

REPORT ON AN ACTUARIAL VALUATION OF THE
SOUTH CAROLINA POLICE OFFICERS
RETIREMENT SYSTEM
PREPARED AS OF JULY 1, 1988

BUCK
CONSULTANTS

REPORT ON AN ACTUARIAL VALUATION OF THE
SOUTH CAROLINA POLICE OFFICERS
RETIREMENT SYSTEM
PREPARED AS OF JULY 1, 1988

BUCK
CONSULTANTS

**BUCK
CONSULTANTS**

200 Galleria Parkway, N.W. Suite 1060
Atlanta, Georgia 30339

August 30, 1989

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

Gentlemen:

Subsection 9-11-30(6) of the law governing the operation of the South Carolina Police Officers Retirement System provides that the actuary shall make an annual valuation of the assets and liabilities of the System. We have the honor to submit herewith the results of the valuation as of July 1, 1988 made in accordance with this provision of the law.

The actuarial assumptions used in this valuation 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 unfunded 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 Police Officers Retirement System as to those benefits which are funded on an actuarial reserve basis.

The results of the valuation indicate that the recommended rates of employer contribution, 7.80 per cent and 10.30 per cent of compensation for Class One and Class Two members, respectively, together with future contributions by members and the assets currently available are adequate to fund the actuarial liabilities on account of all benefits under the System, including all current and future post-retirement cost-of-living increases to current retired members and beneficiaries and active members currently eligible for service retirement. The liquidation period for the unfunded accrued liability is three years from July 1, 1988.

In addition, employer contributions at the rate of .20 per cent of compensation to cover the cost of the Pre-retirement Death Benefit Program and at .20 per cent of compensation to cover the cost of the Accidental Death Benefit Program should be continued.

Respectfully submitted,

(Signed) DONALD M. OVERHOLSER

Donald M. Overholser
Consulting Actuary

TABLE OF CONTENTS

<u>Section</u>	<u>Item</u>	<u>Page No.</u>
I	Summary of Principal Results	1
II	Membership Data	3
III	Assets	5
IV	Comments on the Valuation	5
V	Contributions Payable Under the System	6
VI	Valuation Basis	7
VII	Accounting Information	7
 <u>Schedule</u>		
A	Results of the Valuation as of July 1, 1988	10
B	Outline of Actuarial Assumptions and Methods	11
C	Summary of Main System Provisions as Interpreted for Valuation Purposes	12
D	Membership Data Tabulations	20

REPORT ON AN ACTUARIAL VALUATION OF THE
SOUTH CAROLINA POLICE OFFICERS RETIREMENT SYSTEM
PREPARED AS OF JULY 1, 1988

SECTION I - SUMMARY OF PRINCIPAL RESULTS

1. For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized below:

<u>Valuation Date</u>	<u>7/1/88</u>	<u>7/1/87</u>
Number of active members:		
Men	12,025	11,369
Women	2,509	2,072
Total	14,534	13,441
Annual compensation of active members during year:		
Men	\$ 228,092,802	\$ 206,849,733
Women	41,078,213	32,677,085
Total	\$ 269,171,015	\$ 239,526,818
Number of retired members and beneficiaries	2,354	2,195
Annual retirement allowances	\$ 15,413,678	\$ 13,083,577
Assets for valuation purposes	\$ 475,020,000	\$ 414,685,189
Normal contribution as per cent of compensation:		
Class One Service	4.59%	4.59%
Class Two Service	5.91	6.19
Unfunded accrued liability (UAL)	\$ 55,231,394	\$ 4,986,987
UAL contribution as per cent of compensation:		
Class One Service	3.21%	0.21%
Class Two Service	4.39	1.11
UAL liquidation period (years)	6	2
Pre-retirement death benefit contribution as per cent of compensation	.20%	.20%
Accidental death benefit contribution as per cent of compensation	.20%	.20%
Total contribution as per cent of compensation:		
Class One Service	8.20%	5.20%
Class Two Service	10.70%	7.70%

2. Comments on the valuation results as of July 1, 1988 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 reduce the eligibility for retirement from 30 years of service credit to 25 years. The retirement benefit formula under Class I has been increased from \$9.00 per month per year of service to \$10.25 per month, and under Class II from 1.75% of average final salary to 2.00% of average final salary. Employee contribution rates have been changed to \$21.00 per month for Class I employees and to 6.50% of pay for Class II employees. Employer contribution rates have been increased from 4.80% to 7.80% for Class I, and from 7.30% to 10.30% for Class II. The improved benefits are also applicable to those already retired. Benefits payable to current retirees have been increased by 14.3%
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. Since the previous valuation, the interest rate assumption has been increased from 7% to 7-1/2% and the salary increase assumptions have been increased by 1/2% at each age.

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, 1988 the number and annual compensation of members classified by age and years of service and the number and retirement allowances of retired members and beneficiaries as of July 1, 1988 classified by age. These tabulations are presented in Schedule D.
3. The following table shows the number and annual compensation of active members of the Retirement System as of July 1, 1988.

TABLE I

ACTIVE MEMBERSHIP OF THE
SOUTH CAROLINA POLICE OFFICERS RETIREMENT SYSTEM
AS OF JULY 1, 1988

GROUP	NUMBER	ANNUAL COMPENSATION
Men	12,025	\$ 228,092,802
Women	2,509	41,078,213
Total	14,534	\$ 269,171,015

Note: There are in addition 3,543 members not on the payroll as of July 1, 1988 but included in the individual accounts maintained by the System. The results of the valuation were adjusted to take these members into account.

4. The following table shows the number and annual retirement allowances of retired members and beneficiaries as of July 1, 1988.

TABLE II
THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF
RETIRED MEMBERS AND BENEFICIARIES
AS OF JULY 1, 1988

GROUP	NUMBER	ANNUAL RETIREMENT ALLOWANCES
Service and Early Retirements:		
Men	1,597	\$ 11,128,295
Women	65	301,478
Total	1,662	\$ 11,429,773
Disability Retirements:		
Men	334	\$ 2,333,760
Women	16	75,924
Total	350	\$ 2,409,684
Beneficiaries of Deceased Members:		
Men	9	\$ 29,041
Women	333	1,545,180
Total	342	\$ 1,574,221
Grand Total	2,354	\$ 15,413,678

Note: The retirement allowances shown do not include the increase effective July 1, 1988. However, the improvement was included in the liability determination.

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 separate funds for the Accidental and Group Life Insurance Pre-retirement Death Benefit Programs.

Included in the valuation are the assets of the members' account which represent the accumulated contributions of members together with interest thereon. As of July 1, 1988, these assets amounted to \$88,984,000.

Also included in the valuation are the assets of the accumulation account 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 account amounted to \$386,036,000 as of July 1, 1988.

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, 1988. The following comments on the valuation are pertinent:

The schedule shows that the System has actuarial liabilities of \$912,831,221 of which \$181,812,569 is for the prospective benefits payable on account of present retired members and beneficiaries, and \$731,018,652 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 \$475,020,000 and

anticipated future contributions by members of \$206,226,302 leaving a balance of \$231,584,919 to be provided by future contributions of employers.

In accordance with the law each employer shall contribute 7.80 per cent of compensation of Class One members in its employ and 10.30 per cent of compensation of Class Two members in its employ. The normal rate on the basis of Class One service for the average new entrant was determined to be 4.59 per cent of compensation. Therefore, if employers contribute 7.80 per cent of payroll for Class One members in their employ and 4.59 per cent is attributable to normal contributions, then the resulting 3.21 per cent is attributable to unfunded accrued liability contributions. For Class Two service the normal rate for the average new entrant was determined to be 5.91 per cent of compensation. Subtracting 5.91 per cent from 10.30 per cent (the amount employers contribute for Class Two members in their employ) results in an unfunded accrued liability contribution of 4.39 per cent of compensation for Class Two members. Future normal contributions at the above rates have a present value of \$176,353,525. If this amount is subtracted from \$231,584,919 the present value of future contributions to be made by employers, \$55,231,394 remains as the present value of the unfunded accrued liability contributions. On this basis, it is anticipated that the unfunded accrued liability of \$55,231,394 will be liquidated within a period of six years from the valuation date.

SECTION V - CONTRIBUTIONS PAYABLE UNDER THE SYSTEM

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

TABLE III

RATES OF CONTRIBUTION RECOMMENDED FOR
PAYMENT BY EMPLOYERS

RATES OF CONTRIBUTION	CLASS ONE	CLASS TWO
Regular Benefits	7.80%	10.30%
Pre-retirement Death Benefits*	.20	.20
Accidental Death Benefits*	.20	.20
Total	8.20%	10.70%

*Payable by participating employers.

It is recommended that participating employers contribute .20 per cent of compensation for pre-retirement lump sum death benefits, and .20 per cent of compensation for accidental death benefits, the same rates as were recommended last year.

SECTION VI - VALUATION BASIS

The valuation of the Retirement System was based on the rates of separation, the salary scales and the mortality tables last adopted by the Board. An outline of the actuarial assumptions and methods used 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, 1988

GROUP	NUMBER
Retirees and beneficiaries currently receiving benefits and terminated employees entitled to benefits but not yet receiving them	5,897
Active members:	
Vested	5,907
Non-vested	8,627
Total active members	14,534

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.

2. 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, 1988, are presented below.

Pension Benefit Obligation
(in \$ thousand)

° Retirees and beneficiaries currently receiving benefits and terminated employees entitled to benefits but not yet receiving benefits	\$ 190,746
° Current employees:	
Accumulated contributions	84,518
Employer-financed vested	87,331
Employer-financed nonvested	<u>177,988</u>
Total Pension Benefit Obligation	\$ 540,583
° Net assets available for benefits	\$ 475,020
° Unfunded Pension Benefit Obligation	\$ 65,563

3. The following first three 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 \$ thousand)

<u>Fiscal Year Begin.</u>	(1) Net Assets Available for Benefits	(2) Pension Benefit Obligation	(3) Percentage Funded (1) ÷ (2)	(4) Unfunded Pension Benefit Obligation (2) - (1)	(5) Annual Covered Payroll	(6) Unfunded PBO as % of Covered Payroll (4) ÷ (5)
7/1/86	\$ 353,269	\$ 397,165	88.9%	\$ 43,896	\$ 204,405	21.5%
7/1/87	414,685	445,158	93.2	30,473	239,527	12.7
7/1/88	475,020	540,583	87.9	65,563	269,171	24.4

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, 1988

(1) Actuarial liabilities

Present value of prospective benefits payable
in respect of:

(a) Present retired members and beneficiaries	\$ 181,812,569
(b) Present active and inactive members	<u>731,018,652</u>
(c) Total actuarial liabilities	\$ 912,831,221
(2) Assets of the System	<u>475,020,000</u>
(3) Present value of future contributions = (1)(c) - (2)	\$ 437,811,221
(4) Present value of future contributions by members	<u>206,226,302</u>
(5) Present value of future contributions by employers = (3) - (4)	\$ 231,584,919
(6) Present value of future normal contributions by employers	\$ 176,353,525
(7) Present value of unfunded accrued liability contributions by employers = (5) - (6)	\$ 55,231,394
(8) Unfunded accrued liability rates:	
(a) Class One Service	3.21%
(b) Class Two Service	4.39%
(9) Unfunded accrued liability liquidation period	6 years
(10) Pre-retirement death benefit contribution rate	.20%
(11) Accidental death benefit contribution rate	.20%

SCHEDULE B

OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS

INTEREST RATE: 7-1/2% per annum, compounded annually.

SEPARATION FROM SERVICE AND SALARY INCREASES: Representative values of the adopted annual rates of separation and annual rates of salary increases are as follows:

Age	Annual Rate of				
	Withdrawal	Death	Disability	Service* Retirement	Salary Increases
20	13.79%	.10%	.14%		11.79%
25	12.83	.13	.16		10.89
30	9.12	.16	.20		9.51
35	5.61	.20	.26		7.79
40	3.43	.27	.34		7.00
45	2.33	.40	.50		6.60
50	1.74	.57	.84	5.00%	6.30
55		.88		6.50	6.10
60		1.42		9.90	5.90
64		2.03		15.98	5.80

*An additional 20% are assumed to retire when first eligible for unreduced service retirement.

DEATHS AFTER RETIREMENT: Combined Annuity Mortality Tables, Modified and Makehamized, for service retirement and dependent beneficiaries with a one-year setback in ages. A special mortality table is used for disability retirements.

VALUATION METHOD: Projected benefit method 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.

SCHEDULE CSUMMARY OF MAIN SYSTEM PROVISIONS
AS INTERPRETED FOR VALUATION PURPOSESBACKGROUND

The South Carolina Police Officers Retirement System was established as of July 1, 1962. Firemen were eligible to participate in the System on July 1, 1976. Membership in the System is open to any police officer or fireman of the State or other employer (county, municipality or other political subdivision of the State and any agency or department thereof) that has been admitted to the System. A police officer or fireman whose period of active duty during a year is at least 1,600 hours and whose compensation for such service is at least \$2,000 per year is eligible to join. Membership is compulsory with employees who become police officers or firemen of the State or other employers after the employer's date of admission to the System. Police officers and firemen in service on the employer's date of admission become members as of such date unless they file elections not to become members of the System and execute a waiver of all present and prospective benefits which would otherwise inure to them on account of their participation in the System. Contributions to provide the benefits under the System are made jointly by the members and the employers.

A summary of the main benefit and contribution provisions of the System as interpreted for the valuation is presented in the following digest. Credited service of a member includes all service as a police officer or fireman since he last became a member of the System and also includes, in the case of a member who became such on or before June 30, 1963, remains a member until

death or retirement under the System and who immediately prior to his becoming a member was a participant in another fund, service which was credited to him under such other fund. "Supplemental Allowance Program" is the Supplemental Allowance Program established under the System as of July 1, 1966 and as in effect on June 30, 1974. There are two classes of members under the System. Class Two includes each member who was a participant in the Supplemental Allowance Program as of June 30, 1974 and any other police officer who became a member prior to July 1, 1974 and is employed by the State or by an employer which was participating in the Supplemental Allowance Program as of June 30, 1974 or which elected to provide Class Two membership for police officers in its employ and elected by written notice filed with the Board within 60 days after July 1, 1974 to become a Class Two member as of said date, provided that any such member who was not in service as of July 1, 1974 may make such election within 60 days after his return to service. Any police officer becoming a member on or after July 1, 1974 who is employed by the State or by an employer which has elected to provide Class Two membership for police officers in its employ and any police officer or fireman who is a member and is employed by an employer whose date of admission is on or after July 1, 1974 is a Class Two member. Any member who is not a Class Two member is a Class One member. "Class Two service" is credited service subsequent to June 30, 1974 as a Class Two member, and credited service prior to July 1, 1974, or date of membership, if later, with respect to which required contributions have been made. "Class One service" is credited service which is not "Class Two service". "Average final compensation" is the average annual compensation of a member during the twelve consecutive quarters of credited service producing the highest such average.

BENEFITS

Service Retirement Allowance

Condition for Allowance

A member may retire on a service retirement allowance upon the attainment of age 55 and the completion of 5 years of credited service, or at any age upon the completion of 25 years of credited service.

Amount of Allowance

Upon service retirement a member receives a service retirement allowance which is equal to:

- (1) A monthly retirement allowance equal to \$10.25 multiplied by the number of years of his Class One service.
- (2) A monthly retirement allowance equal to $1/12$ of 2% of his average final compensation multiplied by the number of years of his Class Two service.
- (3) An additional monthly retirement allowance which is the actuarial equivalent of the member's accumulated additional contributions at retirement.

The sum of the retirement allowances under (1) and (2) above is not to be less than the allowance which would have been provided under (1) if all of the member's credited service were Class One service. In the case of a police officer who became a member prior to July 1, 1974 and who was a participant in the Supplemental Allowance Program, the portion of his service retirement allowance not provided by his accumulated contributions is not to be less than it would have been if the provisions of the System in effect on June 30, 1974 had continued in effect until his date of retirement.

Early Retirement Allowance

Condition for Allowance

A member who has completed 5 years of credited service may retire on an early retirement allowance.

Amount of Allowance

Upon early retirement a member is entitled to a deferred allowance commencing at age 55 which is equal to a service retirement allowance computed on the basis of his average final compensation and credited service at his early retirement date.

Disability Retirement Allowance

Condition for Allowance

A member who has completed 5 or more years of credited service or who is disabled as a result of an injury arising out of and in the course of the performance of his duties regardless of length of service and who is permanently incapacitated for duty, mentally or physically, may retire or be retired on a disability retirement allowance.

Amount of Allowance

Upon disability retirement a member receives a disability retirement allowance computed as a service retirement allowance based on the years of credited service the member would have completed had he remained in active service until age 55, and his accumulated additional contributions at disability retirement. For the purpose of calculating the disability retirement allowance, the additional credited service so determined is either Class One service or Class Two service depending upon the classification of the member at time of retirement. The compensation to be used for purposes of computing this benefit is the average final compensation as of the date of disability.

Return of Contribution

Should a member cease to be a police officer or fireman except by death or retirement his accumulated contributions are returned to him. Should a member die before retirement the amount of his accumulated contributions is paid to his designated beneficiary or estate.

Death Benefit

Upon the death of a member in service a lump sum amount is paid to his designated beneficiary or estate equal to:

- (1) The amount of his accumulated contributions, excluding any additional contributions, or \$1,000, whichever is greater; plus

- (2) The amount of his accumulated additional contributions.

Upon the death of a retired member who has not elected Option 1 or Option 2, the excess of his total accumulated contributions at the time his allowance commenced over the sum of the retirement allowance payments made to him is paid to his designated beneficiary or estate.

In the event of the death before retirement of a member who has attained age 55 and completed 20 or more years of credited service, or who, regardless of age, has completed 25 or more years of credited service, his designated beneficiary may elect to receive in lieu of the lump sum settlement otherwise payable based on (1) above an allowance for life in the same amount as if the member had retired at the time of death and had chosen Option 1.

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 and the Group Life Insurance payment, an allowance for life in an amount as if the member had retired on the date of his death and had elected for payment to commence at age 55 under Option 1 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.

Such beneficiary may elect to receive in lieu of the member's accumulated additional contributions, an allowance for life which is the actuarial equivalent of the amount of contributions left on deposit in the System.

Pre-retirement Death Benefit Program

Upon the death of a contributing member in service who had completed at least one full year of membership or who had died as a result of an injury arising out of and in the course of the performance of his duties regardless of length of service, a death benefit is payable to his designated

beneficiary or estate, equal to the annual compensation of the member at the time his death occurs. Such death benefit is payable apart and separate from the payment of the member's accumulated contributions. Benefits under this program are to be provided in the form of group life insurance.

Accidental Death Benefit Program

Upon the death in active service as a result of the actual performance of duty of a member whose employer participates under the Program, a pension equal to 50% of the member's compensation at the time of death is paid to his widow during her widowhood. If there is no eligible widow before the youngest child attains age 18 the pension is paid to surviving children under age 18 or, if at the time of the member's death there is no widow or child under age 18, the pension is paid to his surviving father or mother. Such death benefit is payable apart and separate from any other benefits payable upon death.

Optional Allowances

Until the first payment on account of a retirement allowance 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 after his death the reduced allowance will be continued to his designated beneficiary.

Option 2. A reduced retirement allowance payable during the retired member's life, with the provision that after his death one-half of the reduced allowance will be continued to his designated beneficiary.

Option 3. 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.

Option 4. A member may elect Option 1 or Option 2 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.

Cost-of-Living Adjustments in Allowance

If the increase in the Consumer Price Index for the previous year ending December 31 equals or exceeds 3%, the retirement allowance, exclusive of any part thereof derived from accumulated additional contributions, of each beneficiary in receipt of an allowance for at least one year as of said December 31, is to be increased by 4%. Any such increase in allowances becomes effective only if the additional liabilities on account of such increase in allowance do not require an increase in the employer rate of contribution. Any increase in allowance granted hereunder is to be permanent, irrespective of any subsequent decrease in the Consumer Price Index, and is to be included in determining any subsequent increase.

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

CONTRIBUTIONS

By Members

Each Class One member contributes \$21 per month. Each Class Two member contributes 6.5% of compensation.

By Employers

Each employer contributes 7.80% of the compensation of Class One members and 10.30% of the compensation of Class Two members in its employ. Such rates are subject to adjustment on the basis of actuarial valuations. In addition each employer contributes .40% of the compensation of both Class One and Class Two members to cover the cost of the Accidental and Group Life Insurance Pre-retirement Death Benefit Programs.

SCHEDULE D

TABLE 1

THE DISTRIBUTION OF THE NUMBER
AND ANNUAL COMPENSATION OF ACTIVE MEMBERS
BY AGE AS OF JULY 1, 1988

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
19	10	\$ 98,360	4	\$ 42,966
20	29	336,719	8	79,020
21	65	758,881	8	70,792
22	183	2,322,578	38	453,412
23	318	4,415,695	75	982,368
24	449	6,535,421	85	1,213,792
25	476	7,293,266	113	1,588,258
26	471	7,369,388	122	1,767,050
27	473	7,610,178	97	1,381,064
28	487	8,057,025	131	1,916,302
29	444	7,351,977	117	1,784,124
30	379	6,475,114	129	2,051,703
31	412	7,319,038	114	1,764,686
32	400	7,106,353	115	1,848,515
33	405	7,336,558	104	1,759,560
34	390	7,347,528	108	1,906,263
35	402	7,914,411	115	2,077,606
36	354	6,943,558	82	1,412,693
37	369	7,473,933	86	1,429,154
38	339	6,944,268	76	1,258,986
39	371	7,743,868	81	1,474,915
40	394	8,463,473	74	1,259,712
41	407	8,667,071	63	1,113,858
42	331	7,197,775	69	1,216,620
43	292	6,148,919	44	796,064
44	254	5,091,704	45	828,187
45	291	6,153,829	46	879,696
46	269	5,805,361	47	882,770
47	196	4,192,065	42	731,187
48	206	4,333,545	28	477,219
49	219	4,796,893	22	376,816
50	168	3,680,202	32	619,709
51	190	4,103,048	25	454,659
52	181	3,730,841	33	654,766
53	187	4,290,848	30	623,313
54	170	3,829,366	17	320,455
55	160	3,581,200	11	178,673

TABLE 1

THE DISTRIBUTION OF THE NUMBER AND
ANNUAL COMPENSATION OF ACTIVE MEMBERS
BY AGE AS OF JULY 1, 1988

CONTINUED

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
56	122	\$ 2,668,942	10	\$ 177,116
57	112	2,419,836	11	240,797
58	130	2,903,659	11	209,223
59	98	2,041,665	7	119,138
60	112	2,402,342	8	143,007
61	100	2,249,004	8	161,507
62	47	1,047,767	4	72,417
63	36	862,270	1	17,320
64	36	703,234	3	67,827
65	28	689,939	3	59,650
66	13	245,916	5	82,918
67	13	277,542	1	15,460
68	9	189,245		
69	12	212,056	1	34,900
70	5	164,643		
71	1	9,606		
72	2	21,430		
73	2	20,826		
74	2	65,551		
76	1	12,338		
77	1	20,237		
79	1	23,783		
82	1	20,714		
TOTAL	12,025	\$ 228,092,802	2,509	\$ 41,078,213

SEE FOOTNOTE TABLE I

TABLE 2

THE DISTRIBUTION OF THE NUMBER AND
ANNUAL COMPENSATION OF ACTIVE MEMBERS
BY YEARS OF CREDITED SERVICE
AS OF JULY 1, 1988

YEARS OF SERVICE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
0	990	\$ 12,169,146	389	\$ 4,833,275
1	1,635	24,232,404	528	7,600,738
2	1,771	30,416,966	626	11,156,813
3	1,096	19,094,776	211	3,472,879
4	807	14,353,073	136	2,268,357
5	609	11,912,106	122	2,242,913
6	506	9,467,615	57	974,741
7	529	10,346,640	97	1,743,458
8	349	6,867,687	64	1,084,315
9	443	9,087,354	68	1,282,467
10	388	8,114,707	51	1,005,015
11	337	7,282,527	42	815,202
12	355	7,733,733	33	692,441
13	279	6,414,433	27	581,484
14	324	7,610,685	20	421,039
15	222	5,322,395	13	312,866
16	194	4,873,097	12	265,973
17	148	3,775,340	5	118,705
18	137	3,394,626	2	62,700
19	126	3,195,661	2	49,524
20	113	2,986,805	1	30,180
21	109	2,856,129		
22	72	1,926,288		
23	63	1,687,825	1	36,392
24	48	1,368,722		
25	53	1,525,965		
26	33	948,964		
27	45	1,290,239		
28	34	1,015,535		
29	35	996,391		
30	28	864,214	2	26,736
31	34	1,043,757		
32	20	642,631		
33	20	636,831		
34	14	490,347		
35	9	330,634		

TABLE 2

THE DISTRIBUTION OF THE NUMBER AND
ANNUAL COMPENSATION OF ACTIVE MEMBERS
BY YEARS OF CREDITED SERVICE
AS OF JULY 1, 1988

CONTINUED

YEARS OF SERVICE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
36	20	\$ 687,210		
37	6	239,125		
38	7	241,766		
39	5	187,007		
40	1	38,807		
41	3	118,823		
42	2	64,414		
43	2	91,420		
44	3	110,789		
45	1	37,193		
TOTAL	12,025	\$ 228,092,802	2,509	\$ 41,078,213

SEE FOOTNOTE TABLE I

TABLE 3

THE DISTRIBUTION OF THE NUMBER AND
ANNUAL RETIREMENT ALLOWANCES
OF RETIRED MEMBERS BY AGE
AS OF JULY 1, 1988

SERVICE AND EARLY RETIREMENTS

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
43	1	\$ 1,497		
47	1	12,120		
48	1	4,336		
49	1	19,758		
50	2	7,289		
51	6	70,510		
52	3	38,967		
53	8	101,891		
54	9	120,067		
55	15	192,902		
56	36	472,911	1	\$ 2,328
57	39	460,547	1	18,374
58	60	499,338		
59	36	341,824		
60	53	571,512	2	3,321
61	58	615,319	2	5,702
62	58	501,434	1	9,723
63	64	513,471	7	31,631
64	98	761,089	7	51,847
65	47	331,971	7	17,727
66	80	587,903	4	11,545
67	71	458,910	6	13,209
68	101	665,325	5	19,214
69	62	344,144	1	4,476
70	87	617,428	3	13,972
71	61	292,674	5	15,937
72	73	402,444	1	1,489
73	50	307,656		
74	66	302,317	2	7,463
75	56	251,810	2	6,277
76	41	170,689	1	2,887
77	44	157,180	2	44,031
78	40	188,638	1	4,393
79	32	181,639		
80	37	175,742	4	15,932

TABLE 3
 THE DISTRIBUTION OF THE NUMBER AND
 ANNUAL RETIREMENT ALLOWANCES
 OF RETIRED MEMBERS BY AGE
 AS OF JULY 1, 1988

SERVICE AND EARLY RETIREMENTS

CONTINUED

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
81	23	\$ 96,136		
82	15	71,816		
83	14	53,620		
84	8	33,538		
85	13	48,659		
86	7	16,950		
87	3	5,869		
88	6	21,511		
89	3	5,194		
90	2	8,486		
91	3	12,238		
92	1	2,145		
93	1	3,904		
94	1	4,977		
TOTAL	1,597	\$ 11,128,295	65	\$ 301,478

SUMMARY

LIFE ANNUITY	872	\$ 4,666,718	49	\$ 232,889
100% J+S	139	702,271	2	3,889
50% J+S	165	1,273,970		
SOC. SEC. LEVELING	257	3,004,690	13	60,762
100% POP-UP	61	367,295	1	3,938
50% POP-UP	103	1,113,351		

TABLE 4

THE DISTRIBUTION OF THE NUMBER AND
ANNUAL RETIREMENT ALLOWANCES
OF RETIRED MEMBERS BY AGE
AS OF JULY 1, 1988

DISABILITY RETIREMENTS

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
31	2	\$ 12,412	1	\$ 11,072
34	1	9,832		
35	1	11,133		
36	1	9,559		
37	3	31,613		
38	8	65,566		
39	5	49,050	2	11,525
40	2	11,405	1	7,758
41	8	65,427		
42	8	83,819		
43	6	50,605	1	6,247
44	8	141,760		
45	4	26,363	1	4,147
46	8	59,450	2	7,443
47	9	52,441	2	9,728
48	15	122,336		
49	7	58,045		
50	11	91,444		
51	6	47,174		
52	19	162,537		
53	6	67,974	3	7,981
54	11	74,953		
55	14	93,918		
56	13	74,652	1	3,091
57	17	91,671		
58	12	94,531		
59	12	63,489	1	3,391
60	9	50,580		

TABLE 4

THE DISTRIBUTION OF THE NUMBER
AND ANNUAL RETIREMENT ALLOWANCES
OF RETIRED MEMBERS BY AGE
AS OF JULY 1, 1988

DISABILITY RETIREMENTS

CONTINUED

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
61	9	\$ 46,014		
62	8	47,256		
63	15	91,694		
64	13	65,803		
65	6	13,033		
66	8	45,123		
67	9	49,389		
68	11	71,792		
69	9	32,125		
70	6	24,645	1	\$ 3,541
71	7	59,053		
72	2	2,317		
73	3	6,789		
75	2	4,988		
TOTAL	334	\$ 2,333,760	16	\$ 75,924

SUMMARY

LIFE ANNUITY	218	\$ 1,535,080	13	\$ 63,797
100% J+S	52	263,255	2	6,838
50% J+S	32	243,048		
100% POP-UP	13	136,183		
50% POP-UP	19	156,194	1	5,289

TABLE 5

THE DISTRIBUTION OF THE NUMBER
AND ANNUAL RETIREMENT ALLOWANCES
OF BENEFICIARIES BY AGE
AS OF JULY 1, 1988

BENEFICIARIES OF DECEASED ACTIVE AND RETIRED MEMBERS

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
23			1	\$ 4,381
30			1	3,984
31			2	14,134
35			1	11,556
36	1	\$ 2,498	1	6,109
37			1	6,054
38			1	1,382
39			1	954
40			1	3,817
41			1	1,902
42			1	8,251
43			1	1,316
44	1	7,705	1	1,521
46			2	13,645
47			3	10,901
48			3	24,058
49			6	32,511
50			8	40,141
51			2	6,735
52			1	14,208
53			3	14,267
54			4	21,404
55			5	17,466
56			4	34,356
57	1	1,866	6	66,135
58			8	44,570
59			3	33,040
60			11	56,436

TABLE 5

THE DISTRIBUTION OF THE NUMBER
AND ANNUAL RETIREMENT ALLOWANCES
OF BENEFICIARIES BY AGE
AS OF JULY 1, 1988

BENEFICIARIES OF DECEASED ACTIVE AND RETIRED MEMBERS

CONTINUED

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
61			6	\$ 37,856
62			8	51,766
63			7	28,350
64	1	\$ 3,132	10	16,076
65			9	66,163
66			10	68,959
67			21	92,281
68	1	1,316	6	23,676
69			17	83,711
70	1	6,314	12	45,061
71			8	23,923
72	1	1,954	18	74,925
73	1	2,366	20	89,694
74			18	59,831
75			13	56,312
76	1	1,890	13	45,886
77			11	60,797
78			6	19,582
79			7	19,527
80			8	26,834
81			6	11,979
82			5	13,891
83			5	11,047
84			1	527
85			2	10,153
87			2	9,081
89			1	2,059
TOTAL	9	\$ 29,041	333	\$ 1,545,180