

OHIO PUBLIC EMPLOYEES
RETIREMENT SYSTEM

Annual Actuarial Valuation
of Active and Inactive Members

December 31, 1996



GABRIEL, ROEDER, SMITH & COMPANY

Consultants & Actuaries

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August 8, 1997

The Retirement Board
Public Employees Retirement System of Ohio
Columbus, Ohio

Ladies and Gentlemen:

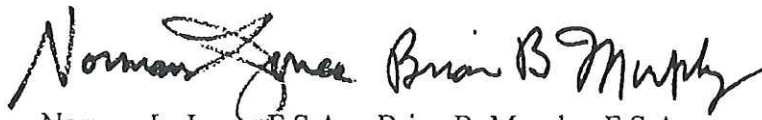
The results of the *December 31, 1996 annual actuarial valuations of members* covered by the Public Employees Retirement System of Ohio, based upon Chapter 145 of the Code as amended are presented in this report. Actuarial valuations of retired lives are covered in a separate report.

The individual member statistical data required for the valuations was furnished by your Executive Director and his Staff, together with pertinent data on financial operations. Their cooperation in furnishing these materials is acknowledged with appreciation.

The actuarial assumptions used in the valuations are summarized in Section V of this report. The assumptions are established by the Retirement Board after consulting with the actuary.

The valuation was completed in accordance with standards of practice promulgated by the Actuarial Standards Board and in conformance with Chapter 145 of the Revised Code of Ohio. To the best of our knowledge this report is complete and accurate and the actuarial methods and assumptions produced results which are reasonable.

Respectfully submitted,
GABRIEL, ROEDER, SMITH & COMPANY


Norman L. Jones, F.S.A. Brian B. Murphy, F.S.A.

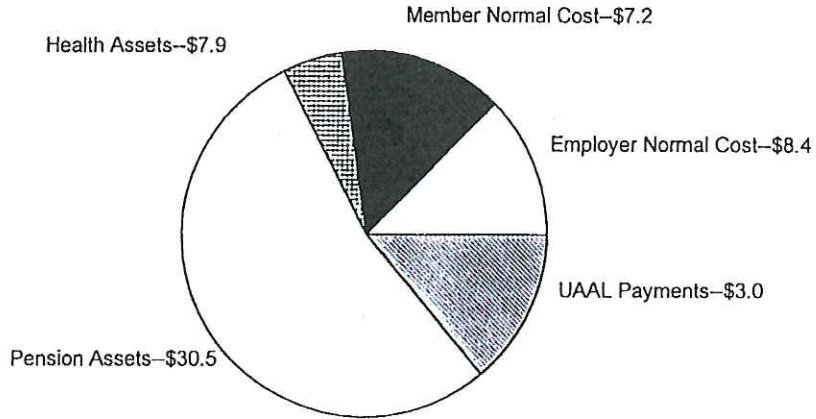
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Retirement System Totals

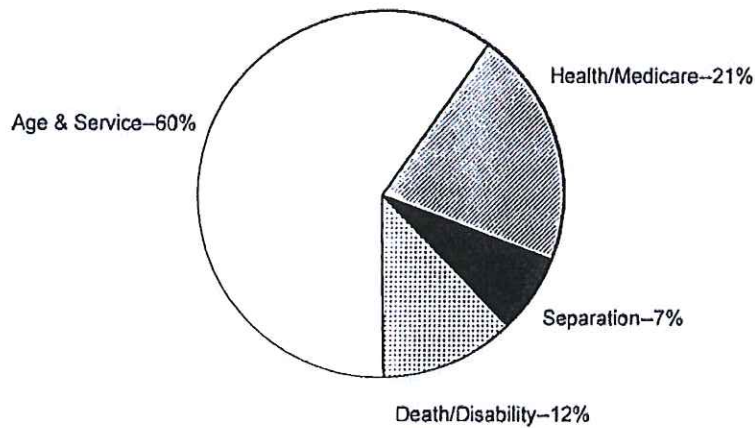


PERS OHIO

Financing \$57.1 Billion* of Benefit Promises For Present Active and Retired Members December 31, 1996



SOURCES OF FUNDS



USES OF FUNDS

* Present value of future benefits - all divisions combined. \$ amounts are in billions.

COMMENTS REGARDING THE FINANCING OF RETIREMENT ALLOWANCES

The December 31, 1996 actuarial valuations of members indicate the following about the portion of employer contribution rates allocated to financing retirement allowances:

- The employer rates are sufficient to fully fund the cost of benefit commitments being made to members for service currently being rendered.
- After satisfying current cost requirements, the remainder of the employer rates are sufficient to fund over a reasonable period of future years the unfunded portion of liabilities for service already rendered.

Key valuation results are summarized below.

Division	Active Members		Retirement Allowance Portion of Employer Contribution Rate	Amortization Years for Unfunded Pension Accrued Liabilities	
	Number	Annual Payroll (\$Millions)		This Year	Prior year
State	115,712	\$ 3,319	9.02%	8	17
Local Government	229,954	4,792	8.44%	15	21
Law Enforcement	6,742	229	11.24%	30	12
Totals	352,408	\$ 8,340			

For the Law Enforcement Division, an employer contribution rate re-allocation of 0.43% of payroll from health and medicare benefits to base retirement benefits is recommended in order to keep the amortization period from exceeding 30 years.

Experience. Experience was favorable this year. Investment return recognized for the valuation was above the assumed level and salary increases were below the assumed level. Additional detail concerning 1996 experience will be presented in a separate Gain/Loss Analysis.

Conclusion. Based on the results of the December 31, 1996 regular annual actuarial valuation, it is our opinion that the Public Employees Retirement System of Ohio continues to be in sound financial condition in accordance with actuarial principles of level percent of payroll financing.

COMMENTS REGARDING THE FINANCING OF HEALTH & MEDICARE BENEFITS

The overall cost of health insurance for retired lives was in line with assumptions during 1996. Experience was more favorable than assumed for both non-Medicare and Medicare coverage.

Division	Health and Medicare Portion of Employer Contribution Rate	Amortization Years for Unfunded Health Accrued Liabilities	
		This Year	Prior year
State	4.29%	9	24
Local Government	5.11%	10	34
Law Enforcement*	5.46%	14	19

* After recommended re-allocation of 0.43% of payroll to base retirement allowances.

In viewing experience in the health and medicare program, it is important to bear in mind a key underlying assumption:

It is assumed that per capita costs increase no faster than average salaries.

The amortization periods could be very different if this assumption were not made.

Since the inception of the program, more rapid increases have been dealt with by:

- Reducing contributions allocated to the base retirement program (largely because of extraordinary economic gains), and
- Periodic adjustments in benefits.

A separate report examines the funding of the Retiree Health/Medicare Reimbursement program in depth.

**ACTIVE MEMBERS IN VALUATION
GROUP AVERAGES - COMPARATIVE STATEMENT**

Valuation Group	Dec. 31	No. of Active Members	Group Averages			
			Attained Age	Accrued Service Yrs.	Annual Payroll	
					Average	Increase
STATE	1975	83,220	40.6 yrs.	6.5 yrs.	\$ 9,441	6.4@%
	1980	92,872	39.4	7.3	13,934	8.1@
	1985	89,256	39.2	8.4	18,677	7.4@
	1990	98,939	40.7	8.1	25,281	6.2@
	1991*	107,025	40.4	8.1	25,163	-0.5
	1992	109,701	40.0	8.3	25,224	0.2
	1993	112,748	39.9	8.3	25,673	1.8
	1994	115,238	40.1	8.5	26,580	3.5
	1995	114,596	40.4	8.8	27,962	5.2
	1996	115,712	40.3	8.9	28,684	2.6
	LOCAL GOV'T	1975	149,557	40.8 yrs.	6.1 yrs.	\$ 8,771
1980		160,797	40.7	7.4	13,035	8.2@
1985		158,285	40.1	8.3	15,983	6.2@
1990		173,220	41.5	7.9	19,506	4.1@
1991*		211,835	40.3	6.7	17,884	-8.3
1992		218,295	40.4	6.9	18,109	1.3
1993		220,410	40.7	7.3	18,869	4.2
1994		221,987	41.0	7.4	19,666	4.2
1995		223,431	41.2	7.6	20,384	3.7
1996		229,954	41.2	7.7	20,839	2.2
LAW ENFORCEMENT MEMBERS		1975	2,111	35.0 yrs.	4.9 yrs.	\$10,467
	1980	3,019	36.1	6.8	16,846	10.0@
	1985	4,207	36.5	8.4	20,103	5.5@
	1990	5,804	38.6	9.9	26,936	6.0@
	1991	6,088	38.8	9.9	27,761	3.1
	1992	5,852	39.2	10.7	28,937	4.2
	1993	6,032	39.5	11.0	30,268	4.6
	1994	6,252	39.5	11.1	31,425	3.8
	1995	6,605	39.3	11.1	32,441	3.2
	1996	6,742	39.3	11.3	33,987	4.8

@ 5 year annual compound rate.

* Reflects inclusion of part-time, seasonal, and temporary employees in compliance with OBRA 90.

BOOK VALUE RECONCILIATION OF ASSETS
(ALL DIVISIONS COMBINED)

	Calendar Year Ended December 31	
	1996	1995
Beginning Book Value	\$ 34,732,263,487	\$ 31,139,461,516
Revenues		
Member Contributions	\$ 737,292,990	\$ 698,987,279
Employer Contributions	1,181,597,072	1,107,696,800
Retiree Health Premiums	18,983,651	15,649,761
Total Revenues	\$ 1,937,873,713	\$ 1,822,333,840
Expenditures		
Retirement Benefits	\$ 1,197,187,444	\$ 1,101,960,243
System Paid Retiree Health Care	328,963,554	310,598,421
Member Paid Retiree Health Care	18,983,651	15,649,761
Retiree Medicare Reimbursement	40,250,305	43,087,126
Refunds of Member Contributions	110,043,743	108,029,484
Administrative Expenses	22,958,783	21,240,004
Other	2,353,246	2,814,923
Total Expenditures	\$ 1,720,740,726	\$ 1,603,379,962
Investment Return		
Ordinary Income	\$ 1,928,051,637	\$ 2,255,056,183
Realized Capital Value Changes	910,167,747	1,118,791,910
Total Investment Return	\$ 2,838,219,384	\$ 3,373,848,093
Ending Book Value	\$ 37,787,615,858	\$ 34,732,263,487

**DEVELOPMENT OF FUNDING VALUE OF ASSETS
(BASED UPON 4 YEAR PHASE-IN OF DIFFERENCES BETWEEN ACTUAL AND ASSUMED RETURN)**

Year Ended December 31	1994	1995	1996	1997	1998	1999
A. Funding Value Beginning of Year	\$ 29,251,753,463	\$ 31,770,701,065	\$ 34,877,055,515			
B. Market Value End of Year	30,447,493,591	36,691,952,742	39,750,587,206			
C. Market Value Beginning of Year	29,875,443,573	30,447,493,591	36,691,952,742			
D. Non-Investment/Administrative Net Cash Flow	287,583,839	240,193,882	240,091,770			
E. Investment Return						
E1. Market Total: B-C-D	284,466,179	6,004,265,269	2,818,542,694			
E2. Assumed Rate of Return	7.75%	7.75%	7.75%			
E3. Assumed Amount of Return	2,278,016,144	2,471,536,845	2,712,275,359			
E4. Amount Subject to Phase In: E1-E3	(1,993,549,965)	3,532,728,424	106,267,335			
F. Phased-In Recognition of Investment Return						
F1. Current year: 0.25xE4	(498,387,491)	883,182,106	26,566,834			
F2. First Prior Year	162,125,893	(498,387,491)	883,182,106	26,566,834		
F3. Second Prior Year	(152,296,783)	162,125,892	(498,387,492)	883,182,106	26,566,834	
F4. Third Prior Year	441,906,000	(152,296,784)	162,125,891	(498,387,493)	883,182,105	26,566,834
F5. Total Recognized Investment Gain	(46,652,381)	394,623,723	573,487,339	411,361,447	909,748,939	26,566,834
G. Funding Value End of Year: A+D+E3+F5	31,770,701,065	34,877,055,515	38,402,909,983			
H. Difference Between Market and Funding Value	(1,323,207,474)	1,844,897,227	1,347,677,223	936,315,773	26,566,834	
I. Recognized Rate of Return	7.59%	8.99%	9.39%			

The Funding Value of Assets recognizes assumed investment return (line E3) fully each year. Differences between actual and assumed investment return (line E4) are phased-in over a closed 4 year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than market value. If assumed rates are exactly realized for 3 consecutive years, funding value will become equal to market value.

**SUMMARY OF RESERVES AND TRANSFERS AFFECTING THE
EMPLOYER ACCUMULATION (EAF) FUND**

Division	EAF Balance Reported 12/31/1996	Transfer To (From) EAF	EAF Balance Before Accrual 12/31/1996	Accrued Transfers (AT)
<i>State</i>				
Pension	\$ 4,527,831,759	\$ 231,506,930	\$ 4,759,338,689	\$ (103,595,009)
Survivor Benefit	549,561,957	(281,997,309)	267,564,648	(2,632,477)
Total	5,077,393,716	(50,490,379)	5,026,903,337	(106,227,486)
<i>Local Government</i>				
Pension	5,779,314,785	353,744,269	6,133,059,054	(84,427,082)
Survivor Benefit	740,366,731	(354,476,538)	385,890,193	(7,105,740)
Total	6,519,681,516	(732,269)	6,518,949,247	(91,532,822)
<i>Law Enforcement</i>				
Pension	440,842,390	24,526,427	465,368,817	(7,772,697)
Survivor Benefit	51,753,644	(24,526,427)	27,227,217	(141,020)
Total	\$ 492,596,034	\$ -	\$ 492,596,034	\$ (7,913,717)

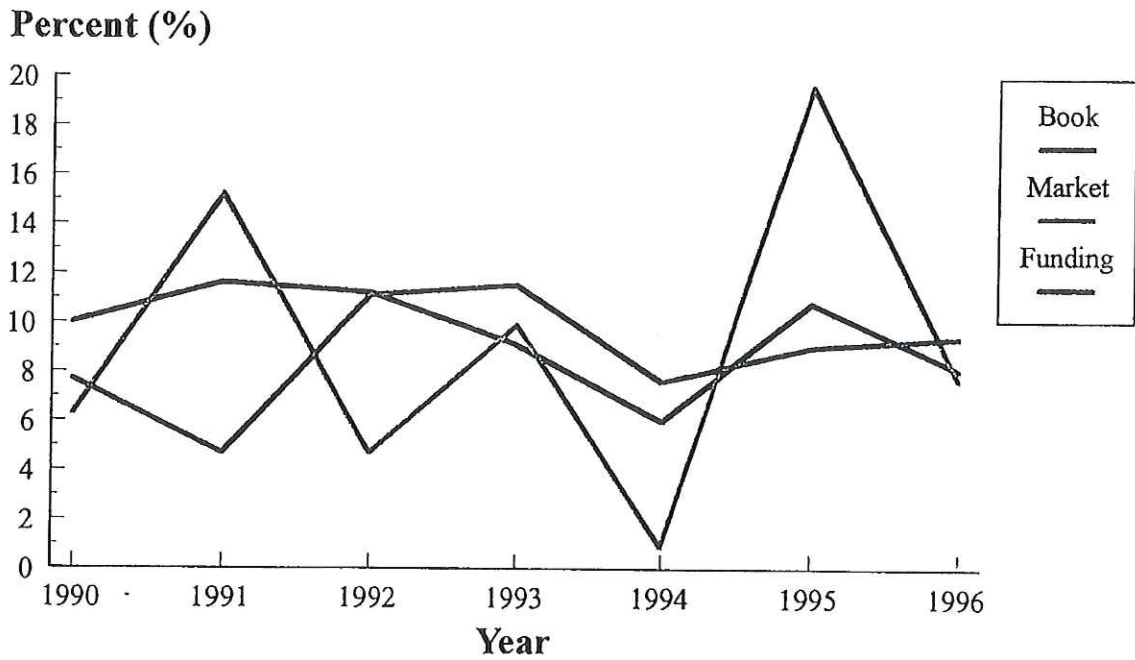
Reserve transfers from the Employer Accumulation Fund to the A & PR Fund and/or Survivor Benefit Funds are recommended in the following instances.

1. Whenever the December 31 valuation of retired lives shows unfunded accrued liabilities in any of the retired life funds.
2. To adjust retired life reserves for the payment of health insurance premiums and medicare reimbursements for the previous 12-month period if this has not already been done.
3. To cover the cost of ad-hoc post-retirement benefit increases.
4. To adjust reserves for any changes in computed liabilities resulting from assumption changes.
5. To adjust for the effect of the transfer of certain groups from one division to another.

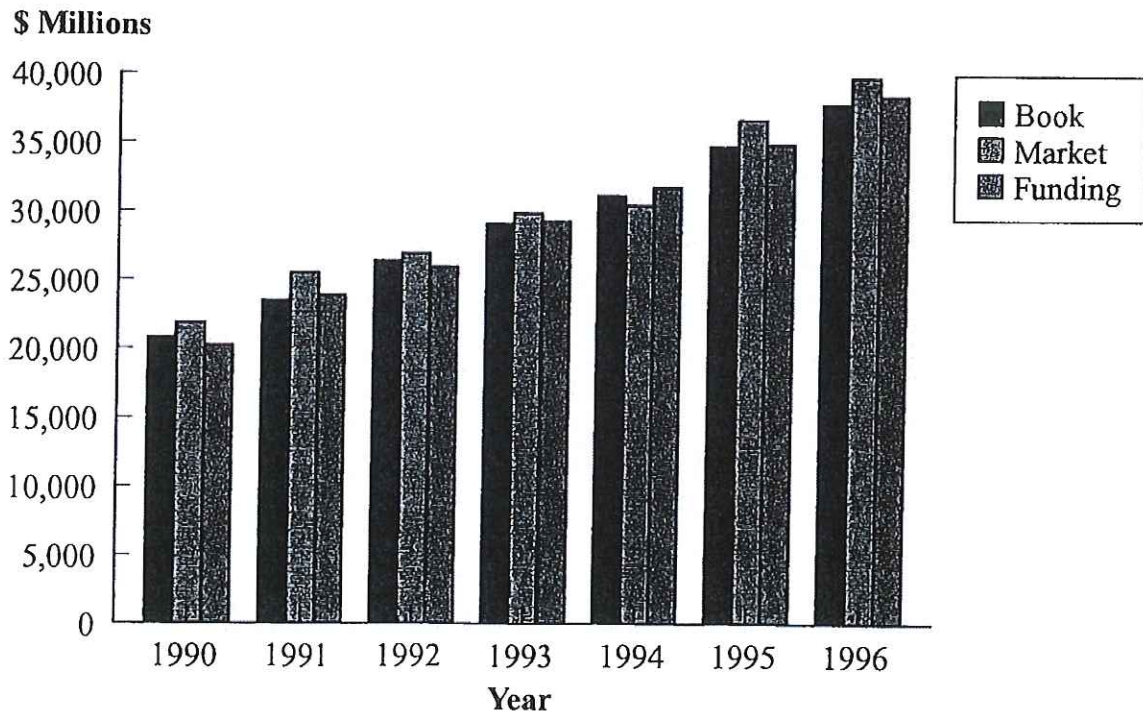
By making these annual adjustments in addition to the regular transfers when allowances are added to the rolls, the ratio of assets to liabilities for retired lives will not fall below 100% and year to year changes in that ratio will normally be isolated to decrement experience within the retired life group.

In 1992, PERS began making interim benefit payments for service retirements to shorten the delay between the retirement effective date and receipt of the first monthly check. However, reserve transfers are not made until benefit amounts are final. For purposes of this valuation, special "Accrued Transfers" were developed based upon supplemental information provided by PERS staff. The AT, when removed from the EAF is intended to put reserves in the same position they would have been if reserve transfers for interim cases had been coincident with benefit commencement.

Comparison of Rates of Return

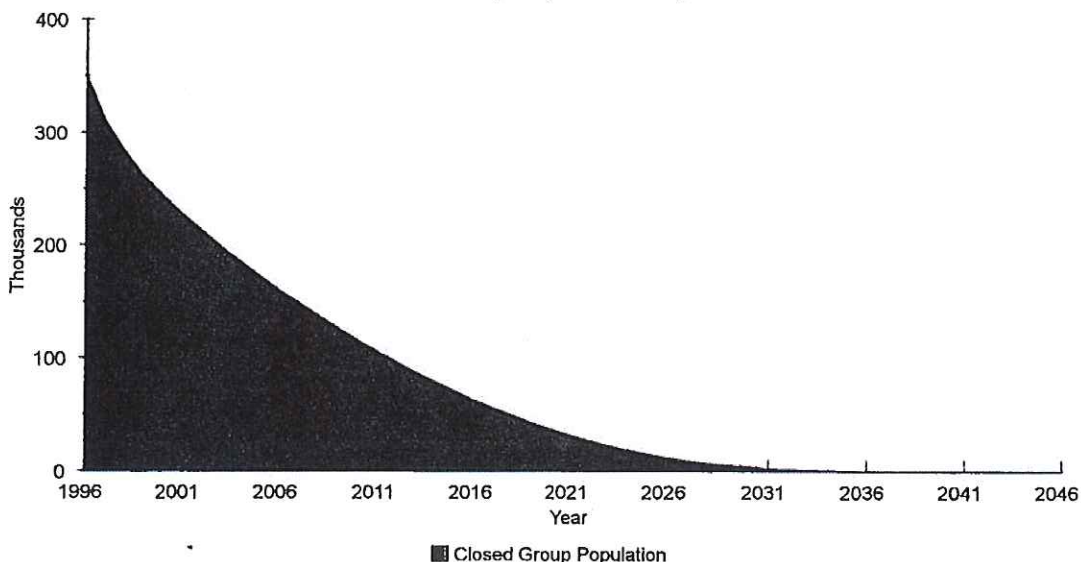


Comparison of Asset Values

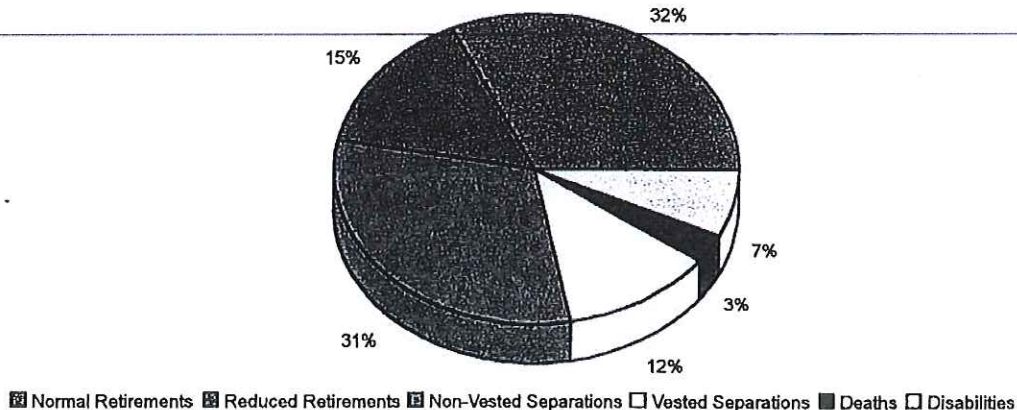


Expected Development of Present Population December 31, 1996

Closed Group Population Projection



Expected Terminations from Active Employment
For Current Active Members



The charts show the expected future development of the present population in simplified terms. The retirement system presently covers 352,408 active members. Eventually, 31% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. 59% of the present population is expected to receive monthly retirement benefits either by retiring directly from active service, or by separating from service without withdrawing contributions. Ten percent (10%) of the present population is expected to become eligible for death-in-service or disability benefits. Within 9 years, over half of the covered membership is expected to consist of new hires.

STATE DIVISION



STATE DIVISION

State Division active members included in the valuation totaled 115,712, involving an annual payroll totaling \$3,319,079,965.

Active Members in Valuation December 31, 1996

Groups	Number	Annual Payroll	Average		
			Pay	Age	Service
Men	53,018	\$ 1,637,047,671	\$ 30,877	40.0	9.0
Women	62,694	1,682,032,294	26,829	40.5	8.8
Totals	115,712	\$ 3,319,079,965	\$ 28,684	40.3	8.9

Also included in the State Division valuation were 11,379 inactive members eligible for deferred retirement allowances or contribution refunds.

STATE DIVISION
MEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 1996
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Valuation Payroll
Under 20	815	-	-	-	-	-	-	815	\$ 3,623,378
20-24	4,221	11	-	-	-	-	-	4,232	34,984,715
25-29	4,985	789	15	-	-	-	-	5,789	123,224,385
30-34	3,596	2,506	820	54	-	-	-	6,976	202,752,300
35-39	2,712	2,144	2,087	1,282	40	-	-	8,265	268,379,094
40-44	2,103	1,682	1,659	2,024	734	38	-	8,240	286,110,504
45-49	1,645	1,303	1,379	1,370	1,388	677	40	7,802	301,787,820
50-54	1,009	848	825	731	659	742	230	5,044	200,905,780
55-59	625	515	535	499	344	331	252	3,101	118,918,393
60	82	88	96	84	73	45	30	498	18,583,835
61	76	76	81	61	41	35	23	393	14,314,855
62	74	61	64	60	36	27	24	346	12,164,542
63	60	59	75	38	28	22	25	307	10,939,337
64	50	43	58	38	17	19	28	253	9,193,807
65	36	32	49	20	17	12	20	186	6,867,211
66	51	27	23	18	12	11	13	155	4,912,145
67	33	26	21	15	12	6	9	122	4,333,319
68	24	11	11	9	13	10	6	84	2,761,192
69	34	12	11	7	5	8	9	86	2,884,160
70 & Over	138	30	31	27	33	23	42	324	9,406,899
Totals	22,369	10,263	7,840	6,337	3,452	2,006	751	53,018	\$ 1,637,047,671

STATE DIVISION
WOMEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 1996
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Valuation Payroll
Under 20	900	-	-	-	-	-	-	900	\$ 3,722,066
20-24	4,814	27	-	-	-	-	-	4,841	39,274,439
25-29	5,374	1,086	41	-	-	-	-	6,501	135,532,644
30-34	3,676	2,838	1,049	97	-	-	-	7,660	201,122,119
35-39	3,232	2,555	2,065	1,546	54	-	-	9,452	270,021,353
40-44	2,822	2,398	1,782	2,162	864	43	-	10,071	306,575,500
45-49	2,111	2,147	1,688	1,546	1,164	623	38	9,317	294,666,069
50-54	1,227	1,386	1,233	1,219	743	602	117	6,527	206,338,755
55-59	593	858	850	991	603	339	117	4,351	134,894,457
60	85	110	102	155	90	52	11	605	18,587,064
61	59	89	107	110	84	40	17	506	15,471,121
62	33	74	80	94	66	38	16	401	12,465,121
63	42	55	59	92	56	36	13	353	10,293,305
64	25	46	37	64	45	34	9	260	7,736,061
65	30	41	49	47	30	23	6	226	6,428,184
66	23	29	37	37	33	23	5	187	5,606,129
67	24	20	24	24	17	15	4	128	3,052,346
68	9	8	23	22	9	12	4	87	2,224,470
69	7	8	19	16	10	4	4	68	1,862,412
70 & Over	39	37	26	52	40	25	34	253	6,158,679
Totals	25,125	13,812	9,271	8,274	3,908	1,909	395	62,694	\$ 1,682,032,294

STATE DIVISION
TOTAL ACTIVE MEMBERS IN VALUATION DECEMBER 31, 1996
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Valuation Payroll
Under 20	1,715	-	-	-	-	-	-	1,715	\$ 7,345,444
20-24	9,035	38	-	-	-	-	-	9,073	74,259,154
25-29	10,359	1,875	56	-	-	-	-	12,290	258,757,029
30-34	7,272	5,344	1,869	151	-	-	-	14,636	403,874,419
35-39	5,944	4,699	4,152	2,828	94	-	-	17,717	538,400,447
40-44	4,925	4,080	3,441	4,186	1,598	81	-	18,311	592,686,004
45-49	3,756	3,450	3,067	2,916	2,552	1,300	78	17,119	596,453,889
50-54	2,236	2,234	2,058	1,950	1,402	1,344	347	11,571	407,244,535
55-59	1,218	1,373	1,385	1,490	947	670	369	7,452	253,812,850
60	167	198	198	239	163	97	41	1,103	37,170,899
61	135	165	188	171	125	75	40	899	29,785,976
62	107	135	144	154	102	65	40	747	24,629,663
63	102	114	134	130	84	58	38	660	21,232,642
64	75	89	95	102	62	53	37	513	16,929,868
65	66	73	98	67	47	35	26	412	13,295,395
66	74	56	60	55	45	34	18	342	10,518,274
67	57	46	45	39	29	21	13	250	7,385,665
68	33	19	34	31	22	22	10	171	4,985,662
69	41	20	30	23	15	12	13	154	4,746,572
70 & Over	177	67	57	79	73	48	76	577	15,565,578
Totals	47,494	24,075	17,111	14,611	7,360	3,915	1,146	115,712	\$ 3,319,079,965

STATE DIVISION
EMPLOYEES SAVINGS FUND AND EMPLOYER ACCUMULATION FUND

The State Division's balances, at December 31, 1996, in the Employees Savings Fund and Employer Accumulation Fund were reported to the actuary as follows:

Reserve Fund	Reserve Allocation			Total
	Pension	Health	Survivor Benefit	
Employees Savings Fund	\$ 2,265,054,552	\$ -	\$ -	\$ 2,265,054,552
Employer Accumulation Fund*	4,759,338,689	2,774,487,490	267,564,648	7,801,390,827
Market Value Adjustment	188,186,744	45,176,861	13,109,902	246,473,507
Accrued Transfers	(103,595,009)		(2,632,477)	(106,227,486)
Actuarial Value of Assets	\$ 7,108,984,976	\$ 2,819,664,351	\$ 278,042,073	\$ 10,206,691,400

In financing the State Division liabilities, the actuarial value of assets was applied to the actuarial accrued liabilities for members.

* *After transfers (please see page 9).*

STATE DIVISION
DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES
DECEMBER 31, 1996

<u>Actuarial Present Value December 31, of</u>	(1) Total Actuarial Present Value	Allocation by Entry Age	
		(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1)-(2)
Age and service allowances based on service rendered before and likely to be rendered after valuation date	\$ 9,848,045,467	\$ 3,147,473,278	\$ 6,700,572,189
Disability allowances likely to be paid present active members who become permanently disabled	1,320,212,911	600,750,572	719,462,339
Employer provided portion of survivor benefits likely to be paid to spouses and children of present active members who die before retiring	463,490,710	198,558,539	264,932,171
Separation benefits (refunds of contributions, deferred allowances and employee provided portion of survivor benefits) likely to be paid present active and inactive members	1,467,723,752	1,048,367,465	419,356,287
Health Insurance and Medicare Premiums likely to be paid on behalf of active members, inactive members, and retirants and beneficiaries	<u>4,201,842,234</u>	<u>1,111,524,640</u>	<u>3,090,317,594</u>
Total	\$ 17,301,315,074	\$ 6,106,674,494	\$ 11,194,640,580
Actuarial Value of Assets			<u>10,206,691,400</u>
Unfunded Actuarial Accrued Liability			\$ 987,949,180

**STATE DIVISION
EMPLOYER CONTRIBUTIONS TO SUPPORT
RETIREMENT ALLOWANCES**

**EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL
DECEMBER 31, 1996**

Contributions for	Contributions Expressed as Percents of Payroll
Normal Cost	
Age and Service Allowances	9.32%
Disability Allowances	1.82%
Survivor's Benefits	0.59%
Separation Benefits	<u>2.98%</u>
Total Normal Cost	14.71%
(Member Current Contributions)	<u>8.50%</u>
Employer Normal Cost	6.21%
 Unfunded Actuarial Accrued Liabilities	
8 Years*	
Member Benefits	2.86%
Survivor benefits	<u>-0.05%</u>
Total	2.81%
Computed Employer Contributions	9.02%

* *The period sufficient to produce an Employer Contribution Rate of 9.02% of payroll for retirement allowances and survivor benefits.*

**STATE DIVISION
EMPLOYER CONTRIBUTIONS TO SUPPORT
HEALTH & MEDICARE BENEFITS**

**EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL
DECEMBER 31, 1996**

<u>Contributions for</u>	<u>Contributions Expressed as Percents of Payroll</u>
Normal Cost	3.31%
Unfunded Actuarial Accrued Liabilities 9 Years*	<u>0.98%</u>
Computed Employer Contributions	4.29%

* *The period sufficient to produce an Employer Contribution Rate of 4.29% of payroll for health and medicare benefits.*

**STATE DIVISION
COMPARATIVE STATEMENT**

December 31	No.	Active Members in Valuation		Total Employer Contributions as % of Payroll		
		Total (Millions)	Average Annual Payroll	Normal Cost	Unfunded Accrued	Total
1975*	83,220	\$ 786	\$ 9,441	9.24%	4.47%	13.71%
1976	84,640	929	10,975	9.43	4.28	13.71
1977	91,817	1,000	10,893	9.19	4.52	13.71
1978*	94,176	1,139	12,097	9.06	4.65	13.71
1979	92,110	1,223	13,278	8.71	5.00	13.71
1980*	92,872	1,294	13,934	7.86	5.85	13.71
1981+	91,257	1,243	13,626	7.06	6.65	13.71
1982	89,187	1,419	15,906	7.11	6.60	13.71
1983#	87,996	1,464	16,637	7.74	5.97	13.71
1984	87,648	1,574	17,962	7.82	5.89	13.71
1985@	89,256	1,667	18,677	8.68	5.03	13.71
1986	91,532	1,800	19,664	9.27	4.44	13.71
1987#	93,579	1,994	21,304	9.61	4.10	13.71
1988@	94,772	2,195	23,162	9.32	4.39	13.71
1989	95,687	2,290	23,928	9.83	3.88	13.71
1990	98,939	2,501	25,281	10.29	3.42	13.71
1991&	107,025	2,693	25,163	9.81	3.50	13.31
1992	109,701	2,767	25,224	9.78	3.53	13.31
1993	112,748	2,894	25,673	9.79	3.52	13.31
1994	115,238	3,063	26,580	10.20	3.11	13.31
1995@	114,596	3,204	27,962	10.12	3.19	13.31
1996	115,712	3,319	28,684	9.52	3.79	13.31

* Includes benefit increases and revised actuarial assumptions.
Benefits changed.
+ Revised actuarial assumptions and method of reporting payroll.
@ Revised actuarial assumptions.
& Reflects inclusion of part-time, seasonal, and temporary employees in compliance with OBRA 90 and revised actuarial assumptions.

STATE DIVISION
DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES
COMPARATIVE STATEMENT
(\$ IN MILLIONS EXCEPT AVERAGES)

Dec. 31	Active Payroll		Active Member Accrued Liabilities				UNFUNDED /PAYROLL
	Total	Average	Computed Total	Valuation Assets	Unfunded	Amort. Years#	
1975* [@]	\$ 786	\$ 9,441	\$ 1,424	\$ 549	\$ 875	35	1.11
1976 [@]	929	10,975	1,700	619	1,081	40	1.16
1977	1,000	10,893	1,872	711	1,161	37	1.16
1978* [@]	1,139	12,097	2,221	812	1,409	39	1.24
1979	1,223	13,278	2,530	829	1,701	41	1.39
1980 [@]	1,294	13,934	2,914	967	1,947	37	1.50
1981+	1,243	13,626	2,922	1,097	1,825	30	1.47
1982	1,419	15,906	3,399	1,378	2,021	29	1.42
1983*	1,464	16,637	3,829	1,606	2,223	36	1.52
1984	1,574	17,962	4,242	1,809	2,433	38	1.55
1985 [@]	1,667	18,677	4,512	2,332	2,180	37	1.31
1986	1,800	19,664	5,058	3,076	1,982	35	1.10
1987*	1,994	21,304	5,655	3,487	2,168	38	1.09
1988 [@]	2,195	23,162	6,206	3,814	2,392	37	1.09
1989	2,290	23,928	6,493	4,355	2,138	35	0.93
1990 [@]	2,501	25,281	7,314	4,896	1,990	34	0.80
1991 ^{&}	2,693	25,163	7,839	5,788	2,051	30	0.76
1992	2,767	25,224	8,489	6,523	1,966	27	0.71
1993	2,894	25,673	9,435	7,581	1,854	23	0.64
1994	3,063	26,580	10,048	8,407	1,641	21	0.54
1995	3,204	27,962	10,912	9,296	1,616	19	0.50
1995 [@]	3,204	27,962	10,652	9,926	1,356	14	0.42
1996	3,319	28,684	11,195	10,207	988	9	0.30

* Includes benefit changes.

[@] Revised actuarial assumptions.

+ Revised actuarial assumptions and method of reporting payroll.

Weighted average of separate periods for retirement allowances and for health and medicare benefits.

& Reflects inclusion of part-time seasonal, and temporary employees in compliance with OBRA 90 and revised actuarial assumptions.

While no one or two numeric indices can fully describe the financial condition of a retirement plan, the ratio of unfunded actuarial accrued liabilities divided by active member payroll ("UNFUNDED / PAYROLL" above) is significant. Unfunded actuarial accrued liabilities represent plan debt, while active member payroll represents the plan's capacity to collect contributions to pay toward debt --- thus the ratio is a relative index of condition. The lower the ratio, the greater the financial strength. And vice-versa.

LOCAL GOVERNMENT DIVISION

(Excluding Law Enforcement Members)

**LOCAL GOVERNMENT DIVISION
(EXCLUDING LAW ENFORCEMENT MEMBERS)**

Local Government Division active members included in the valuation totaled 229,954 involving an annual payroll totaling \$4,792,000,406.

Active Members in Valuation December 31, 1996

Groups	Number	Annual Payroll	Average		
			Pay	Age	Service
Men	110,070	\$ 2,481,848,047	\$ 22,548	41.8	8.1
Women	119,884	2,310,152,359	19,270	40.7	7.3
Totals	229,954	\$ 4,792,000,406	\$ 20,839	41.2	7.7

Also included in the Local Government Division were 19,808 inactive members eligible for deferred retirement allowances or contribution refunds.

LOCAL GOVERNMENT DIVISION
MEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 1996
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Valuation Payroll
Under 20	4,779	-	-	-	-	-	-	4,779	\$ 19,466,784
20-24	7,280	92	-	-	-	-	-	7,372	61,495,205
25-29	8,123	1,635	35	-	-	-	-	9,793	169,353,664
30-34	6,321	3,677	1,232	77	-	-	-	11,307	250,741,324
35-39	5,931	4,010	2,743	1,822	108	-	-	14,614	370,489,898
40-44	5,504	3,729	2,728	2,975	1,819	61	-	16,816	458,865,348
45-49	4,342	3,046	2,264	2,213	2,678	1,070	48	15,661	456,768,211
50-54	3,064	2,078	1,586	1,367	1,294	1,110	311	10,810	303,915,778
55-59	2,233	1,496	1,119	946	828	659	398	7,679	197,664,215
60	414	252	217	166	151	86	60	1,346	30,551,152
61	390	228	185	150	132	83	65	1,233	29,682,848
62	344	216	183	148	108	94	54	1,147	26,075,879
63	321	183	134	84	71	50	43	886	18,798,476
64	297	192	132	68	74	46	27	836	17,123,029
65	278	152	102	72	50	26	40	720	13,772,477
66	342	142	74	49	45	31	31	714	11,929,760
67	288	108	68	53	33	27	21	598	8,895,580
68	282	121	67	41	37	19	16	583	7,268,860
69	270	103	52	26	24	13	17	505	5,654,604
70 & Over	1,497	552	231	149	96	62	84	2,671	23,334,955
Totals	52,300	22,012	13,152	10,406	7,548	3,437	1,215	110,070	\$ 2,481,848,047

LOCAL GOVERNMENT DIVISION
WOMEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 1996
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Valuation Payroll
Under 20	5,680	-	-	-	-	-	-	5,680	\$ 20,473,789
20-24	7,736	178	-	-	-	-	-	7,914	69,433,568
25-29	9,434	2,243	78	-	-	-	-	11,755	200,349,501
30-34	7,236	4,356	1,492	117	-	-	-	13,201	262,482,978
35-39	7,676	4,340	2,669	1,846	143	-	-	16,674	348,343,543
40-44	7,279	4,478	2,514	2,441	1,355	78	-	18,145	398,908,404
45-49	5,726	4,278	2,502	2,019	1,574	655	25	16,779	383,688,085
50-54	3,645	2,982	2,180	1,837	988	649	186	12,467	280,086,099
55-59	2,200	1,994	1,575	1,544	939	469	202	8,923	193,702,876
60	323	263	208	235	187	82	26	1,324	27,104,093
61	245	232	206	188	123	88	29	1,111	23,157,706
62	238	231	159	205	151	67	25	1,076	21,935,550
63	180	160	131	128	111	61	23	794	15,927,381
64	150	149	102	100	95	39	13	648	12,534,131
65	130	125	99	90	72	39	20	575	11,225,030
66	144	90	81	77	58	28	13	491	8,236,543
67	121	73	50	59	50	36	12	401	6,967,445
68	122	68	48	41	41	18	14	352	5,398,583
69	91	48	33	40	26	24	17	279	4,545,396
70 & Over	562	239	104	127	113	63	87	1,295	15,651,658
Totals	58,918	26,527	14,231	11,094	6,026	2,396	692	119,884	\$ 2,310,152,359

LOCAL GOVERNMENT DIVISION
TOTAL ACTIVE MEMBERS IN VALUATION DECEMBER 31, 1996
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Valuation Payroll
Under 20	10,459	-	-	-	-	-	-	10,459	\$ 39,940,573
20-24	15,016	270	-	-	-	-	-	15,286	130,928,773
25-29	17,557	3,878	113	-	-	-	-	21,548	369,703,165
30-34	13,557	8,033	2,724	194	-	-	-	24,508	513,224,302
35-39	13,607	8,350	5,412	3,668	251	-	-	31,288	718,833,441
40-44	12,783	8,207	5,242	5,416	3,174	139	-	34,961	857,773,752
45-49	10,068	7,324	4,766	4,232	4,252	1,725	73	32,440	840,456,296
50-54	6,709	5,060	3,766	3,204	2,282	1,759	497	23,277	584,001,877
55-59	4,433	3,490	2,694	2,490	1,767	1,128	600	16,602	391,367,091
60	737	515	425	401	338	168	86	2,670	57,655,245
61	635	460	391	338	255	171	94	2,344	52,840,554
62	582	447	342	353	259	161	79	2,223	48,011,429
63	501	343	265	212	182	111	66	1,680	34,725,857
64	447	341	234	168	169	85	40	1,484	29,657,160
65	408	277	201	162	122	65	60	1,295	24,997,507
66	486	232	155	126	103	59	44	1,205	20,166,303
67	409	181	118	112	83	63	33	999	15,863,025
68	404	189	115	82	78	37	30	935	12,667,443
69	361	151	85	66	50	37	34	784	10,200,000
70 & Over	2,059	791	335	276	209	125	171	3,966	38,986,613
Totals	111,218	48,539	27,383	21,500	13,574	5,833	1,907	229,954	\$ 4,792,000,406

**LOCAL GOVERNMENT DIVISION
(EXCLUDING LAW ENFORCEMENT MEMBERS)
EMPLOYEES SAVINGS FUND AND EMPLOYER ACCUMULATION FUND**

The Local Government Division's balances, at December 31, 1996, in the Employees Savings Fund and Employer Accumulation Fund were reported to the actuary as follows:

Reserve Fund	Reserve Allocation			Total
	Pension	Health	Survivor Benefit	
Employees Savings Fund	\$ 3,240,227,337	\$ -	\$ -	\$ 3,240,227,337
Employer Accumulation Fund*	6,133,059,054	4,757,297,497	385,890,193	11,276,246,744
Market Value Adjustment	253,316,154	77,462,871	18,997,195	349,776,220
Accrued Transfers	(84,427,082)		(7,105,740)	(91,532,822)
Actuarial Value of Assets	\$ 9,542,175,463	\$ 4,834,760,368	\$ 397,781,648	\$ 14,774,717,479

In financing the Local Government Division Liabilities, the actuarial value of assets was applied to the accrued liabilities for members.

** After transfers (please see page 9).*

LOCAL GOVERNMENT DIVISION
(EXCLUDING LAW ENFORCEMENT MEMBERS)
DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES
DECEMBER 31, 1996

	(1) Total Actuarial Present Value	Allocation by Entry Age	
		(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1)-(2)
Age and service allowances based on service rendered before and likely to be rendered after valuation date	\$ 13,272,248,714	\$ 4,065,343,609	\$ 9,206,905,105
Disability allowances likely to be paid present active members who become permanently disabled	1,957,607,372	931,361,094	1,026,246,278
Employer provided portion of survivor benefits likely to be paid to spouses and children of present active members who die before retiring	645,627,763	266,843,310	378,784,453
Separation benefits (refunds of contributions, deferred allowances and employee provided portion of survivor benefits) likely to be paid present active and inactive members	2,233,483,544	1,559,839,241	673,644,303
Health Insurance and Medicare Premiums likely to be paid on behalf of active members, inactive members, and retirants and beneficiaries	<u>7,216,580,372</u>	<u>2,042,737,548</u>	<u>5,173,842,824</u>
Total	\$ 25,325,547,765	\$ 8,866,124,802	\$ 16,459,422,963
Actuarial Value of Assets			<u>14,774,717,479</u>
Unfunded Actuarial Accrued Liability			\$ 1,684,705,484

LOCAL GOVERNMENT DIVISION
EMPLOYER CONTRIBUTIONS TO SUPPORT
RETIREMENT ALLOWANCES
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL
DECEMBER 31, 1996

Contributions for	Contributions Expressed as Percents of Payroll
Normal Cost	
Age and Service Allowances	8.83%
Disability Allowances	2.02%
Survivor's Benefits	0.59%
Separation Benefits	<u>3.22%</u>
Total Normal Cost	14.66%
(Member Current Contributions)	<u>8.50%</u>
Employer Normal Cost	6.16%
Unfunded Actuarial Accrued Liabilities	
15 Years*	
Member Benefits	2.31%
Survivor benefits	<u>-0.03%</u>
Total	2.28%
Computed Employer Contributions	8.44%

* *The period sufficient to produce an Employer Contribution Rate of 8.44% of payroll for retirement allowances and survivor benefits.*

LOCAL GOVERNMENT DIVISION
EMPLOYER CONTRIBUTIONS TO SUPPORT
HEALTH AND MEDICARE BENEFITS
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL
DECEMBER 31, 1996

Contributions for	Contributions Expressed as Percents of Payroll
Normal Cost	4.29%
Unfunded Actuarial Accrued Liabilities 10 Years*	<u>0.82%</u>
Computed Employer Contributions	5.11%

* *The period sufficient to produce an Employer Contribution Rate of 5.11% of payroll for health and medicare benefits.*

**LOCAL GOVERNMENT DIVISION
(EXCLUDING LAW ENFORCEMENT MEMBERS)
COMPARATIVE STATEMENT^(a)**

December 31	No.	Active Members in Valuation		Increase	Total Employer Contributions as % of Payroll		
		Total (Millions)	Average Annual Payroll		Normal Cost	Unfunded Accrued	Total
1975*#	149,557	\$1,312	\$ 8,771	1.5%	9.27%	4.68%	13.95%
1976	153,785	1,394	9,068	3.4	10.12	3.83	13.95
1977	177,034	1,662	9,388	3.5	9.94	4.01	13.95
1978*#	177,825	1,878	10,563	12.5	9.92	4.03	13.95
1979	166,536	1,951	11,714	10.9	9.38	4.57	13.95
1980*#	160,797	2,096	13,035	11.3	8.37	5.58	13.95
1981+	157,753	2,007	12,722	7.5	7.75	6.20	13.95
1982	155,920	2,171	13,923	9.4	7.91	6.04	13.95
1983#	156,330	2,278	14,571	4.7	8.43	5.52	13.95
1984	156,765	2,392	15,261	4.7	8.51	5.44	13.95
1985*	158,285	2,530	15,983	4.7	8.47	5.48	13.95
1986	158,775	2,649	16,685	4.4	9.23	4.72	13.95
1987#	161,066	2,771	17,204	3.1	9.63	4.32	13.95
1988*	165,613	3,003	18,134	5.4	9.56	4.39	13.95
1989	169,409	3,164	18,675	3.0	10.10	3.85	13.95
1990*	173,220	3,379	19,506	4.4	10.71	3.24	13.95
1991&	211,835	3,789	17,884	(8.3)	10.15	3.40	13.55
1992	218,295	3,953	18,109	1.3	10.09	3.46	13.55
1993	220,410	4,159	18,869	4.2	10.11	3.44	13.55
1994	221,987	4,366	19,666	4.2	10.60	2.95	13.55
1995	223,431	4,555	20,384	3.7	10.53	3.02	13.55
1996	229,954	4,792	20,839	2.2	10.45	3.10	13.55

^(a) Includes Law Enforcement Members before 1975.

* Revised actuarial assumptions.

Includes benefit changes.

+ Revised actuarial assumptions and method of reporting payroll.

& Reflects inclusion of part-time, seasonal and temporary employees in compliance with OBRA 90 and revised actuarial assumptions.

LOCAL GOVERNMENT DIVISION
(EXCLUDING LAW ENFORCEMENT MEMBERS)
DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES
COMPARATIVE STATEMENT
(\$ IN MILLIONS EXCEPT AVERAGES)

Dec. 31	Active Payroll		Active Member Accrued Liabilities				UNFUNDED /PAYROLL
	Total	Average	Computed Total	Valuation Assets	Unfunded	Amort. Years#	
1975	\$1,332	\$ 8,771	\$ 2,334	\$ 811	\$1,523	35	1.14
1976@	1,394	9,068	2,405	907	1,498	42	1.07
1977	1,662	9,388	2,848	986	1,862	42	1.12
1978*@	1,878	10,563	3,372	1,156	2,216	44	1.18
1979	1,951	11,714	3,947	1,215	2,732	48	1.40
1980@	2,096	13,035	4,670	1,425	3,245	41	1.55
1981+	2,007	12,722	4,728	1,655	3,073	35	1.53
1982	2,171	13,923	5,286	2,105	3,181	34	1.47
1983*	2,278	14,571	5,985	2,445	3,540	42	1.55
1984	2,392	15,261	6,562	2,743	3,819	44	1.60
1985@	2,530	15,983	7,127	3,534	3,593	37	1.42
1986	2,649	16,685	7,715	4,584	3,131	35	1.18
1987*	2,771	17,204	8,238	5,067	3,171	38	1.14
1988@	3,003	18,134	8,964	5,526	3,438	39	1.14
1989	3,164	18,675	9,343	6,302	3,041	37	0.96
1990@	3,379	19,506	10,388	6,960	2,902	41	0.86
1991&	3,789	17,884	11,462	8,219	3,243	37	0.86
1992	3,953	18,109	12,475	9,463	3,012	31	0.76
1993	4,159	18,869	14,009	10,997	3,012	28	0.72
1994	4,366	19,666	14,773	12,032	2,741	28	0.63
1995	4,555	20,384	15,899	13,304	2,595	24	0.57
1995@	4,555	20,384	15,680	13,304	2,376	26	0.52
1996	4,792	20,839	16,459	14,775	1,684	13	0.35

* Includes benefit changes.

@ Revised actuarial assumptions.

+ Revised actuarial assumptions and method of reporting payroll.

Weighted average of separate periods for retirement allowances and for health and medicare benefits.

& Reflects inclusion of part-time, seasonal, and temporary employees in compliance with OBRA 90 and revised actuarial assumptions.

While no one or two numeric indices can fully describe the financial condition of a retirement plan, the ratio of unfunded actuarial accrued liabilities divided by active member payroll ("UNFUNDED / PAYROLL" above) is significant. Unfunded accrued liabilities represent plan debt, while active member payroll represents the plan's capacity to collect contributions to pay toward debt --- thus the ratio is a relative index of condition. The lower the ratio, the greater the financial strength. And vice-versa.

LAW ENFORCEMENT DIVISION



LAW ENFORCEMENT DIVISION

Law Enforcement active members included in the valuation totaled 6,742, involving an annual payroll totaling \$229,138,403.

Active Members in Valuation December 31, 1996

Groups	Number	Annual Payroll	Average		
			Pay	Age	Service
Men	6,027	\$ 207,102,704	\$ 34,362	39.4	11.5
Women	715	22,035,699	30,819	38.7	9.5
Totals	6,742	\$ 229,138,403	\$ 33,987	39.3	11.3

Also included with the Law Enforcement members were 187 inactive members eligible for deferred retirement allowances or contribution refunds.

LAW ENFORCEMENT DIVISION
MEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 1996
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Valuation Payroll
Under 20	2	-	-	-	-	-	-	2	\$ 16,440
20-24	198	3	-	-	-	-	-	201	4,251,194
25-29	686	290	1	-	-	-	-	977	27,052,156
30-34	275	490	154	7	-	-	-	926	30,310,157
35-39	138	267	375	206	1	-	-	987	34,707,921
40-44	92	155	244	422	164	1	-	1,078	40,433,800
45-49	59	105	125	231	288	81	1	890	34,416,867
50-54	34	65	78	111	120	108	18	534	20,494,467
55-59	17	21	47	56	68	42	21	272	10,131,990
60	6	4	8	4	7	4	5	38	1,294,727
61	3	1	6	4	9	5	3	31	1,046,866
62	1	2	2	6	4	1	3	19	681,265
63	3	2	1	2	2	1	1	12	392,900
64	2	5	1	4	1	1	5	19	670,824
65	3	1	1	3	1	-	-	9	194,210
66	3	-	-	1	1	2	2	9	292,859
67	-	-	1	2	2	-	1	6	208,874
68	-	-	-	-	1	1	-	2	58,271
69	-	-	-	1	-	2	-	3	124,369
70 & Over	2	2	-	4	2	-	2	12	322,547
Totals	1,524	1,413	1,044	1,064	671	249	62	6,027	\$ 207,102,704

LAW ENFORCEMENT DIVISION
WOMEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 1996
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Valuation Payroll
Under 20	-	-	-	-	-	-	-	-	\$ -
20-24	18	2	-	-	-	-	-	20	380,828
25-29	81	33	-	-	-	-	-	114	3,039,666
30-34	37	61	27	1	-	-	-	126	3,929,862
35-39	32	42	36	18	1	-	-	129	4,143,433
40-44	18	35	40	40	11	1	-	145	4,841,116
45-49	14	13	21	29	9	1	-	87	2,862,268
50-54	5	7	14	21	6	2	-	55	1,677,212
55-59	3	4	2	12	2	1	-	24	707,364
60	-	-	1	1	1	1	-	4	148,547
61	-	-	2	-	-	-	-	2	72,872
62	-	-	-	-	1	-	-	1	35,129
63	-	-	-	3	-	-	-	3	68,671
64	-	-	-	1	-	1	1	3	81,767
65	-	1	-	1	-	-	-	2	46,964
66	-	-	-	-	-	-	-	-	-
67	-	-	-	-	-	-	-	-	-
68	-	-	-	-	-	-	-	-	-
69	-	-	-	-	-	-	-	-	-
70 & Over	-	-	-	-	-	-	-	-	-
Totals	208	198	143	127	31	7	1	715	\$ 22,035,699

LAW ENFORCEMENT DIVISION
TOTAL ACTIVE MEMBERS IN VALUATION DECEMBER 31, 1996
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Valuation Payroll
Under 20	2	-	-	-	-	-	-	2	\$ 16,440
20-24	216	5	-	-	-	-	-	221	4,632,022
25-29	767	323	1	-	-	-	-	1,091	30,091,822
30-34	312	551	181	8	-	-	-	1,052	34,240,019
35-39	170	309	411	224	2	-	-	1,116	38,851,354
40-44	110	190	284	462	175	2	-	1,223	45,274,916
45-49	73	118	146	260	297	82	1	977	37,279,135
50-54	39	72	92	132	126	110	18	589	22,171,679
55-59	20	25	49	68	70	43	21	296	10,839,354
60	6	4	9	5	8	5	5	42	1,443,274
61	3	1	8	4	9	5	3	33	1,119,738
62	1	2	2	6	5	1	3	20	716,394
63	3	2	1	5	2	1	1	15	461,571
64	2	5	1	5	1	2	6	22	752,591
65	3	2	1	4	1	-	-	11	241,174
66	3	-	-	1	1	2	2	9	292,859
67	-	-	1	2	2	-	1	6	208,874
68	-	-	-	-	1	1	-	2	58,271
69	-	-	-	1	-	2	-	3	124,369
70 & Over	2	2	-	4	2	-	2	12	322,547
Totals	1,732	1,611	1,187	1,191	702	256	63	6,742	\$ 229,138,403

LAW ENFORCEMENT DIVISION
EMPLOYEES SAVINGS FUND AND EMPLOYER ACCUMULATION FUND

The Law Enforcement fund balances, at December 31, 1996, in the Employees Savings Fund and Employer Accumulation Fund were reported to the actuary as follows:

Reserve Fund	Reserve Allocation			Total
	Pension	Health	Survivor Benefit	
Employees Savings Fund	\$ 175,341,351	\$ -	\$ -	\$ 175,341,351
Employer Accumulation Fund*	465,368,817	211,100,683	27,227,217	703,696,717
Market Value Adjustment	14,541,821	3,437,343	1,065,235	19,044,399
Accrued Transfers	(7,772,697)		(141,020)	(7,913,717)
Actuarial Value of Assets	\$ 647,479,292	\$ 214,538,026	\$ 28,151,432	\$ 890,168,750

In financing the Law Enforcement Member's liabilities, the actuarial value of assets was applied to the accrued liabilities for members.

* *After transfers (please see page 9).*

LAW ENFORCEMENT DIVISION
DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES
DECEMBER 31, 1996

	(1) Total Actuarial Present Value	Allocation by Entry Age	
		(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1)-(2)
Actuarial Present Value December 31, of			
Age and service allowances based on service rendered before and likely to be rendered after valuation date	\$ 886,362,630	\$ 329,067,769	\$ 557,294,861
Disability allowances likely to be paid present active members who become permanently disabled	203,941,609	92,303,636	111,637,973
Employer provided portion of survivor benefits likely to be paid to spouses and children of present active members who die before retiring	49,462,124	22,375,927	27,086,197
Separation benefits (refunds of contributions, deferred allowances and employee provided portion of survivor benefits) likely to be paid present active and inactive members	70,229,155	55,687,978	14,541,177
Health Insurance and Medicare Premiums likely to be paid on behalf of active members, inactive members, and retirants and beneficiaries	356,243,050	120,603,230	235,639,820
Total	\$ 1,566,238,568	\$ 620,038,540	\$ 946,200,028
Actuarial Value of Assets			890,168,750
Unfunded Actuarial Accrued Liability			\$ 56,031,278

**LAW ENFORCEMENT DIVISION
EMPLOYER CONTRIBUTIONS TO SUPPORT
RETIREMENT ALLOWANCES
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL
DECEMBER 31, 1996**

Contributions for	Contributions Expressed as Percents of Payroll
Normal Cost	
Age and Service Allowances	12.86%
Disability Allowances	3.64%
Survivor's Benefits	0.89%
Separation Benefits	<u>2.11%</u>
Total Normal Cost	19.50%
(Member Current Contributions)	<u>9.00%</u>
Employer Normal Cost	10.50%
Unfunded Actuarial Accrued Liabilities	
30 Years*	
Member Benefits	0.76%
Survivor benefits	<u>-0.02%</u>
Total	0.74%
Computed Employer Contributions	11.24%

* *The period sufficient to produce an Employer Contribution Rate of 11.24% of payroll for retirement allowances and survivor benefits.*

**LAW ENFORCEMENT DIVISION
EMPLOYER CONTRIBUTIONS TO SUPPORT
HEALTH AND MEDICARE BENEFITS
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL
DECEMBER 31, 1996**

<u>Contributions for</u>	<u>Contributions Expressed as Percents of Payroll</u>
Normal Cost	4.70%
Unfunded Actuarial Accrued Liabilities 14 Years*	<u>0.76%</u>
Computed Employer Contributions	5.46%

* *The period sufficient to produce an Employer Contribution Rate of 5.46% of payroll for health and medicare benefits.*

**LAW ENFORCEMENT DIVISION
COMPARATIVE STATEMENT**

December 31	No.	Active Members in Valuation		Total Employer Contributions as % of Payroll			
		Total (Thousands)	Average	Annual Payroll	Increase %	Total	
						Normal Cost	Unfunded Accrued
1975	2,111	\$ 22,134	\$10,467	-	13.49%	4.61%	18.10%
1976	2,214	22,213	10,033	(4.1)	13.37	4.73	18.10
1977	2,537	32,204	12,694	26.5	14.20	3.90	18.10
1978* ^(a)	2,699	38,129	14,127	11.3	14.51	3.59	18.10
1979	2,867	43,249	15,085	6.8	14.28	3.82	18.10
1980* ^(a)	3,019	50,858	16,846	11.7	13.23	4.87	18.10
1981* ^(a)	3,613	57,147	15,817	2.6	12.08	6.02	18.10
1982	3,748	64,625	17,243	9.0	12.04	6.06	18.10
1983	3,981	72,273	18,155	5.3	12.65	5.45	18.10
1984	4,070	77,979	19,159	5.5	12.72	5.38	18.10
1985 ^(a)	4,207	84,574	20,103	4.9	12.78	5.32	18.10
1986	4,332	94,202	21,746	8.2	13.58	4.52	18.10
1987*	4,336	99,487	22,945	5.5	14.09	4.01	18.10
1988 ^(a) #	4,483	109,469	24,419	6.4	14.01	1.99	16.00
1989	5,587	142,788	25,557	4.7	14.05	1.95	16.00
1990	5,804	156,339	26,936	5.4	14.31	1.69	16.00
1991 ^(a)	6,088	169,008	27,761	3.1	14.38	2.32	16.70
1992	5,852	169,337	28,937	4.2	14.58	2.12	16.70
1993	6,032	182,576	30,268	4.6	14.35	2.35	16.70
1994	6,252	196,467	31,425	3.8	14.66	2.04	16.70
1995	6,605	214,273	32,441	3.2	14.42	2.28	16.70
1996	6,742	229,138	33,987	4.8	15.20	1.50	16.70

* Includes benefit changes.
+ Revised method of reporting payroll.
^(a) Revised actuarial assumptions.
Employee and employer contribution rates reduced.

LAW ENFORCEMENT DIVISION
DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES
COMPARATIVE STATEMENT
(\$ IN MILLIONS EXCEPT AVERAGES)

Dec. 31	Active Payroll		Active Member Accrued Liabilities			Amort. Years#	UNFUNDED /PAYROLL
	Total	Average	Computed Total	Valuation Assets	Unfunded		
1975	\$ 22	\$10,467	\$ 22	\$ -	\$22		0.99
1976	22	10,033	33	6	27	36	1.20
1977	32	12,694	44	12	32	36	0.99
1978* [@]	38	14,127	60	21	39	43	1.03
1979	43	15,085	73	30	43	38	1.00
1980 [@]	51	16,846	95	41	54	29	1.06
1981* ^{++@}	57	15,817	110	59	51	18	0.89
1982	65	17,243	126	74	52	16	0.80
1983*	72	18,155	153	96	57	18	0.79
1984	78	19,159	182	117	65	19	0.83
1985 [@]	85	20,103	208	152	56	15	0.66
1986	94	21,746	245	203	42	11	0.45
1987*	99	22,945	277	233	44	13	0.44
1988 [@]	109	24,419	323	290	33	19	0.30
1989	143	25,557	448	383	65	33	0.45
1990	156	26,936	510	431	54	28	0.35
1991 [@]	169	27,761	589	508	81	28	0.50
1992	169	28,937	634	580	54	18	0.32
1993	183	30,268	725	663	62	17	0.34
1994	196	31,425	787	727	60	18	0.31
1995	214	32,441	867	801	66	16	0.31
1995 [@]	214	32,441	858	801	57	24	0.27
1996	229	33,987	946	890	56	13	0.24

* Includes benefit changes.

+ Revised method of reporting payroll.

[@] Revised actuarial assumptions.

Weighted average of separate periods for retirement allowances and for health and medicare benefits.

While no one or two numeric indices can fully describe the financial condition of a retirement plan, the ratio of unfunded actuarial accrued liabilities divided by active member payroll ("UNFUNDED / PAYROLL" above) is significant. Unfunded accrued liabilities represent plan debt, while active member payroll represents the plan's capacity to collect contributions to pay toward debt --- thus the ratio is a relative index of condition. The lower the ratio, the greater the financial strength. And vice-versa.

BENEFITS AND CONDITIONS EVALUATED



BENEFITS AND CONDITIONS EVALUATED

Age and service retirement - State and Local Government Members. A member who (i) has attained age 60 years and has 5 or more years of service credit, or (ii) has attained age 55 years and has 25 or more years of service credit, or (iii) has 30 or more years of service credit, may retire with an age and service retirement allowance.

Final average salary ("FAS") means the average of the annual earnings for the 3 highest calendar years of compensation.

Age and service allowance - State and Local Government Members. A retiring member's age and service allowance is equal to Ohio service credit times the greater of \$86, or 2.1% of FAS (2.5% for years of service over 30 years). The allowance is then adjusted by factors based on attained age or years of service as determined in the following schedule:

Attained Age	OR	Years of Service Credit	Percentage of Base Amount
58		25	75%
59		26	80
60		27	85
61		28	88
62		29	90
63		29	91
64		29	94
65		29	95
64		29	97
65		30 or more	100

Maximum allowance is 100% of FAS. Minimum allowance is based upon twice the member's savings funding balance at retirement together with interest credits.

Age and service allowance - Law Enforcement Members. A law enforcement member who has attained age 52 and has 25 or more years of credited service may retire with an age and service allowance equal to 2.5% of FAS times the first 20 years of service credit, plus 2.1% of FAS times service credit in excess of 20 years but less than 25 years, and 1.5% of FAS times service credit in excess of 25 years. Maximum allowance is 90% of FAS. Minimum allowance is based upon twice the member's savings fund balance at retirement together with interest credits.

A law enforcement member may retire as early as age 48 with reduced benefits.

Health Care Coverage. Health care coverage is available to persons being paid a monthly allowance from PERS. Members retiring after June 13, 1986 must have 10 or more years of service credit to be eligible for this benefit.

Medicare premiums. Medicare part B premiums are paid for those eligible, upon proof of coverage. Members retiring after June 13, 1986 must have 10 or more years of service credit to be eligible for this benefit.

Disability retirement. The disability program was revised in order to comply with the Older Workers Benefit Protection Act. Employees becoming members after July 29, 1992 are covered by the post July 29, 1992 program. Other members can remain covered by the pre July 29, 1992 program or elect to be covered by the post July 29, 1992 program.

Features of the pre July 29, 1992 disability program are:

- a) Upon becoming permanently disabled after completion of at least 5 years of service but before attaining age 60, a member is eligible for a disability allowance.
- b) The amount of the allowance is 2.1% of FAS times the service the member would have had if employment had continued to age 60.
- c) Maximum allowance is 75% of FAS, minimum allowance is 30% of FAS.

Features of the post July 29, 1992 disability program are:

- a) A member may apply at any age after completion of 5 years of service.
- b) A disability benefit equal to the greater of 45% of FAS or the accrued benefit based on actual service with no early retirement reduction (maximum 60% of FAS). The disability benefit period is to age 65 if the member is disabled prior to age 60. The benefit period declines gradually from 60 months for members disabled at ages 60 and 61 to 12 months for members disabled at age 69 or older.
- c) After the disability benefit ends, a service retirement benefit equal to the greater of the benefit based on actual service plus service credit granted for the period of disability benefits (maximum 45% of FAS) or the accrued benefit based on actual service is payable for life.

Death while eligible to retire. If a member dies in service after becoming eligible to retire with an age and service allowance and leaves a surviving spouse or other sole dependent beneficiary, the survivor receives the same amount that would have been paid had the member retired the last day of the month of death and elected the 100% joint and survivor form of payment.

Survivor (death-in-service) allowances. Upon the death of a member with at least 1-1/2 years of Ohio service credit and with at least 1/4 year of Ohio contributing service credit within the 2-1/2 years prior to the date of death, the following allowances are payable:

- (a) Spouse: A monthly allowance, commencing at age 62, or age 50 if the deceased member had 10 or more years of Ohio service credit, or regardless of age if caring for a dependent child or if mentally or physically incompetent. Allowance equals 25% of the deceased member's FAS. Minimum monthly allowance is \$96, or \$106 if deceased member had 10 or more years of Ohio service credit. Allowance terminates upon remarriage.

(b) Spouse's child-care allowance: An allowance of 40% of FAS is payable to the spouse of a deceased member while caring for 1 dependent child, with a minimum monthly allowance of \$186. Allowance is 50% of FAS if 2 dependent children, or 55% of FAS if 3 dependent children, or 60% of FAS if 4 or more dependent children. Minimum monthly allowance is \$236 for 2 or more children. A dependent child is defined to be an unmarried child under the age of 18, or 22 if attending an approved school.

(c) Children's allowances: A monthly allowance payable to each child of the deceased member who is unmarried and under the age of 18, or 22 if attending an approved school. Allowances equal 25% of the deceased member's FAS for 1 child, an equal share of 40% of FAS if there are 2 children, an equal share of 50% of FAS if there are 3 children, an equal share of 55% of FAS if there are 4 children, or an equal share of 60% of FAS if there are 5 or more children. Minimum monthly allowance is \$96 for 1 child, \$186 for 2 children, and \$236 for 3 or more children.

(d) Dependent parent's allowance: A monthly allowance is payable to a dependent parent aged 65 or more (earlier if mentally or physically incompetent) who received at least one-half support from the member during the 12-month period immediately preceding the member's death. Allowance equals 25% of FAS for 1 parent with a minimum monthly allowance of \$96, and 40% of FAS shared equally for 2 parents with minimum monthly allowances totaling \$186.

Post-retirement increases. Each July after June 30, 1971 or the annual anniversary established 12 months after the initial date of retirement, each allowance is recomputed to be equal to the initial allowance increased by 3.0% for each completed year of retirement. The maximum recomputed allowance equals the initial allowance adjusted for increases in the Consumer Price Index. The minimum recomputed allowance equals the initial allowance.

Post-retirement death benefit. Upon the death of an age and service or disability retiree, a death benefit in the following amount is payable:

Service Credit At Retirement	Amount of Death Benefit
5 to 9 years	\$ 500
10 to 14 years	1,000
15 to 19 years	1,500
20 to 24 years	2,000
25 or more years	2,500

Deferred benefits. A member with at least 5 years of service credit who leaves service before being eligible for an immediate allowance and who does not withdraw accumulated contributions will be entitled to a deferred allowance at age 60. The amount of the allowance will be based on credited service and final average salary at time of leaving service.

Optional Benefit Forms. Retiring members may elect to have benefits paid in straight life form, in a form that guarantees a minimum number of monthly payments, or in a form that provides a continuation of all or a portion of the monthly benefit to a beneficiary after the death of the retiree. If a retiring member elects benefits in other than straight life form, the monthly amount is adjusted. The adjustment is based upon valuation interest and mortality assumptions (with a blend of male and female mortality rates to produce unisex election factors consistent with the gender distribution of members electing optional forms of payment).

Member contributions. State and Local Government members contribute 8.5% of pay. Law enforcement members contribute 9.0% of pay. The maximum statutory rate is 10%.

Refund of members accumulated contributions. In the event a member leaves service before any monthly benefits are payable, accumulated contributions are refunded.

Employer contributions. Each employer contributes the remainder amounts necessary to finance PERS benefits. Employer contributions are expressed as percents of member covered payroll. The maximum statutory rate is 14%, except for law enforcement members.

ACTUARIAL METHODS AND ASSUMPTIONS



**SUMMARY OF
ACTUARIAL METHODS AND ASSUMPTIONS USED FOR PERS
ACTUARIAL VALUATIONS
ASSUMPTIONS ADOPTED BY RETIREMENT BOARD
AFTER CONSULTING WITH ACTUARY**

The entry age actuarial cost method of valuation was used in determining liabilities and normal cost.

Differences in the past between assumed experience and actual experience ("actuarial gains and losses") become part of actuarial accrued liabilities.

Unfunded actuarial accrued liabilities are amortized to produce payments (principal & interest) which are level percent of payroll contributions.

The actuarial assumptions used in the valuation are shown in this Section. Both the economic and decrement assumptions were established following the December 31, 1995 actuarial valuations.

ECONOMIC ASSUMPTIONS

The investment return rate used in making the valuations was 7.75% per year, compounded annually (net after administrative expenses). The real rate of return is the portion of total investment return which is more than the inflation rate. Considering other financial assumptions, the 7.75% investment return rate translates to an assumed real rate of return of 3.00%.

Pay increase assumptions for individual active members are shown for sample ages on pages V-4, V-5, & V-6. Part of the assumption for each age is for merit and/or seniority increase, and the other 4.75% recognizes inflation.

The active member payroll is assumed to increase 4.75% annually, which is the portion of the individual pay increase assumptions attributable to inflation.

The number of active members is assumed to continue at the present number.

NON-ECONOMIC ASSUMPTIONS

The post-retirement mortality rates used in evaluating age and service survivor benefit allowances to be paid were 90% of rates in the 1971 Group Annuity Mortality Male and Female Tables, projected to 1984. Related values are shown on page V-7. The mortality rates for disability allowances were the same as those for age and service retirees 10 years older.

The probabilities of normal and early age and service retirement are shown on page V-3.

The probabilities of withdrawal from service, disability and death-in-service are shown for sample ages on pages V-4, V-5 & V-6. For withdrawal from service it was assumed that members terminating before age 35, members terminating with less than 5 years of service, and a percentage of all other members would withdraw their contributions and forfeit their entitlement to an employer financed benefit. The percentage is 100% at age 35 and is reduced for each year of age after 35, becoming 0% at age 55 (age 45 for law enforcement members).

The probabilities of having an eligible survivor (spouse, child, parent) in the event of death in service were 80% for state and local government members and 90% for law enforcement members.

Additional assumptions for Health Care Coverages are shown on page V-7.

Employer contributions were assumed to be *paid in equal installments* throughout the employer fiscal year.

Present assets (cash & investments) at funding value are shown on pages 7 and 8.

The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (M.A.A.A.)

Probabilities of Normal Age and Service Retirement

Ages	Percent of Eligible Active Members Retiring Within Next Year				
	State		Local Government		Law Enforcement
	Men	Women	Men	Women	
50-54	15%	20%	23%	20%	25%
55-58	15	20	20	20	20
59	18	21	20	20	20
60	20	22	25	25	15
61	21	25	25	28	15
62	22	30	27	30	15
63	25	30	28	30	15
64	25	30	30	30	15
65	25	25	25	25	30
66	25	20	25	25	30
67	25	20	20	20	25
68	25	20	20	20	25
69-79	25	20	20	20	30
80	100	100	100	100	100
Ref	505	506	507	508	511

Probabilities of Early Retirement

Ages	Percent of Eligible Active Members Retiring Within Next Year				
	State		Local Government		Law Enforcement
	Men	Women	Men	Women	
48					3%
49					3
50					7
51					7
55	15%	18%	10%	12%	
56	15	18	10	12	
57	15	18	10	12	
58	15	18	10	12	
59	15	18	10	12	
60	12	15	12	13	
61	12	15	12	13	
62	12	15	15	13	
63	15	15	15	13	
64	18	18	15	13	
Ref	503	504	509	510	515

STATE
SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE AGE & SERVICE RETIREMENT
& INDIVIDUAL PAY INCREASE ASSUMPTIONS

Sample Ages	Years of Service	Percent of Active Members Separating Within the Next Year				Pay Increase Assumptions For An Individual Employee						
		Death		Withdrawal		Disability		Merit & Seniority	Base (Economy)	Increase Next Year		
		Men	Women	Men	Women	Men	Women					
	0			39.00%								
	1			17.00			35.00%					
	2			13.00			17.00					
	3			9.00			14.00					
	4			6.50			10.00					
	5 & Over						8.00					
25		0.04%	0.02%	6.20			7.30	0.07%	3.86%	4.75%	8.61%	
30		0.05	0.03	5.16			6.66	0.08	2.62	4.75	7.37	
35		0.07	0.04	4.18			5.20	0.16	2.06	4.75	6.81	
40		0.11	0.06	3.36			4.00	0.27	1.66	4.75	6.41	
45		0.19	0.08	2.64			3.36	0.46	1.20	4.75	5.95	
50		0.34	0.13	2.28			2.90	0.75	0.88	4.75	5.63	
55		0.55	0.19	2.08			2.52	1.26	0.68	4.75	5.43	
60		0.84	0.32	0.60			0.70	2.06	0.54	4.75	5.29	
Ref		0.70 * 68	0.70 * 69	183	184	328	191	148				
				324	325							

**LOCAL GOVERNMENT
SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE AGE & SERVICE RETIREMENT
& INDIVIDUAL PAY INCREASE ASSUMPTIONS**

Sample Ages	Years of Service	Percent of Active Members Separating Within the Next Year				Disability				Pay Increase Assumptions For An Individual Employee								
		Death		Withdrawal		Men		Women		Merit & Seniority		Base (Economy)		Increase Next Year				
		Men	Women	Men	Women	Men	Women	Men	Women									
	0			36.00%														
	1			17.00														
	2			13.00														
	3			10.00														
	4			8.00														
	5 & Over			6.80														
25		0.04%	0.02%					8.40		0.07%				3.80%			4.75%	8.55%
30		0.05	0.03	5.40				7.28		0.11				2.40			4.75	7.15
35		0.07	0.04	4.40				5.72		0.25				1.95			4.75	6.70
40		0.11	0.06	3.52				4.40		0.43				1.70			4.75	6.45
45		0.19	0.08	3.08				3.76		0.62				1.40			4.75	6.15
50		0.34	0.13	2.82				3.36		0.95				1.00			4.75	5.75
55		0.55	0.19	2.58				2.96		1.46				0.65			4.75	5.40
60		0.84	0.32	0.60				0.80		1.88				0.54			4.75	5.29
Ref		0.70*68	0.70*69	185				186		192				193			149	
				326				327										

**LAW ENFORCEMENT
SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE AGE & SERVICE RETIREMENT
& INDIVIDUAL PAY INCREASE ASSUMPTIONS**

Sample Ages	Years of Service	Percent of Active Members Separating Within the Next Year				Pay Increase Assumptions For An Individual Employee			
		Death		Withdrawal		Disability Men & Women	Merit & Seniority (Economy)	Base (Economy)	Increase Next Year
		Men	Women	Men & Women	Men & Women				
	0								
	1			18.00%					
	2			10.00					
	3			8.00					
	4			7.00					
				6.00					
	5 & Over	0.04%	0.02%	4.80	0.20%	5.10%	4.75%	9.85%	
25		0.05	0.03	3.52	0.26	3.10	4.75	7.85	
30		0.07	0.04	2.78	0.42	2.10	4.75	6.85	
35		0.11	0.06	2.32	0.62	1.70	4.75	6.45	
40									
45		0.19	0.08	1.96	1.06	1.35	4.75	6.10	
50		0.34	0.13	1.62	1.54	1.14	4.75	5.89	
55		0.55	0.19	1.60	2.12	1.00	4.75	5.75	
60		0.84	0.32	0.50	2.76	0.70	4.75	5.45	
Ref		0.70*68	0.70*69	187	194	121			
				328					

Single Life Retirement Values

Sample Attained Ages	Present Value of \$1 Monthly for Life Increasing 3.0% Annually (1st Increase After 1 Year)		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	\$169.73	\$186.48	28.55	34.58
55	156.48	175.64	24.26	29.89
60	141.12	162.15	20.19	25.31
65	123.82	146.02	16.40	20.92
70	105.70	127.19	13.02	16.76
75	88.21	106.96	10.17	13.03
80	71.30	87.22	7.75	9.89
Ref.	.90 * 68	.90 * 69		

ADDITIONAL ASSUMPTIONS FOR HEALTH CARE COVERAGES

The following Schedule shows monthly rates assumed to be applicable to individuals currently enrolled in the post employment health care plan. (People Enrolled in an HMO are treated as though they are enrolled in Medical Mutual of Ohio for valuation purposes.) Future retirees are assumed to choose between the two plans in roughly equal proportions, so that the assumed rates for those people are the averages of rates shown below

Assumed 1998 Monthly Rates for Present Retirees

	Total	Portion Paid by	
		Member	PERS
Aetna US Health Care			
Benefit Recipient without Medicare	\$ 402.50	\$ 8.52	\$ 393.98
Benefit Recipient with Medicare	141.42		141.42
Spouse without Medicare	402.50	68.52	333.98
Spouse with Medicare	141.42	20.00	121.42
Child	134.17	20.00	114.17
Medical Mutual of Ohio			
Benefit Recipient without Medicare	\$ 325.83	\$ -	\$ 325.83
Benefit Recipient with Medicare	137.75		137.75
Spouse without Medicare	325.83	60.00	265.83
Spouse with Medicare	137.75	20.00	117.75
Child	108.61	20.00	88.61

The Aetna and Medical Mutual Rates appear to differ a lot on the surface. If the figures were adjusted to reflect demographic and morbidity factors, they would be much closer to each other than they appear to be.

Eligibility for Medicare Coverage: All benefit recipients were assumed to be eligible for Medicare on attainment of age 65.

Health Care Inflation: Health care inflation was assumed to equal wage inflation.

Part Time Service Credit: A part time employee in PERS must receive \$3,000 a year to earn a full year of contributing service. It was assumed that 4% of local government members who terminate in the future with over 10 years of employment will have less than 10 years of service credit and therefore will not qualify for health care coverage.

Coverage Choice: Future retirees were assumed to choose AETNA and Blue Cross in equal proportions. Present retirees were assumed to remain with their present choice.

Marriage and Continuing Coverage: It was assumed that 75% of retired men and 25% of retired women would be married. Coverage was assumed to continue for 60% of all the retired males and 20% of all the retired females.

FINANCING PRINCIPLES



FINANCIAL PRINCIPLES AND OPERATIONAL TECHNIQUES OF PERS

Promises Made, and To Be Paid For. As each year is completed, PERS in effect hands an "IOU" to each member then acquiring a year of service credit --- the "IOU" says: "The Public Employees Retirement System of Ohio owes you one year's worth of retirement benefits, payments in cash commencing when you qualify for retirement."

The related *key financial questions* are:

Which generation of taxpayers contributes the money to cover the IOU?

The present taxpayers, who receive the benefit of the member's present year of service? *Or the future taxpayers*, who happen to be in Ohio at the time the IOU becomes a cash demand, years and often decades later?

The law governing PERS financing intends that this year's taxpayers contribute the money to cover the IOUs being handed out this year. With this financial objective, *the employer contribution rate is expected to remain approximately level from generation to generation of taxpayers.*

There are systems which have a design for deferring contributions to future taxpayers. Lured by a lower contribution rate now, they put aside the consequence that the contribution rate must then relentlessly grow to a level much higher than would be required if a level contribution pattern were followed.

An inevitable by-product of the level-cost design is the accumulation of reserve assets, for decades, and the income produced when the assets are invested. *Investment income* becomes *the 3rd and largest contributor* for benefits to employees, and is interlocked with the contribution amounts required from employees and employers.

Translated to actuarial terminology, this level-cost objective means that the contribution rates must total at least the following:

Normal Cost (the cost of members' service being rendered this year)

... plus ...

Interest on Unfunded Actuarial Accrued Liabilities (unfunded actuarial accrued liabilities are the difference between: liabilities for service already rendered; and the accrued assets of PERS).

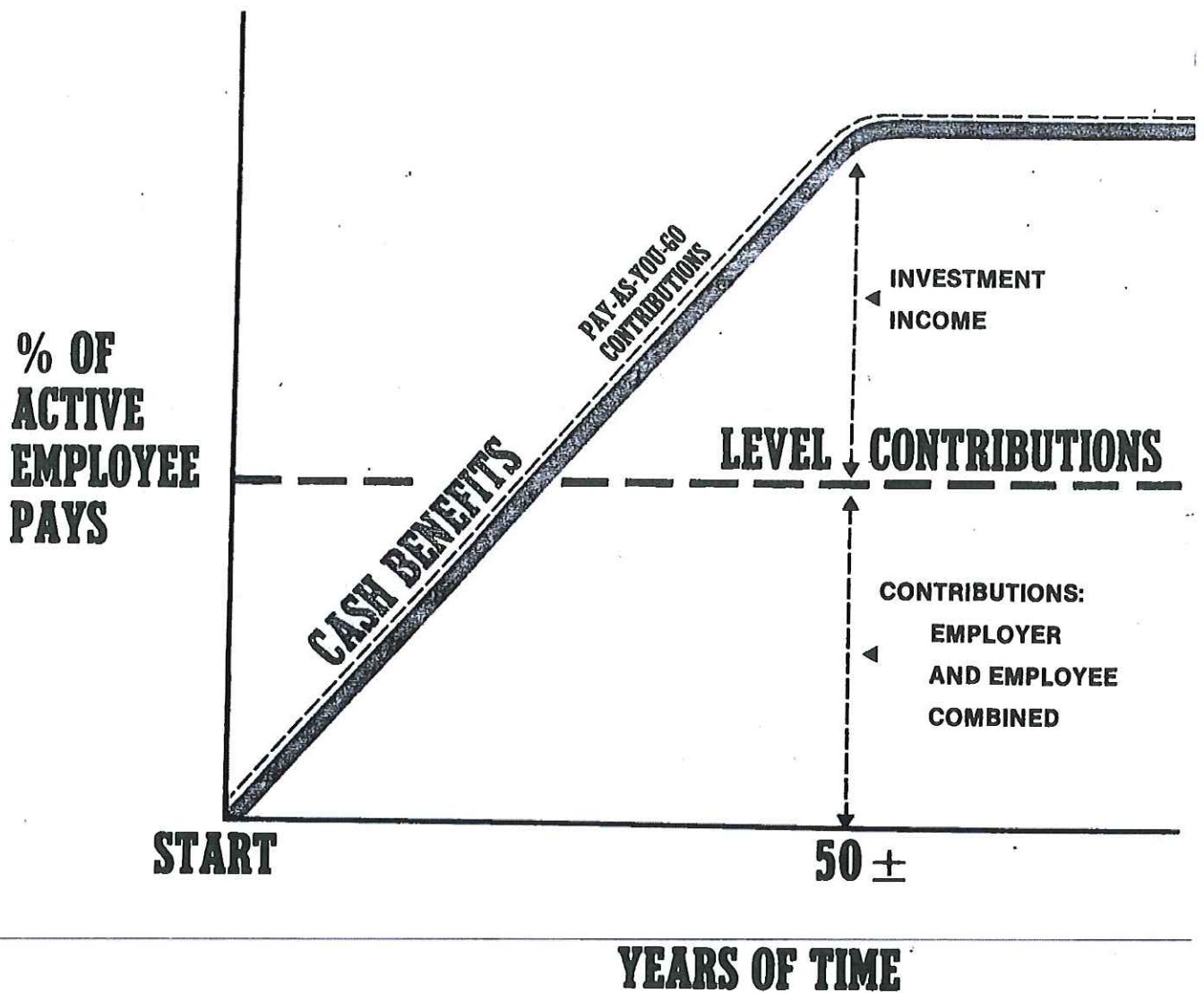
Computing Contributions to Support Fund Benefits. From a given schedule of benefits and from employee and asset data, the actuary calculates the contribution rates to support the benefits by means of *an actuarial valuation and a funding method.*

An actuarial valuation has a number of ingredients such as: the rate of investment return which plan assets will earn; the rates of withdrawal of active members who leave covered employment; the rates of mortality; the rates of disability; the rates of pay increases; and the assumed age or ages at actual retirement.

In an actuarial valuation, assumptions must be made as to what the above rates will be for the next year and for decades in the future. The assumptions are established by the Retirement Board after receiving the advice of the actuary.

Reconciling Differences Between Assumed Experience and Actual Experience. Once actual experience has occurred and has been observed, it will not coincide exactly with assumed experience, regardless of the skill of the actuary and the many calculations made. The future can not be predicted with 100% precision.

PERS copes with these continually changing differences by having annual actuarial valuations. Each actuarial valuation is a complete recalculation of assumed future experience, taking into account all past differences between assumed and actual experience. The result is *continuing adjustments in financial position.*



CASH BENEFITS LINE. This relentlessly increasing line is the fundamental reality of retirement plan financing. It happens each time a new benefit is added for future retirements (and happens regardless of the design for contributing for benefits).

LEVEL CONTRIBUTION LINE. Determining the level contribution line requires detailed assumptions concerning a variety of experiences in future decades, including:

Economic Risk Areas

- Rates of investment return
- Rates of pay increase
- Changes in active member group size

Non-Economic Risk Areas

- Ages at actual retirement
- Rates of mortality
- Rates of withdrawal of active members (turnover)
- Rates of disability

THE ACTUARIAL VALUATION PROCESS

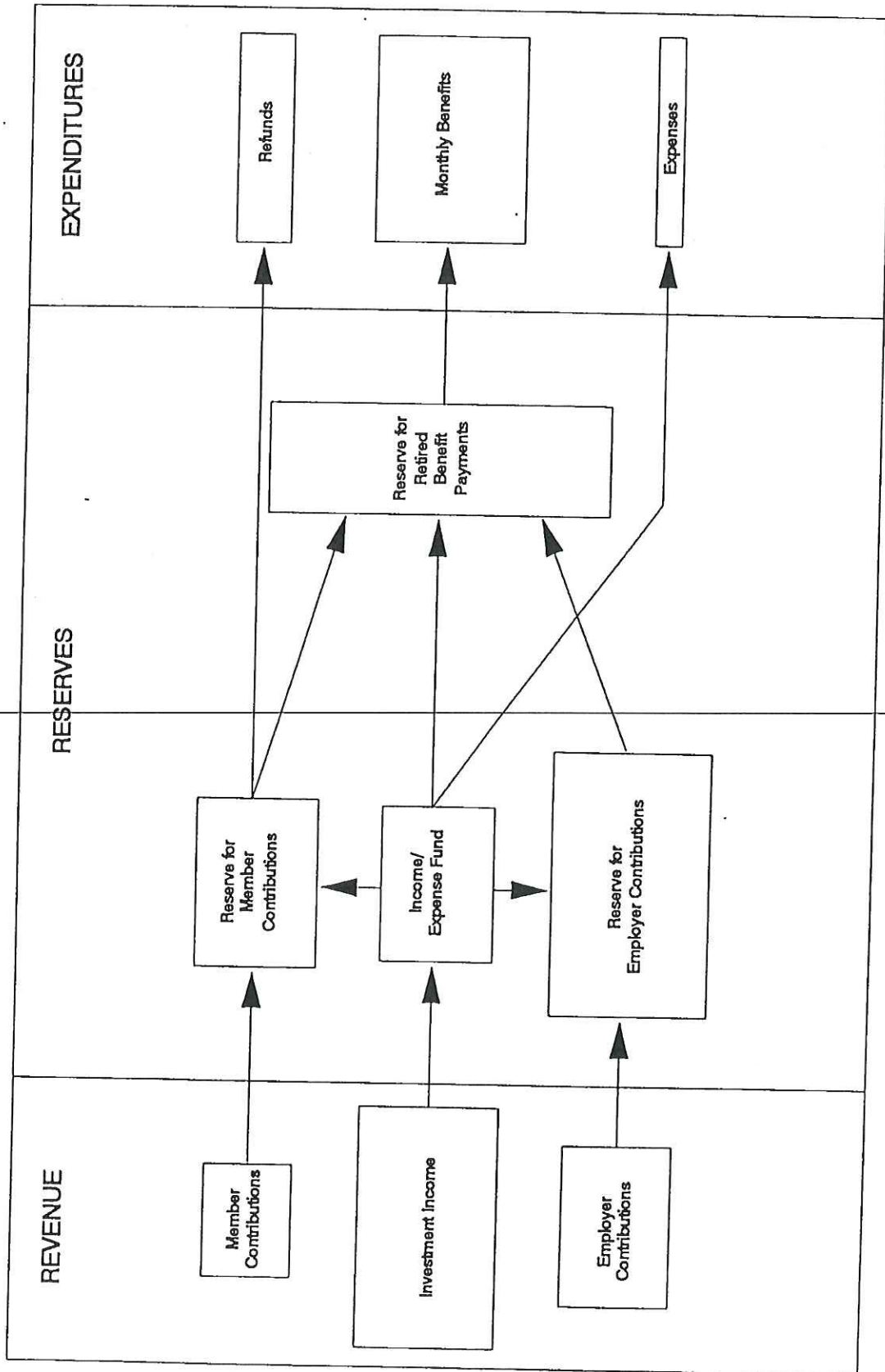
The *financing diagram* on the opposite page shows the relationship between *the two fundamentally different philosophies of paying* for retirement benefits: the method where contributions match cash benefit payments (or barely exceed cash benefit payments, as in the Federal Social Security program) which is thus an *increasing contribution method*; and, the *level contribution method* which attempts to equalize contributions between the generations.

The *actuarial valuation* is the mathematical process by which the level contribution rate is determined. The activity constituting the valuation may be summarized as follows:

- A. *Census Data*, including:
 - Retired lives now receiving benefits
 - Former employees with vested benefits not yet payable
 - Active employees

- B. + *Asset data* (cash & investments)
- C. + *Benefit provisions* that establish eligibility and amounts of payments to members
- D. + *Assumptions concerning future experience* in various risk areas
- E. + *The funding method* for employer contributions (the long-term, planned pattern for employer contributions)
- F. + *Mathematically combining the assumptions, the funding method, and the data*
- G. = Determination of:
 - Plan Financial Position; and/or
 - New Employer Contribution Rate

Flow of Money Through the Retirement System



GLOSSARY

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Accumulated Benefit Obligation. The actuarial present value of vested and non-vested benefits based on service to date and past and current salary levels.

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability."

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

Actuarial Equivalent. A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Actuary. A person who is trained in the applications of probability and compound interest to problems in business and finance that involve payment of money in the future, contingent upon the occurrence of future events. Most actuaries in the United States are Members of the American Academy of Actuaries. The Society of Actuaries is an international research, education and membership organization for actuaries in the life and health insurance, employee benefits, and pension fields. It administers a series of examinations leading initially to Associateship and the designation A.S.A. and ultimately to Fellowship with the designation F.S.A.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Experience Gain (Loss). A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

Funding Value of Assets. The value of current plan assets recognized for valuation purposes. Generally based on a phased-in recognition of all or a portion of market related investment return. Sometimes referred to as Actuarial Value of Assets.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Plan Termination Liability. The actuarial present value of future plan benefits based on the assumption that there will be no further accruals for future service and salary. The termination liability will generally be less than the liabilities computed on a "going concern" basis and is not normally determined in a routine actuarial valuation.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability."

MEANING OF "UNFUNDED ACTUARIAL ACCRUED LIABILITIES"

"Actuarial accrued liabilities" are the present value of the portions of promised benefits that are not covered by future normal cost contributions --- a liability has been established ("accrued") because the service has been rendered but the resulting monthly cash benefit may not be payable until years in the future.

If "actuarial accrued liabilities" at any time exceed the plan's accrued assets (cash & investments), the difference is *"unfunded actuarial accrued liabilities."* This is the common condition. If the plan's assets equaled the plan's "actuarial accrued liabilities", the plan would be termed "fully funded." This is an unusual condition.

Each time a plan adds a new benefit which applies to service already rendered, an "actuarial accrued liability" is created, which is also an "unfunded actuarial accrued liability" because the plan can't print instant cash to cover the value of the new benefit promises. Payment for such unfunded actuarial accrued liabilities is spread over a period of years, commonly in the 15-40 year range.

Unfunded actuarial accrued liabilities can occur in another way: if actual plan experience is less favorable than assumed, the difference is added to unfunded actuarial accrued liabilities. For example, in plans where benefits are directly related to an employee's pay near time of retirement, unfunded actuarial accrued liabilities increased rapidly during the 1970's because unexpected rates of pay increase created additional actuarial accrued liabilities which could not be matched by reasonable investment results. Most of the unexpected pay increases were the direct result of inflation, which is a very destructive force on financial stability.

The existence of unfunded actuarial accrued liabilities is not bad but the changes from year to year in amount of unfunded actuarial accrued liabilities are important--- "bad" or "good" or somewhere in between.

Nor are unfunded actuarial accrued liabilities a bill payable immediately, but it is important that policy-makers prevent the amount from becoming unreasonably high and *it is vital for plans to have a sound method for making payments toward them* so that they are controlled.

GASB Reporting



**SCHEDULE OF FUNDING PROGRESS
FOR COMPLIANCE WITH GASB STATEMENT NO. 25
(\$ AMOUNTS IN MILLIONS)**

The schedule below measures the funding progress with respect to the *retirement allowance* portion of PERS benefits for compliance with GASB Statement No. 25. Assets and liabilities related to post-employment health care benefits are specifically excluded from the schedule. Assets do, however, include market value adjustments.

Valuation Year	Actuarial Accrued Liabilities (AAL)	Valuation Assets	Actuarial Accrued Liabilities	Ratio of Assets to AAL	Active Member Payroll	UAAL as a % of Active Member Payroll
1987	\$ 16,231	\$ 11,975	\$ 4,256	74%	\$ 4,543	94%
1988	17,246	13,249	3,997	77	5,307	75
1989	18,310	14,629	3,681	80	5,597	66
1990	20,125	16,245	3,880	81	6,036	64
1991	22,027	18,108	3,919	82	6,651	59
1992	23,961	20,364	3,597	85	6,889	52
1993	26,506	23,063	3,443	87	7,236	48
1994	28,260	25,066	3,194	89	7,625	42
1995	30,556	27,651	2,905	90	7,973	36
1995*	30,224	27,651	2,573	91	7,973	32
1996	32,631	30,534	2,097	94	8,340	25

* Revised actuarial assumptions.

