTIVE MEMBERS
AS OF JUNE 30, 1963

	TOTAL		TEACHERS		EMPLOYEES	
GROUP	Number	Earnable Compensation	Number	: Earnable : Compensation	Number	Earnable Compensation
Men	: 41,096	: :\$ 129,301,156	: : 9,978	: :\$ 36,319,805	: : 31,118 :	: :\$ 92,981,351 :
Women	45,140	: 128,062,164	27,179	84,685,564	17,961	43,376,600
Total	86,236	: :\$ 257,363,320 :	37 <b>,1</b> 57	: :\$ 121,005,369 :	49,079	:\$ 136,357,951 :

The following table shows the number and annual amount of retirement allowances payable to retired members and to beneficiaries of deceased retired members as of June 30, 1963.

TABLE II

THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF RETIRED MEMBERS AND BENEFICIARIES ON THE ROLL AS OF JUNE 30, 1963

GROUP :	NUMBER	: TOTAL : ANNUAL : RETIREMENT ALLOWANCES
Service	Retirement	: <u>s</u> :
Teachers:  Men Women	425 2,233	: :\$ 279,768 : 1,134,216
Employees: Men Women	: : 1,026 : 647	: : 887,040 : 353,196
Total	: : 4,331 :	: :\$ 2,654,220
<u>Disabilit</u>	: <u>y Retiremer</u> :	: nts :
Teachers: Men Women	: : 31 : 157	: 16,020 : 52,860
Employees: Men Women	: : 112 : 47_	: : 61,116 : 18,024
Total	347	: :\$ 148,020
<u>Beneficiaries of I</u> and <u>Act</u>	: Deceased Re Live Member	: tired <u>Members</u> s
Men	: .: 36 .: 327	: :\$ 1.3,896 : 205,500
Women	363	: :\$ 219,396 :
Grand Total	: .: 5,041	; ;\$ 3,021,636

In addition, an amount of \$4,188 per annum is currently payable for temporary disability employer annuities.

## VALUATION OF ASSETS AND LIABILITIES

The following valuation balance sheet shows the assets and liabilities of the system as of June 30, 1963. The amounts of the present assets shown on the balance sheet were taken from financial information submitted by the Director of the system.

## TABLE III

# VALUATION BALANCE SHEET SHOWING THE ASSETS AND LIABILITIES OF THE SOUTH CAROLINA RETIREMENT SYSTEM AS OF JUNE 30, 1963

AD OF COAL	
ASSETS	
Present assets of system creditable to:  Employee Annuity Savings Fund\$ 59,351,098  Employer Annuity Accumulation Fund	76,873,799
Accrued liability contributions	
Total Prospective Contributions by Employers  Total Assets\$	270,524,799
<u>LIABILITIES</u>	
Present value of benefits on account of which contributions have been accumulated to date in the Employee Annuity Savings Fund\$	59,351,098
Present value of benefits payable on account of retired members or their beneficiaries now drawing benefits from the Employer Annuity Accumulation Fund	25,185,965
Present value of benefits to active members to be paid by contributions of the employers into the Employer Annuity Accumulation Fund	185,987,736 270,524,799

#### RESULTS OF VALUATION

The valuation balance sheet gives the following information with respect to the funds of the system.

#### Employee Annuity Savings Fund

The Employee Annuity Savings Fund is the fund to which are credited the contributions made by members together with interest thereon. When a member retires, the amount of his accumulated contributions is transferred from the Employee Annuity Savings Fund to the Employer Annuity Accumulation Fund and his annuity is paid from the latter fund. The assets credited to the Employee Annuity Savings Fund on June 30, 1963, which represent the accumulated contributions of members to that date, amounted to \$59,351,098. The liabilities of this fund are also shown as \$59,351,098, because the employee annuities which members' contributions will provide will be equal in value to their contributions with interest. Future contributions into this fund and benefits payable from such contributions are considered to be of equivalent value and hence are not shown in the balance sheet.

## Employer Annuity Accumulation Fund

The Employer Annuity Accumulation Fund is the 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 present assets creditable to the Employer Annuity Accumulation Fund on June 30, 1963, amounted to \$117,522,701. The liabilities on account of active members amounted to \$185,987,736. In addition, the balance sheet indicates liabilities of \$25,185,965 on account of all benefits payable to retired members or their beneficiaries from the Employer Annuity Accumulation Fund. The total liabilities, therefore, amounted to \$211,173,701. The difference between these liabilities and the present assets credited to this fund is \$93,651,000, which represents the present value of future contributions to be made by the employers. Of this amount \$74,885,210 represents the present value of prospective normal contributions by the employers and the balance of \$18,765,790 represents the present value of prospective 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 accrued liability contribution on account of liabilities assumed due to service rendered prior to the establishment of the system.

The valuation indicates that, in the case of teachers, the normal contribution rate may be continued at 3.54 per cent of earnable compensation. The valuation also indicates that, in the case of employees, the normal contribution rate may be continued at 2.05 per cent of earnable compensation.

The valuation further indicates that the accrued liability contribution rates determined on the basis of the valuation may be continued at 2.63 per cent of earnable compensation in the case of teachers, and at 1.93 per cent of earnable compensation in the case of employees.

The total employer contribution rate for teachers may therefore be continued at 6.17 per cent of earnable compensation. The corresponding rate for employees may be continued at 3.98 per cent of earnable compensation.

## RATES OF PAYMENT TO EMPLOYER ANNUITY ACCUMULATION FUND

The valuation balance sheet gives the basis for determining the percentage rates for fixing the contributions to be made by employers to the Employer Annuity Accumulation Fund under the provisions of the retirement act. The following table gives the rates of contribution payable by employers, as determined on the basis of the present valuation.

TABLE IV

RATES OF CONTRIBUTION RECOMMENDED FOR PAYMENT BY EMPLOYERS
ON THE BASIS OF THE VALUATION AS OF JUNE 30, 1963

RATES OF CONTRIBUTION	TEACHERS:	EMPLOYEES
Normal	: 3.54%	2.05%
Accrued Liability	•	1.93
Total		: : 3,98% :

## BASIS FOR VALUATION

The valuation of the retirement system was made on the basis of the mortality and service tables adopted by the Board under date of February 18, 1946. An interest rate of 4 per cent per annum was used.

A detailed record of each member of the system on the valuation date was required as a basis for determining the contingent assets and liabilities of the system. The data provided by these records, which were furnished to the actuary by the Director, were transferred to tabulating machine cards for use in making the necessary tabulations. Summaries of the tabulations of the data submitted are given in the following tables.

TABLE 1

THE NUMBER AND EARNABLE COMPENSATION OF MEMBERS DISTRIBUTED BY AGE AS OF JUNE 30 1963

	M I	E N	WOI	MEN
AGE	NUMBER	AMOUNT	NUMBER	AMOUNT
67890123456789012345678901234567890123456789012345	9614175663558842173097771557987278811919 2578900100122301100909999897888787877 11111111111111111111111	000338186850440269587084866114288268309033744704881904402695870885449887754288268309135913233333333333333333333333333333333	6251395935594780820351413744308441245783 2099814934733837765575320352168756298863 1357033321111111111111111111111111111111111	13942553376068596942042048742079299242327 20830859832124665208042066487420792293255 1394638512991239477904206648539652443796612278886532977788867396524437965567222131 1233332227788860991480888124443796612131 1233332227788860991480333333333333333333333333333333333333

TABLE 1

THE NUMBER AND EARNABLE COMPENSATION OF MEMBERS DISTRIBUTED BY AGE AS OF JUNE 30 1963

## CONTINUED

	Ŋ	A E N	W	OMEN
AGE	NUMBER	AMOUNT	NUMBER	AMOUNT
555566666666666777777777788888888888888	95328838906326083237939749508122111 6655443422111	00888473888989683085260939650106070089657436965281747148430470821695000029048341769488899567208897449945006029022221111 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	877655342211 877655342211	2983 2989 2971 2971 2971 2971 2971 2971 2971 297
TOTAL	41096	129301156	45140	128062164
SUMMARY			07470	84685564
TEACHERS		36319805	27179	43376600
EMPLOYEE	831118	92981351	17961	4 J J 1 0 0 0 0

TABLE 2

THE NUMBER AND EARNABLE COMPENSATION
OF MEMBERS DISTRIBUTED BY
YEARS OF SERVICE AS OF JUNE 30 1963

YEARS	MEN	WOMEN
OF SERVICE	NUMBER AMOUNT	NUMBER AMOUNT
0123456789012345678901234567890123456789012345	2119 4459 1150 2119 4459 1150 2110	1786 173144906667214490666721449066662144420224448006652144912266162814990665714499066652149906665214990666521499066652149906665214990666521499066652149906665214990666521499066652149906665214990666652149906666521499066666621499066666621499066666666666666666666666666666666666

TABLE 2

THE NUMBER AND EARNABLE COMPENSATION OF MEMBERS DISTRIBUTED BY YEARS OF SERVICE AS OF JUNE 30 1963

## CONTINUED

YEARS		MEN	W (	DMEN
OF SERVICE	NUMBER	AMOUNT	NUMBER	AMOUNT
6789012345678901234689 64444444455555555555555555555555555555	896536751174821 1122 11 10	614367 646472 503941 421248 32733 31172 1422373 2137640 7435760 173218 880022 1077564 13364 4764 129301156	201 173 1489 1489 1489 1489 111 1 45140	1008256 8394669 6784669 672150 41665079 41665079 224991893 10989317 224991313924 64991313924 7456 5194
TOTAL	41096	188301120	40140	
SUMMARY				
TEACHERS	9978	36319805	27179	84685564
EMPLOYEE	831118	92981351	17961	43376600

#### TABLE 3

THE DISTRIBUTION OF THE NUMBER AND MONTHLY RETIREMENT ALLOWANCES OF RETIRED MEMBERS AND BENEFICIARIES BY AGE AS OF JUNE 30 1963

## SERVICE RETIREMENTS AND BENEFICIARIES

MEN

WOMEN

AGE	NUMBER	AMOUNT	NUMBER	AMOUNT
17 20	1.	3 5	1	8
1702501578	<b>24.</b>	<del>-</del> -	1 1 2	20 27 114
3 <b>1</b>	1	4 8	S	107
37 38	<u>.</u>	-10	1 1	2 3 9
4 1 4 2	1 1	17 19	2 1	9 3 7 3 3
4 3 4 4	-	<b></b> -	12111523125737	4 9
4 5 4 6	2 1	9 0 3 5	5 2	19 94 65
4 7 4 8	_		3 1	132 30
49	1	17	2 5	5 2 1 3 2
5 1 5 2	3	5 5	7 3	306 123
5 <b>3</b> 5 4	1	8	8	221
0123456 <b>7</b> 89	1	3 0	9	6520 13520 13022 13022 13133 122133 12445 8365
5 <b>7</b> 5 <b>8</b>	2	88	8 1 2 2 3	358 683
60	5 5 26	202 505	30	1040 1272
6 <b>1</b> 6 2 6 3	18	2198 743	5 4	1620 2402 3641
6 4	4227	2405 1184 3163	87 103	4893 5203
6 5 6 6	46 63 95	3163 4361 7008	1 2 2 1 3 <b>1</b> 2 0 <b>3</b>	5769 9913
67 68 69 ·	102 86	7736 6351	206 193	9847 8987
70	1 2 4	8100	208	9626

TABLE 3

THE DISTRIBUTION OF THE NUMBER AND MONTHLY RETIREMENT ALLOWANCES OF RETIRED MEMBERS AND BENEFICIARIES BY AGE AS OF JUNE 30 1963

SERVICE RETIREMENTS AND BENEFICIARIES

## CONTINUED

MEN			WOW	1 E N
A G E N	UMBER	AMOUNT	NUMBER	AMOUNT
77777777888888888899999999999123461	719478061766812574613211 989875654313121 1	123         121         121         121         121         121         121         121         122         123         124         125         127         127         128         129         120         120         121         121         122         123         124         125         126         127         128         129         120         120         121         121         121         121         122         123         124         125         126         127         128         129         120         120         121         121         121         121         121         121         122         123         124         1	1992761298774323121 1111	936981507779761567728889204 942532583754795598211 1111 1 1 1 1
TOTAL	1487	98392	3207	141076
SUMMARY			0.5.5.0	1 1 0 0 4 7
NO OPTION OPTION 1 OPTION 2 OPTION 3	879 301 123 148	53822 23255 589 <b>7</b> 14260	2558 252 36 34	110047 11389 1099 1416
BENEFIC IARIES	36	1158	327	17125

THE DISTRIBUTION OF THE NUMBER AND MONTHLY RETIREMENT ALLOWANCES OF RETIRED MEMBERS BY ALLOWANCES OF RETIRED MEMBERS BY AGE AS OF JUNE 30 1963

# DISABILITY RETIREMENTS

38       1       23       1       4         39       1       87       1       4         40       1       1.68       1       3         41       1       1.68       1       4         42       1       31       3       3         43       1       31       3       3         44       1       57       1       3         45       2       1.47       1       3         46       2       1.91       3       1         2       1.91       3       1       2		WOMEN		
38 39 1 23 1 87 1 1 4 4 4 1 1 1 86 43 44 43 44 45 46 47 2 1 1 2 3 1 3 1 3 4 4 4 3 1 4 4 3 4 4 4 4 5 7 8 8 8 8 8 8 8 8 8 8 8 8 8	AGE	OUNT		
43 44 1 57 1 57 1 3 45 46 2 2 147 3 191	38 39 40 41	4 4 4 5 4 9 .3 4 4 3		
176 34 198 198 198 198 198 198 198 198	44444455555555555666666666677777777784444445555555555	9550709609304506058556284141992384 17930364946111734176332684262127 9		

143

TOTAL

## TABLE 4

THE DISTRIBUTION OF THE NUMBER AND MONTHLY RETIREMENT ALLOWANCES OF RETIRED MEMBERS BY AGE AS OF JUNE 30 1963

DISABILITY RETIREMENTS

## CONTINUED

	M E I	N SONII NOED		MEN
AGE	NUMBER	AMOUNT	NUMBER	AMOUNT
SUMMARY  NO OPTION OPTION 1 OPTION 2 OPTION 3	21	4430 1258 381 359	174 24 3 3	5151 576 54 126

SEE FOOTNOTE TABLE II