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**REPORT ON THE FIFTY-EIGHTH ANNUAL VALUATION
OF THE TEACHERS' AND STATE EMPLOYEES'
RETIREMENT SYSTEM OF NORTH CAROLINA
PREPARED AS OF DECEMBER 31, 2000**

BUCK CONSULTANTS[®]

A Mellon Consulting Company

200 Galleria Parkway, N.W. Suite 1900
Atlanta, Georgia 30339-5945

January 16, 2002

Board of Trustees
Teachers' and State Employees'
Retirement System of North Carolina
325 North Salisbury Street
Raleigh, NC 27603

Members of the Board:

We submit herewith our report on the fifty-eighth annual valuation of the Teachers' and State Employees' Retirement System of North Carolina prepared as of December 31, 2000. The report has been prepared in accordance with North Carolina General Statute 135-6(o).

The system was amended effective July 1, 2001 to provide a 2.0% increase in the benefit to beneficiaries on the roll as of July 1, 2000 and to provide a prorated portion of a 2.0% increase for beneficiaries who retired after July 1, 2000 but before June 30, 2001. The cost of this amendment was covered by gains which developed during the 1999 valuation year. The actuarial assumptions have been changed in accordance with the experience investigation prepared as of December 31, 1999 and adopted by the Board of Trustees on December 14, 2000.

The Appropriations Act of 2001 sets contributions at 1.97% of payroll effective July 1, 2001. The Act also removes the requirement that limits the amount of assets that may be recognized for valuation purposes to 77% of market value. On this basis, these contributions would provide a preliminary reserve from undistributed gains equivalent to 1.97% of payroll. However, the System is owed 1.42% of employer contributions, the unpaid portion of the amount escrowed during the 2000/2001 fiscal year. Assuming that the entire 1.42% owed to the System is paid from the undistributed gains, the remaining undistributed gains are equivalent to 0.55% of payroll.

The valuation has been prepared in accordance with the parameters of Statement Nos. 25 and 27 of the Governmental Accounting Standards Board. The annual required contribution (ARC) under GASB for the 2002-2003 fiscal year is 0% of payroll which will liquidate the unfunded accrued liability within an 11-year period. The System has a net pension obligation since the employer contribution made to the System was less than the ARC for the fiscal year ended June 30, 2001.

The Table of Contents, which immediately follows, outlines the material contained in the report.

Respectfully submitted,



Edward A. Macdonald
Principal and Consulting Actuary

EAM:sr

TABLE OF CONTENTS

<u>Section</u>	<u>Item</u>	<u>Page No.</u>
I	Summary of Principal Results	1
II	Membership Data	2
III	Valuation Balance Sheet	3
IV	Comments on Valuation	5
V	Comments on Experience and Gains	6
VI	Rates of Payment to Pension Accumulation Fund	7
VII	Accounting Information	8
<u>Schedule</u>		
A	Development of Actuarial Value of Assets	11
B	Statement of Actuarial Assumptions and Methods	12
C	Summary of Main Benefit and Contribution Provisions	14
D	Detailed Tabulations of the Data	18

**REPORT ON THE FIFTY-EIGHTH ANNUAL VALUATION OF THE
TEACHERS' AND STATE EMPLOYEES' RETIREMENT SYSTEM OF NORTH CAROLINA
PREPARED AS OF DECEMBER 31, 2000**

SECTION I - SUMMARY OF PRINCIPAL RESULTS

1. This report, prepared as of December 31, 2000, presents the results of the fifty-eighth actuarial valuation of the system. For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized below. The current valuation reflects the benefit increases granted to beneficiaries as of July 1, 2001 and amendments to the system effective through July 1, 2001.

**TABLE I
SUMMARY OF PRINCIPAL RESULTS**

VALUATION DATE	12/31/00	12/31/99*
Active members included in valuation		
Number	292,311	285,784
Annual compensation	\$ 9,001,353,605	\$ 8,437,649,280
Beneficiaries		
Number	107,743	102,938
Annual allowances	\$ 1,678,159,215	\$ 1,510,522,452
Assets		
Market related actuarial value	\$ 39,773,747,165	\$ 34,883,261,455
Market value	45,942,585,003	45,302,936,954
Unfunded accrued liability	\$ (4,524,977,179)	\$ (2,096,153,188)
CONTRIBUTIONS FOR FISCAL YEAR ENDING	June 30, 2003	June 30, 2002
<u>Appropriations Act</u>		
Employer contribution rate		
Normal	6.70%	6.90%
Accrued liability	<u>(4.73)</u>	<u>(1.57)</u>
Total	1.97%	5.33%
<u>GASB 25/27</u>		
Annual required contribution (ARC) of employer		
Normal	6.70%	6.90%
Accrued liability	<u>(6.70)</u>	<u>(1.57)</u>
Total	0.00%	5.33%
Liquidation period	11 years	23 years
Preliminary undistributed gains	1.97%	2.15%
Estimated adjustment for required Employer contributions not made	<u>(1.42%)</u>	<u>0.00%</u>
Reserve from undistributed gains	0.55%	2.15%

*Since the previous valuation, the 12/31/99 valuation results have been revised due to legislative requirements. The actuarial value of assets was changed to \$36,119,250,376, the employer contribution rate was changed to 1.97% and the remaining undistributed gains were spent on benefit improvements.

2. The valuation balance sheet showing the results of the valuation is given in Section III.
3. Comments on the valuation results are given in Section IV, comments on the experience and actuarial gains during the valuation year are given in Section V and the rates of contribution payable by employers are given in Section VI.
4. Schedule B of this report outlines the full set of actuarial assumptions and methods employed. Since the previous valuation, the assumptions have been revised to reflect the results of the experience investigation prepared as of December 31, 1999 and adopted by the Board of Trustees on December 14, 2000. In addition, the asset valuation method has been changed to a five-year market related value of assets, removing the cap of 77% of market value. Schedule A of this report presents the development of the actuarial value of assets.
5. Schedule C gives a summary of the benefit and contribution provisions of the system.

SECTION II - MEMBERSHIP DATA

Data regarding the membership of the system for use as a basis for the valuation were furnished by the system's office. The following tables summarize the membership of the system as of December 31, 2000 upon which the valuation was based. Detailed tabulations of the data are given in Schedule D.

TABLE II

THE NUMBER AND ANNUAL COMPENSATION OF ACTIVE MEMBERS INCLUDED IN THE VALUATION AS OF DECEMBER 31, 2000

GROUP	NUMBER	ANNUAL COMPENSATION
Teachers	131,438	\$ 4,402,416,739
Employees	158,195	4,490,654,814
Law Enforcement Officers	<u>2,678</u>	<u>108,282,052</u>
Total	292,311	\$ 9,001,353,605

There are, in addition, 41,020 inactive members and 4,898 members who were excluded from the table because of insufficient data. The results of the valuation were adjusted to take these members into account.

TABLE III

**THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF BENEFICIARIES
AND SURVIVORS ON THE ROLL AS OF DECEMBER 31, 2000**

GROUP	NUMBER	ANNUAL RETIREMENT ALLOWANCES
<u>Beneficiaries Receiving Service Retirement Allowances</u>		
Teachers	43,804	\$ 888,874,900
Employees	46,632	573,289,613
Law Enforcement Officers	<u>1,405</u>	<u>33,558,106</u>
Total	91,841	\$ 1,495,722,619
<u>Beneficiaries Receiving Disability Retirement Allowances</u>		
Teachers	3,143	\$ 54,142,081
Employees	2,977	33,312,035
Law Enforcement Officers	<u>159</u>	<u>3,189,838</u>
Total	6,279	\$ 90,643,954
<u>Benefits to Survivors of Deceased Beneficiaries</u>		
Teachers	2,855	\$ 35,818,067
Employees	6,566	52,924,415
Law Enforcement Officers	<u>202</u>	<u>3,050,160</u>
Total	9,623	\$ 91,792,642
Grand Total	<u>107,743</u>	<u>\$ 1,678,159,215</u>

SECTION III - VALUATION BALANCE SHEET

The following valuation balance sheet shows the assets and liabilities of the retirement system as of the current valuation date of December 31, 2000 and, for comparison purposes, as of the immediately previous valuation date of December 31, 1999. The items shown in the balance sheet are present values actuarially determined as of the relevant valuation date. The development of the actuarial value of assets is presented in Schedule A.

TABLE IV

VALUATION BALANCE SHEET
SHOWING THE ASSETS AND LIABILITIES OF THE
TEACHERS' AND STATE EMPLOYEES'
RETIREMENT SYSTEM OF NORTH CAROLINA

ASSETS	DECEMBER 31, 2000	DECEMBER 31, 1999
Current actuarial value of assets:		
Annuity Savings Fund	\$ 6,078,884,844	\$ 5,755,037,691
Pension Accumulation Fund	<u>33,694,862,321</u>	<u>29,128,223,764</u>
Total current assets	\$ 39,773,747,165	\$ 34,883,261,455
Future member contributions to Annuity Savings Fund	\$ 5,256,054,210	\$ 5,488,208,412
Prospective contributions to Pension Accumulation Fund:		
Normal contributions	\$ 5,781,659,631	\$ 6,219,969,534
Unfunded accrued liability contributions	(4,524,977,179)	(2,096,153,188)
Undistributed gain contributions	<u>1,056,814,998</u>	<u>1,211,643,695</u>
Total prospective contributions	\$ 2,313,497,450	\$ 5,335,460,041
Total Assets	<u>\$ 47,343,298,825</u>	<u>\$ 45,706,929,908</u>
LIABILITIES		
Annuity Savings Fund:		
Past member contributions	\$ 6,078,884,844	\$ 5,755,037,691
Future member contributions	<u>5,256,054,210</u>	<u>5,488,208,412</u>
Total contributions to Annuity Savings Fund	\$ 11,334,939,054	\$ 11,243,246,103
Pension Accumulation Fund:		
Benefits currently in payment	\$ 14,943,297,371	\$ 13,569,519,913
Benefits to be paid to current active members	19,696,610,432	19,100,638,404
Reserve for increases in retirement allowances effective July 1, 2001 (July 1, 2000 for December 31, 1999 figure)	311,636,970	581,881,793
Reserve from undistributed gains	<u>1,056,814,998</u>	<u>1,211,643,695</u>
Total benefits payable from Pension Accumulation Fund	\$ 36,008,359,771	\$ 34,463,683,805
Total Liabilities	<u>\$ 47,343,298,825</u>	<u>\$ 45,706,929,908</u>

SECTION IV - COMMENTS ON VALUATION

The valuation balance sheet gives the following information with respect to the funds of the system as of December 31, 2000.

Annuity Savings Fund

The Annuity Savings Fund is the fund to which are credited contributions made by members together with interest thereon. When a member retires, the amount of his accumulated contributions is transferred from the Annuity Savings Fund to the Pension Accumulation Fund. The assets credited to the Annuity Savings Fund on December 31, 2000, which represent the accumulated contributions of members to that date, amounted to \$6,078,884,844. The balance sheet also shows that the future contributions by members have a present value of \$5,256,054,210. The present value of both past and future contributions of members is therefore equal to \$11,334,939,054. The liabilities of this fund are also shown to be equal to \$11,334,939,054.

Pension Accumulation Fund

The Pension Accumulation Fund is the fund to which the contributions made by employers are credited and from which are paid all benefits on account of beneficiaries and their survivors.

The current market related actuarial value of assets creditable to the Pension Accumulation Fund on December 31, 2000, amounted to \$33,694,862,321. The liabilities on account of active members amounted to \$19,696,610,432. In addition, the balance sheet indicates liabilities of \$14,943,297,371 on account of all benefits payable to beneficiaries and survivors as of December 31, 2000. The balance sheet also shows a reserve of \$311,636,970 to provide for the increases in retirement allowances effective July 1, 2001, and a reserve from undistributed gains of \$1,056,814,998. The total liabilities of the Pension Accumulation Fund, therefore, amounted to \$36,008,359,771. The difference between these liabilities and the current assets credited to this fund is \$2,313,497,450 which represents the present value of future contributions to be made by the employers. Of this amount, \$5,781,659,631 represents the present value of prospective normal contributions by the employers, \$(4,524,977,179) represents the present value of prospective accrued liability contributions by employers and the balance of \$1,056,814,998 represents the present value of prospective contributions on account of undistributed actuarial gains.

The retirement act provides that the contributions of employers shall consist of a normal contribution and an accrued liability contribution. G.S. 135-8(d)(2) of the retirement act provides that the normal contribution rate is to be determined as the uniform percentage of the earnable compensation of the average new entrant throughout his entire period of active service and is to be determined after each valuation. The valuation indicates that the uniform normal percentage contribution rate should be set at 6.70% of compensation.

The present valuation indicates that if the employer contribution rate is set at 1.97% of payroll in accordance with the Appropriations Act of 2001, the accrued liability rate would be equal to (4.73%) of payroll effective July 1, 2002. The required employer contribution is 0.00% which will liquidate the unfunded accrued liability within an 11-year period.

SECTION V - COMMENTS ON EXPERIENCE AND GAINS

The unfunded accrued liability has decreased to \$(4,525) million from \$(2,096) million since the prior valuation. The significant items which affected the unfunded accrued liability were; amendments effective July 1, 2001 which increased the unfunded accrued liability by \$372 million, the change in the asset valuation method as of July 1, 2000 which decreased the unfunded accrued liability by \$1,236 million and the 2000 adjustment towards market value of assets which decreased the unfunded accrued liability by \$1,542 million.

The valuation results indicates that there is a preliminary reserve from undistributed gains equivalent to 1.97% of payroll. However, the System is owed 1.42% of employer contributions, the unpaid portion of the amount escrowed during the 2000/2001 fiscal year. Assuming the entire 1.42% owed to the System is paid out of the undistributed gains, the remaining undistributed gains are equivalent to 0.55% of payroll. Each 1.0% increase in retirement allowances as of July 1, 2002 to beneficiaries on the retirement roll on July 1, 2001 and a prorated portion of each 1.0% increase as of July 1, 2002 for beneficiaries who retired after July 1, 2001 but before June 30, 2002 is equivalent to 0.28% of payroll. The cost of each 0.01% increase in the defined benefit formula with a corresponding increase in retirement allowances to all current benefit recipients is 0.41% of payroll.

SECTION VI - RATES OF PAYMENT TO PENSION ACCUMULATION FUND

The valuation balance sheet gives the basis for determining the percentage rates for contributions to be made by employers to the Pension Accumulation Fund and the Death Benefit Fund under the provisions of the retirement act. The following table shows the rates of contribution payable by employers as determined from the Appropriations Act and the present valuation for the 2002/2003 fiscal year.

TABLE V**RATES OF CONTRIBUTION PAYABLE BY EMPLOYERS
FOR THE 2002/2003 FISCAL YEAR
BASED ON THE APPROPRIATIONS ACT
AND THE VALUATION AS OF DECEMBER 31, 2000**

CONTRIBUTION	RATE
Normal	6.70%
Actuarial Accrued Liability	<u>(4.73)</u>
Total	1.97%

SECTION VII - ACCOUNTING INFORMATION

1. Statement Nos. 25 and 27 of the Governmental Accounting Standards Board (GASB) set 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 PARTICIPANTS
AS OF DECEMBER 31, 2000**

GROUP	NUMBER
Retired participants and beneficiaries currently receiving benefits	107,743
Terminated participants and beneficiaries entitled to benefits but not yet receiving benefits	45,918
Active Participants	<u>292,311</u>
Total	445,972

2. Another such item is the schedule of funding progress as shown below.

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets { a }	Actuarial Accrued Liability (AAL) Entry Age { b }	Unfunded AAL (UAAL) { b - a }	Funded Ratio { a / b }	Covered Payroll { c }	UAAL as a Percentage of Covered Payroll { (b - a) / c }
12/31/96	\$25,357,459,643	\$25,478,192,954	\$120,733,311	99.5%	\$6,845,184,671	1.76%
12/31/97	27,765,057,295	28,071,156,226	306,098,931	98.9	7,373,712,592	4.15
12/31/98	31,847,438,198	30,354,221,675	(1,493,216,523)	104.9	7,994,825,684	(18.68)
12/31/99*	36,119,259,376	32,787,108,267	(3,332,142,109)	110.2	8,437,649,280	(39.49)
12/31/00	39,773,747,165	35,248,769,986	(4,524,977,179)	112.8	9,001,353,605	(50.27)

* These numbers have been revised since the previous valuation to reflect the requirements enacted by the legislature.

3. Following is the calculation of the annual pension cost and net pension obligation for the fiscal year ending June 30, 2001.

Annual Pension Cost and Net Pension Obligation* for Fiscal Year Ending 6/30/2001

(a)	Employer annual required contribution	\$513,907,000
(b)	Interest on net pension obligation	0
(c)	Adjustment to annual required contribution	0
(d)	Annual pension cost: (a) + (b) + (c)	\$513,907,000
(e)	Employer contributions made for fiscal year ending 6/30/2001	305,544,000
(f)	Increase (decrease) in net pension obligation: (d) - (e)	\$208,363,000
(g)	Net pension obligation beginning of fiscal year	0
(h)	Net pension obligation end of fiscal year: (f) + (g)	\$208,363,000

*There is pending legislation to pay back the NPO within five years.

TREND INFORMATION

<u>Year Ending</u>	<u>Annual Pension Cost (APC)</u>	<u>Percentage of APC Contributed</u>	<u>Net Pension Obligation</u>
December 31, 1998	\$630,478,242	100.0%	\$ 0
December 31, 1999	681,808,588	100.0	0
June 30, 2001	513,907,000	59.5	208,363,000

4. The annual required contribution (ARC) of the employer as a percentage of payroll, determined in accordance with the parameters of GASB 25/27, is shown below. The accrued liability rate is based on amortization of the unfunded actuarial accrued liability of \$(4,524,977,179) over an 11-year period from the valuation date.

2002/2003 FISCAL YEAR
ANNUAL REQUIRED CONTRIBUTION (ARC)
BASED ON THE VALUATION AS OF DECEMBER 31, 2000

<u>ANNUAL REQUIRED CONTRIBUTION (ARC)</u>	<u>RATE</u>
Normal	6.70%
Accrued liability	(6.70)
Total	0.00%

5. Additional information as of December 31, 2000 follows.

Valuation date	12/31/00
Actuarial cost method	Entry age
Amortization method	Level dollar open
Remaining amortization period	11 years
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment rate of return*	7.25%
Projected salary increases*	5.45-12.08%
*Includes inflation at	3.75%
Cost-of-living adjustments	N/A

SCHEDULE A**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS
FOR THE YEAR ENDING DECEMBER 31, 2000**

1.	Actuarial Value of Assets as of December 31, 1999	\$ 34,883,261,455
2.	Adjustment Due to Change in Asset Valuation Method	1,235,988,921
4.	Adjusted Actuarial Value of Assets as of December 31, 1999	36,119,250,376
4.	2000 Net Cash Flow	
	a. Contributions	1,214,610,849
	b. Disbursements	<u>1,703,255,793</u>
	c. Net Cash Flow: (a) - (b)	(488,644,944)
5.	Expected Investment Return: [(3) x .0725] + [(4)c x .03625]	2,600,932,273
6.	Expected Actuarial Value of Assets as of December 31, 2000: (3) + (4)c + (5)	38,231,537,705
7.	Market Value of Assets as of December 31, 2000	45,942,585,003
8.	Excess of Market Value over Expected Actuarial Value of Assets: (7) - (6)	7,711,047,298
9.	20% Adjustment towards Market Value: (8) x .20	1,542,209,460
10.	Actuarial Value of Assets as of December 31, 2000: (6) + (9)	39,773,747,165

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

INTEREST RATE: 7.25% per annum, compounded annually.

SEPARATIONS FROM ACTIVE SERVICE: Representative values of the assumed rates of separation from active service are as follows:

GENERAL EMPLOYEES

Annual Rates of

Age	Withdrawal* and Vesting		Death		Disability		Service Retirement**	
	Male	Female	Male	Female	Male	Female	Male	Female
	25	.0800	.0800	.0005	.0003	.0001	.0001	
30	.0800	.0789	.0006	.0003	.0004	.0004		
35	.0637	.0653	.0009	.0005	.0010	.0010		
40	.0435	.0451	.0012	.0007	.0029	.0018		
45	.0350	.0363	.0022	.0010	.0049	.0033		
50	.0450	.0350	.0039	.0017	.0084	.0050	.3000	.3000
55	.0450	.0350	.0061	.0025	.0144	.0088	.3000	.3500
60			.0092	.0042	.0240	.0138	.2000	.2000
65			.0156	.0071			.5000	.5000
69			.0248	.0109			.2500	.2500

TEACHERS

Annual Rates of

Age	Withdrawal* and Vesting		Death		Disability		Service Retirement**	
	Male	Female	Male	Female	Male	Female	Male	Female
	25	.0500	.0600	.0004	.0002	.0001	.0002	
30	.0500	.0600	.0005	.0003	.0001	.0003		
35	.0500	.0415	.0007	.0004	.0003	.0006		
40	.0316	.0275	.0009	.0006	.0007	.0010		
45	.0222	.0220	.0014	.0008	.0014	.0018		
50	.0350	.0300	.0025	.0014	.0023	.0032	.2500	.3000
55	.0350	.0300	.0043	.0021	.0047	.0055	.3000	.4000
60			.0066	.0034	.0077	.0102	.2000	.2000
65			.0101	.0058			.4000	.4000
69			.0156	.0087			.2000	.2000

* Higher rates of withdrawal are used during the first 3 years of membership in the system.

** An additional 20% of general employees and an additional 30% of teachers are assumed to retire in the year when first eligible for unreduced service retirement. Special rates are used for early service retirement.

LAW ENFORCEMENT OFFICERS

Annual Rates of

Age	Withdrawal and Vesting	Death		Disability		Service Retirement*
		Ordinary	Accidental	Ordinary	Accidental	
25	.0769	.00040	.00004	.0032	.0001	
30	.0547	.00051	.00006	.0040	.0003	
35	.0336	.00071	.00008	.0052	.0008	
40	.0223	.00102	.00011	.0068	.0011	
45	.0151	.00174	.00019	.0100	.0010	
50	.0200	.00316	.00035	.0168	.0008	.1500
55		.00509	.00057			.2000
60		.00755	.00084			.1500
65		.01248	.00139			.7500
69		.02001	.00222			.1500

* An additional 40% are assumed to retire in the year when first eligible for unreduced service retirement. Special rates are used for early service retirement.

SALARY INCREASES: Representative values of the assumed annual rates of salary increases are as follows:

Age	Annual Rate of Salary Increase	
	Teachers and General Employees	Law Enforcement Officers
25	10.64%	8.62%
30	11.90	7.79
35	9.01	6.96
40	7.28	6.50
45	6.54	6.29
50	6.21	6.21
55	6.01	6.00
60	5.70	5.95
64	5.48	5.91
65	5.47	--
69	5.45	--

DEATH AFTER RETIREMENT: According to the 1983 Group Annuity Mortality Tables set forward one year. For male teachers the table is set back one year. Special mortality tables are used for the period after disability retirement.

ADMINISTRATIVE EXPENSES: 0.10% of payroll.

MARRIAGE ASSUMPTION: 100% married with the husband four years older than his wife.

VALUATION METHOD: Entry age normal cost method. Entry age is established on an individual basis.

ASSET VALUATION METHOD: Actuarial value, as developed in Schedule A. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected actuarial value of assets, based on the assumed valuation rate of return. The amount recognized each year is 20% of the difference between market value and expected actuarial value.

SCHEDULE C**SUMMARY OF MAIN BENEFIT AND CONTRIBUTION PROVISIONS**

A summary of the main benefit provisions of the Retirement System and of the sources of revenue from which benefits are paid is presented in the following digest. Items in parentheses in the text are the provisions applicable to law enforcement officers.

"Average final compensation" as used in the summary means the average annual compensation during the four consecutive years of membership service which afford the highest such average. "Membership service" means service represented by regular contributions. "Prior service" means service prior to July 1, 1941 for which credit is allowed. "Creditable service" means the sum of prior service plus membership service. Creditable service may also include certain special purchased service.

BENEFITS**Service Retirement Allowance****Condition for Allowance**

A service retirement allowance is payable to any member who retires from service after he has attained age 60 and completed 5 years of membership service (age 55 and 5 years of creditable service) or completed 30 years of creditable service.

Amount of Allowance

On service retirement on or after age 65 (55), or after age 60 and completion of 25 years of creditable service, or after completion of 30 years of creditable service, a member receives a retirement allowance equal to 1.81% of his average final compensation multiplied by the number of years of his creditable service.

If a member who is not a law enforcement officer has not attained age 65 or has not completed 25 or more years of creditable service at the time of his retirement, his allowance is reduced 1/4 of 1% for each month by which his age at retirement is less than age 65.

In no event will a member whose creditable service commenced on or before June 30, 1963 receive a smaller retirement allowance than he would have received under the benefit provisions of the system in effect on that date.

Early Service Retirement Allowance

Condition for Allowance

An early service retirement allowance is payable to any member who retires from service after he has attained age 50 and completed 20 (15) years of creditable service but prior to becoming eligible for a service retirement allowance.

Amount of Allowance

The member's early service retirement allowance is equal to 1.81% of his average final compensation multiplied by the number of years of his creditable service at his date of retirement reduced by the lesser of:

- (i) $5/12$ ($1/3$) of 1% for each month by which his age is less than 60 (55), plus $1/4$ of 1% for each month by which his age is less than 65.
- (ii) 5% times the difference between 30 years and his creditable service at retirement.

Deferred Service Retirement Allowance

Any member who separates from service prior to becoming eligible for a service retirement allowance or an early service retirement allowance after completing 5 or more years of membership service and who leaves his total accumulated contributions in the system may receive a deferred retirement allowance, beginning at age 60 (55), computed in the same way as a service retirement allowance, or, if the member has 20 or more years of service, at age 50 computed in the same way as an early service retirement allowance, on the basis of his creditable service and compensation to the date of separation.

Return of Contributions

Upon the withdrawal of a member without a retirement allowance and upon his request, his contributions are returned to him, together with accumulated regular interest thereon if he has at least 5 years of membership service.

Upon the death of a member before retirement, his contributions, together with the full accumulated regular interest thereon, are paid to his estate or to person(s) designated by the member unless the designated beneficiary, if eligible, elects the survivor's alternate benefit described below.

Survivor's Alternate Benefit

Upon the death of a member in service who has attained age 60(55) and has completed 5 years of membership (creditable) service or completed 20 years of creditable service, his designated beneficiary may elect to receive a benefit equal to that which would have been payable under the provisions of Option 2 had the member retired on the first day of the month following his death and elected such option, in lieu of the member's accumulated contributions, provided the member had not instructed the Board of Trustees in writing that he did not wish the alternate benefit to apply.

Death After Retirement

Upon the death of a beneficiary who did not retire under an effective election of Option 2 or Option 3, an amount equal to the excess if any, of his accumulated contributions at retirement over the retirement allowance payments received is paid to a designated person or to the beneficiary's estate.

Upon the death of the survivor of a beneficiary who retired under an effective election of Option 2 or Option 3, an amount equal to the excess, if any, of the beneficiary's accumulated contributions at retirement over the total retirement allowance payments received is paid to such other person designated by the beneficiary or to the beneficiary's estate.

Optional Arrangements
at Retirement

In lieu of the full retirement allowance, any member may elect to receive a reduced retirement allowance equal in value to the full allowance, with the provision that:

Option 1 - A member retiring prior to July 1, 1993, may elect that at his death within 10 years from his retirement date, an amount equal to his accumulated contributions at retirement, less 1/120 for each month he has received a retirement allowance, is paid to his estate, or to a person(s) designated by the member, or

Option 2 - At the death of the member his allowance shall be continued throughout the life of such other person as the member shall have designated at the time of his retirement, or

Option 3 - At the death of the member one-half of his allowance shall be continued throughout the life of such other person as the member shall have designated at the time of his retirement.

Option 4 - A member may elect to receive 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 becomes eligible to receive the Social Security benefit.

Option 5 - A member retiring prior to July 1, 1993 may elect to receive a reduced retirement allowance under the provisions of Option 2 or Option 3 in conjunction with the provisions of Option 1.

Option 6 - A member may elect either 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

Future increases in allowances may be granted if the Consumer Price Index rises, provided the liabilities on account of such increases do not increase the total employer rate of contribution.

CONTRIBUTIONS

REGULAR CONTRIBUTIONS

By Members

Each member contributes 6% of his compensation.

By Employers

Employers make annual contributions consisting of a normal contribution and an accrued liability contribution. The normal contribution covers the liability on account of current service and is determined by the actuary after each valuation.

The accrued liability contribution covers the liability on account of service rendered before the establishment of the retirement system and the liability on account of increases in benefits for service rendered prior to the effective date of any amendment.

SCHEDULE D**TABLE 1**

**THE NUMBER AND ANNUAL COMPENSATION OF
ACTIVE MEMBERS DISTRIBUTED BY AGE
AS OF DECEMBER 31, 2000**

Age	Men		Women	
	Number	Amount	Number	Amount
16	1	\$ 2,435		
17	3	29,556	1	\$ 2,563
18	8	34,993	9	38,798
19	61	437,452	79	593,903
20	152	1,469,649	200	1,972,444
21	301	3,726,075	390	4,123,942
22	442	5,840,129	923	10,536,680
23	859	13,236,256	2,374	32,793,572
24	1,202	21,442,895	3,363	60,455,520
25	1,418	27,969,416	3,685	75,673,641
26	1,680	36,589,969	4,276	91,224,546
27	1,833	42,570,053	4,256	96,347,479
28	1,936	46,586,369	4,441	102,887,047
29	2,163	55,252,993	4,675	113,053,738
30	2,367	63,100,769	5,236	127,196,515
31	2,338	65,312,870	4,988	124,205,390
32	2,302	64,034,437	4,666	115,836,151
33	2,187	63,403,690	4,521	112,487,689
34	2,147	64,159,489	4,332	109,168,800
35	2,266	67,664,881	4,330	107,201,548
36	2,310	71,162,360	4,632	115,947,246
37	2,375	74,584,623	4,787	121,098,345
38	2,397	76,724,989	4,844	124,743,330
39	2,440	78,181,524	5,262	138,490,392
40	2,451	79,626,434	5,572	148,264,631
41	2,501	83,936,544	5,587	152,998,505
42	2,564	85,684,951	5,785	159,645,447
43	2,597	88,643,354	6,185	179,183,969
44	2,715	94,643,364	6,508	196,311,319
45	2,744	97,695,914	6,544	203,172,127
46	2,860	104,926,651	6,722	216,250,609
47	2,972	111,565,721	7,122	236,641,216
48	3,155	122,572,678	7,310	252,708,179
49	3,191	129,965,135	7,218	254,868,089
50	3,079	126,002,225	7,004	251,814,611
51	2,950	124,672,507	6,601	236,857,358
52	2,995	128,429,964	6,281	225,560,968
53	2,882	123,441,774	5,972	210,787,054

TABLE 1

**THE NUMBER AND ANNUAL COMPENSATION OF
ACTIVE MEMBERS DISTRIBUTED BY AGE
AS OF DECEMBER 31, 2000**

CONTINUED

Age	Men		Women	
	Number	Amount	Number	Amount
54	2,944	\$ 128,586,788	6,248	\$ 220,378,960
55	2,027	84,561,595	4,196	145,374,830
56	1,963	82,606,836	3,828	130,524,428
57	1,766	75,109,463	3,637	122,011,237
58	1,823	77,415,695	3,470	115,055,214
59	1,436	59,016,944	2,785	91,324,667
60	1,272	51,746,900	2,398	77,117,253
61	1,099	45,292,015	1,745	53,162,601
62	953	39,865,211	1,399	44,251,955
63	607	26,183,464	945	28,455,733
64	458	19,256,040	699	21,342,745
65	355	14,878,345	505	15,661,781
66	226	9,615,412	326	9,338,528
67	204	9,840,834	200	5,420,240
68	132	5,351,720	163	4,451,133
69	114	5,403,329	112	2,584,755
70	103	4,781,350	94	2,595,617
71	70	2,535,324	66	1,499,483
72	56	1,843,850	54	1,359,445
73	41	1,396,915	45	1,091,638
74	36	1,355,929	28	706,433
75	18	518,753	13	292,211
76	19	703,749	22	392,859
77	6	199,367	10	190,781
78	17	500,966	6	139,199
79	10	371,306	7	158,646
80	9	310,511	3	40,206
81	4	139,855	2	69,967
82	4	239,087	2	96,003
83	1	17,950	2	65,862
84			1	42,287
85			1	22,782
86	1	20,174		
Total	92,618	\$ 3,194,990,765	199,693	\$ 5,806,362,840

TABLE 2

**THE NUMBER AND ANNUAL COMPENSATION OF
ACTIVE MEMBERS DISTRIBUTED BY SERVICE
AS OF DECEMBER 31, 2000**

Years of Service	Men		Women	
	Number	Amount	Number	Amount
0	5,424	\$ 36,658,560	11,719	\$ 76,732,878
1	10,229	208,511,514	23,442	414,435,126
2	7,622	212,835,777	18,032	427,907,343
3	6,290	185,390,594	14,537	361,863,797
4	5,317	162,540,707	12,958	338,215,899
5	4,593	146,916,353	9,464	257,780,945
6	4,230	137,467,927	8,662	242,974,061
7	4,245	141,185,293	7,610	220,982,250
8	3,243	114,835,167	6,876	207,615,363
9	3,073	107,805,740	5,817	181,632,892
10	2,527	91,707,218	4,981	159,725,196
11	2,877	105,002,837	5,897	188,680,977
12	2,682	97,955,032	6,195	198,226,567
13	2,496	97,480,781	5,451	182,319,461
14	2,118	86,504,780	4,271	149,037,484
15	1,926	80,965,904	4,250	149,991,928
16	2,111	88,105,637	4,388	156,009,400
17	1,985	83,201,221	3,866	141,378,709
18	1,600	69,613,694	2,887	108,379,412
19	1,449	63,312,139	2,833	108,808,633
20	1,309	59,190,384	3,363	124,806,733
21	1,460	67,372,747	3,936	147,436,454
22	1,565	73,192,165	4,196	163,500,794
23	1,603	76,978,029	3,865	155,402,036
24	1,485	72,751,532	3,455	146,517,292
25	1,360	69,918,995	3,070	135,522,033
26	1,406	74,087,329	3,136	145,641,026
27	1,553	83,477,913	3,045	143,608,104
28	1,202	66,187,878	2,278	110,056,217
29	1,053	61,921,272	1,961	96,369,658
30	652	40,484,146	1,192	59,717,711
31	527	35,178,751	714	36,175,392
32	346	22,640,074	421	21,625,229
33	317	21,044,348	280	14,441,061
34	210	14,587,703	226	11,281,227
35	173	12,273,085	124	6,021,955
36	103	7,420,183	85	4,416,373
37	86	6,322,019	65	3,544,976
38	59	4,208,790	45	2,420,050

TABLE 2

**THE NUMBER AND ANNUAL COMPENSATION OF
ACTIVE MEMBERS DISTRIBUTED BY SERVICE
AS OF DECEMBER 31, 2000**

CONTINUED

Years of Service	Number	Men		Women	
		Number	Amount	Number	Amount
39	43		\$ 2,975,316	31	\$ 1,564,380
40	23		1,613,967	24	1,320,136
41	15		1,173,519	13	562,532
42	6		436,145	5	305,080
43	6		405,352	5	281,392
44	4		296,552	6	423,144
45	3		137,763	4	191,639
46	3		191,560	3	124,295
47	1		34,709		
48	2		71,469	4	166,751
49	3		209,600	3	155,949
50	2		103,475		
51				1	31,840
53	1		107,120		
58				1	33,060
Total	92,618		\$ 3,194,990,765	199,693	\$ 5,806,362,840

TABLE 3

**THE DISTRIBUTION OF THE NUMBER AND ANNUAL
RETIREMENT ALLOWANCES OF BENEFICIARIES AND
SURVIVORS BY AGE AS OF DECEMBER 31, 2000**

**SERVICE RETIREMENTS AND
DEPENDENTS OF DECEASED BENEFICIARIES**

Age	Men		Women	
	Number	Amount	Number	Amount
12	1	\$ 3,605	1	\$ 2,825
13			1	3,273
15	1	15,445		
16	1	16,887	1	8,322
17	1	8,975		
18			1	13,609
19	1	9,961	2	3,896
20			1	9,732
21	1	10,683	3	52,126
22	1	17,634	3	23,880
23	4	28,972	4	27,733
24	2	24,289	2	9,240
25	1	20,310	2	29,293
26	5	24,480	2	30,479
27	2	28,924	5	50,491
28	1	11,955	4	34,173
29	3	8,930	9	60,196
30	11	114,680	7	45,543
31	2	17,783	5	42,888
32	5	83,864	9	70,633
33	5	30,858	6	47,455
34	13	83,680	11	62,476
35	7	70,091	12	146,861
36	11	101,402	14	111,979
37	9	78,690	12	103,700
38	17	121,858	13	86,236
39	13	105,179	20	211,493
40	11	90,868	20	152,903
41	17	123,969	17	118,566
42	13	71,891	21	160,470
43	11	71,421	17	123,288
44	20	162,658	24	239,901
45	10	80,812	32	382,241
46	15	85,517	41	249,456
47	23	220,437	36	262,392
48	33	489,070	49	669,598
49	54	965,689	79	1,232,367
50	130	2,323,309	222	3,681,238

TABLE 3

**THE DISTRIBUTION OF THE NUMBER AND ANNUAL
RETIREMENT ALLOWANCES OF BENEFICIARIES AND
SURVIVORS BY AGE AS OF DECEMBER 31, 2000**

**SERVICE RETIREMENTS AND
DEPENDENTS OF DECEASED BENEFICIARIES**

CONTINUED

Age	Men		Women	
	Number	Amount	Number	Amount
51	246	\$ 5,328,337	404	\$ 7,420,979
52	397	9,746,007	715	15,186,163
53	652	16,572,617	949	21,518,769
54	756	19,969,924	1,033	23,241,311
55	653	17,386,236	933	20,895,185
56	715	19,994,572	1,121	25,655,255
57	825	22,926,812	1,337	30,892,666
58	823	23,403,046	1,359	30,954,582
59	825	22,808,058	1,274	29,518,742
60	923	24,549,128	1,699	34,724,338
61	995	25,978,570	1,901	35,862,020
62	1,246	25,173,934	2,242	33,873,856
63	1,291	24,860,693	2,451	35,379,010
64	1,381	28,757,866	2,379	33,393,716
65	1,487	29,104,149	2,751	37,621,133
66	1,426	26,198,270	2,665	34,956,735
67	1,469	27,518,399	2,459	31,878,766
68	1,442	26,563,115	2,579	32,383,078
69	1,463	27,877,726	2,535	32,101,396
70	1,419	26,154,706	2,479	30,702,004
71	1,328	24,637,717	2,348	28,834,082
72	1,276	22,816,113	2,434	28,511,034
73	1,201	21,492,736	2,250	25,830,700
74	1,115	19,060,809	2,173	23,873,272
75	1,062	17,872,062	2,078	21,630,276
76	943	15,898,306	1,923	19,962,005
77	876	13,979,978	1,780	17,928,541
78	827	14,113,686	1,700	17,177,177
79	798	13,312,624	1,766	17,446,196
80	704	9,637,108	1,565	15,162,571
81	563	7,655,160	1,444	13,505,930
82	482	6,720,535	1,297	12,196,837
83	406	5,537,915	1,185	11,422,221
84	350	4,361,270	1,072	10,090,835
85	303	3,588,266	988	10,075,779
86	265	3,445,752	902	9,015,569

TABLE 3

**THE DISTRIBUTION OF THE NUMBER AND ANNUAL
RETIREMENT ALLOWANCES OF BENEFICIARIES AND
SURVIVORS BY AGE AS OF DECEMBER 31, 2000**

**SERVICE RETIREMENTS AND
DEPENDENTS OF DECEASED BENEFICIARIES**

CONTINUED

Age	Men		Women	
	Number	Amount	Number	Amount
87	202	\$ 2,628,104	763	\$ 7,668,250
88	167	1,804,918	708	7,670,985
89	131	1,517,590	559	6,044,732
90	107	1,346,363	493	5,332,123
91	82	1,070,285	428	4,937,932
92	68	712,637	354	4,042,352
93	38	527,791	266	3,140,056
94	28	368,307	214	2,340,688
95	16	189,999	169	1,970,870
96	10	79,647	121	1,202,192
97	11	158,053	87	864,630
98	4	107,468	61	698,427
99	2	37,134	42	419,457
100	6	58,821	30	245,324
101	1	2,089	13	102,712
102	1	4,708	4	36,199
103	3	21,527	3	19,133
104	1	2,569	2	13,875
105			1	3,698
108			1	10,784
110	1	2,173		
Total	34,267	\$ 671,367,161	67,197	\$ 916,148,100
Maximum	7,793	\$ 149,641,461	26,600	\$ 351,484,849
Cash Refund	3,894	63,431,915	13,441	155,696,998
100% J&S	5,957	112,095,929	1,926	17,443,794
50% J&S	3,467	73,774,455	1,798	23,390,761
Soc Sec Level	5,852	133,813,556	11,169	222,857,011
Odd Surv	33	1,070,164	17	300,641
100% J&S Popup	3,275	66,043,999	1,672	23,157,217
50% J&S Popup	2,459	58,682,110	2,488	42,837,723
Beneficiaries	1,537	12,813,572	8,086	78,979,106

TABLE 4

**THE DISTRIBUTION OF THE NUMBER AND ANNUAL
RETIREMENT ALLOWANCES OF BENEFICIARIES AND
SURVIVORS BY AGE AS OF DECEMBER 31, 2000**

DISABILITY RETIREMENTS

Age	Men		Women	
	Number	Amount	Number	Amount
36	1	\$ 6,849		
37	1	12,468		
38	1	13,750		
39	2	23,036	4	\$ 51,717
40	1	14,030	6	77,844
41	4	43,808	14	154,760
42	8	120,516	5	76,183
43	20	278,573	15	219,609
44	14	215,668	25	361,995
45	19	336,146	35	618,301
46	33	534,838	39	699,079
47	27	406,604	58	1,060,908
48	34	687,478	72	1,253,645
49	35	660,434	87	1,851,371
50	48	854,379	86	1,841,857
51	49	1,024,120	103	2,169,478
52	67	1,319,650	93	1,908,875
53	73	1,404,327	137	2,683,702
54	83	1,813,935	114	2,336,286
55	64	1,232,246	106	1,977,449
56	62	1,145,971	124	2,225,733
57	59	1,099,642	136	2,323,301
58	76	1,404,614	134	2,403,692
59	75	1,282,766	112	1,676,365
60	84	1,409,755	123	1,707,779
61	87	1,446,134	125	1,672,510
62	60	933,936	136	1,781,058
63	71	1,006,213	117	1,623,380
64	75	1,134,174	110	1,324,376
65	69	1,069,110	99	1,296,483
66	67	913,558	110	1,338,781
67	63	937,854	94	1,100,894
68	56	830,675	84	976,112
69	62	860,275	79	895,964
70	52	703,435	80	873,528
71	62	745,616	102	1,149,693
72	61	730,706	93	902,194
73	63	784,098	90	892,906
74	77	872,199	97	955,767

TABLE 4

**THE DISTRIBUTION OF THE NUMBER AND ANNUAL
RETIREMENT ALLOWANCES OF BENEFICIARIES AND
SURVIVORS BY AGE AS OF DECEMBER 31, 2000**

DISABILITY RETIREMENTS

CONTINUED

Age	Men		Women	
	Number	Amount	Number	Amount
75	57	\$ 660,924	94	\$ 843,480
76	61	752,258	78	657,234
77	67	862,086	87	789,665
78	64	680,841	76	732,041
79	45	498,054	75	719,139
80	41	621,508	75	713,234
81	46	381,230	55	508,931
82	45	476,830	54	535,881
83	15	159,626	52	591,330
84	19	127,434	39	389,976
85	20	156,949	45	395,790
86	10	124,773	26	208,507
87	10	79,673	28	326,106
88	8	53,743	23	221,592
89	3	43,436	13	155,839
90	3	38,797	7	69,636
91	4	59,379	5	38,595
92	1	5,880	8	86,031
93			4	29,500
94			4	32,162
95			1	12,102
96			1	16,147
99			1	10,454
Total	2,384	\$ 36,097,007	3,895	\$ 54,546,947
Maximum	1,054	\$ 18,887,533	2,349	\$ 37,022,046
Cash Refund	487	6,558,325	1,118	12,242,168
100% J&S	252	2,541,795	104	938,670
50% J&S	332	4,209,845	133	1,495,817
Soc Sec Level	9	211,603	23	595,719
Odd Surv			2	27,599
100% J&S Popup	77	935,025	44	501,351
50% J&S Popup	173	2,752,881	122	1,723,577