

**OHIO PUBLIC EMPLOYEES
RETIREMENT SYSTEM**

**Annual Actuarial Valuation
and Gain/Loss Analysis of
Retirement Allowances for
Active and Inactive Members**

December 31, 1997

Gabriel, Roeder, Smith & Company

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GABRIEL, ROEDER, SMITH & COMPANY

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October 9, 1998

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

Ladies and Gentlemen:

The results of the *December 31, 1997 annual actuarial valuations and gain/loss analysis regarding 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 and projections of retiree health and Medicare resources and obligations are covered in separate reports.

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 prescribed 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.

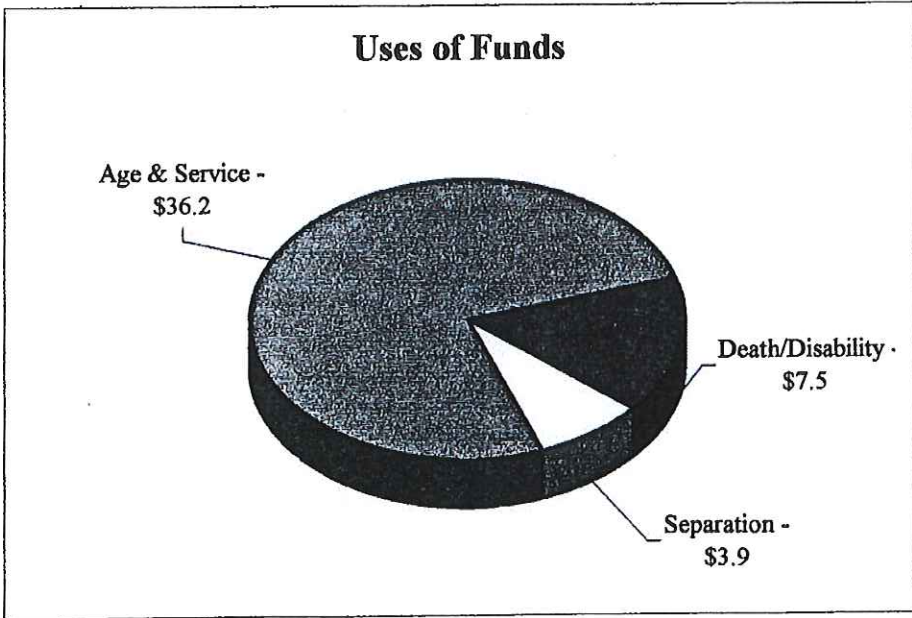
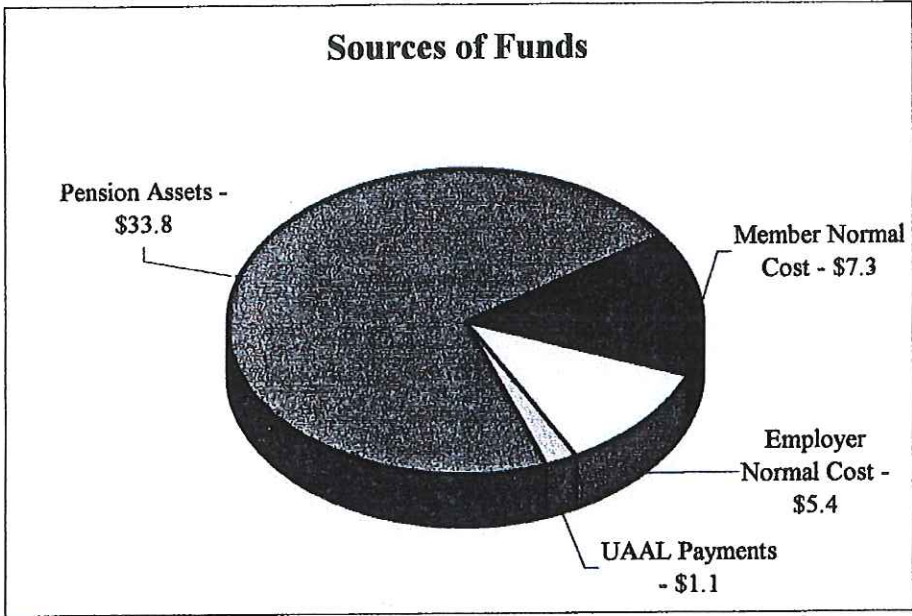

Brian B. Murphy, F.S.A.

BBM/alv

Retirement System Totals



**FINANCING \$47.6 BILLION* OF PENSION BENEFIT PROMISES
FOR PRESENT ACTIVE AND RETIRED MEMBERS
DECEMBER 31, 1997
(DOLLAR AMOUNTS IN BILLIONS)**



* Present value of future benefits – all divisions combined.

COMMENTS REGARDING THE FINANCING OF RETIREMENT ALLOWANCES

The December 31, 1997 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.

<u>Division</u>	<u>Active Members</u>		<u>Retirement</u>	<u>Amortization Years</u>	
	<u>Number</u>	<u>Annual Payroll (\$Millions)</u>	<u>Allowance Portion of Employer Contribution Rate</u>	<u>for Unfunded Pension This Year</u>	<u>for Unfunded Pension Accrued Liabilities Prior year</u>
State	114,036	\$ 3,405	9.11%	3	8
Local Government	231,668	4,976	9.35%	5	15
Law Enforcement	7,256	259	12.50%	10	30
Totals	352,960	\$ 8,640			

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 information concerning 1997 experience is presented on page 13.

Conclusion. Based on the results of the December 31, 1997 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.

**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	0.0 %	
1997	114,036	40.5	9.1	29,858	4.1 %		
LOCAL GOV'T	1975	149,557	40.8 yrs.	6.1 yrs.	\$ 8,771	4.3 %	@
	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	0.0 %	
1997	231,668	41.4	7.8	21,481	3.1 %		
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 %	
1997	7,256	39.3	11.5	35,680	5.0 %		

@ 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	
	1997	1996
Beginning Book Value	\$37,787,615,858	\$34,732,263,487
Revenues		
Member Contributions	773,100,594	737,292,990
Employer Contributions	1,233,637,457	1,181,597,072
Retiree Health Premiums	19,654,531	18,983,651
Total Revenues	2,026,392,582	1,937,873,713
Expenditures		
Retirement Benefits	1,304,604,400	1,197,187,444
Refunds of Member Contributions	139,624,174	110,043,743
System Paid Retiree Health Care	348,098,711	328,963,554
Member Paid Retiree Health Care	19,654,531	18,983,651
Retiree Medicare Reimbursement	41,746,562	40,250,305
Administrative Expenses	25,691,497	22,958,783
Other	2,074,165	2,353,246
Total Expenditures	1,881,494,040	1,720,740,726
Investment Return		
Ordinary Income	2,219,652,955	1,928,051,637
Realized Capital Value Changes	825,108,169	910,167,747
Total Investment Return	3,044,761,124	2,838,219,384
Ending Book Value	\$40,977,275,524	\$37,787,615,858

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

	Year Ended December 31	1995	1996	1997	1998	1999	2000
A. Funding Value Beginning of Year		\$ 31,770,701,065	\$ 34,877,055,515	\$ 38,402,909,983			
B. Market Value End of Year		36,691,952,742	39,750,587,206	45,283,541,063			
C. Market Value Beginning of Year		30,447,493,591	36,691,952,742	39,750,587,206			
D. Non-Investment/Administrative Net Cash Flow		240,193,882	240,091,770	170,590,039			
E. Investment Return							
E1. Market Total:B-C-D		6,004,265,269	2,818,542,694	5,362,363,818			
E2. Assumed Rate of Return		7.75%	7.75%	7.75%			
E3. Assumed Amount of Return		2,471,536,845	2,712,275,359	2,982,835,888			
E4. Amount Subject to Phase In: E1-E3		3,532,728,424	106,267,335	2,379,527,930			
F. Phased-In Recognition of Investment Return							
F1. Current year: 0.25xE4		883,182,106	26,566,834	594,881,983			
F2. First Prior Year		(498,387,491)	883,182,106	26,566,834	594,881,983		
F3. Second Prior Year		162,125,892	(498,387,492)	883,182,106	26,566,834	594,881,983	
F4. Third Prior Year		(152,296,784)	162,125,891	(498,387,492)	883,182,105	26,566,833	594,881,983
F5. Total Recognized Investment Gain		394,623,723	573,487,339	1,006,243,431	1,504,630,922	621,448,816	594,881,983
G. Funding Value End of Year: A+D+E3+F5		34,877,055,515	38,402,909,983	42,562,579,341			
H. Difference Between Market and Funding Value		1,814,897,227	1,347,677,223	2,720,961,722	1,216,330,799	594,881,983	
I. Recognized Rate of Return		8.99%	9.39%	10.36%			

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 12/31/1997	Transfer To (From) EAF	EAF Balance Before Accrual 12/31/1997	Accrued Transfers (AT)
<i>State</i>				
Pension	\$4,868,696,015	\$283,769,964	\$5,152,465,979	\$(100,201,232)
Survivor Benefit	573,415,604	(289,873,297)	283,542,307	(4,957,919)
Total	5,442,111,619	(6,103,333)	5,436,008,286	(105,159,151)
<i>Local Government</i>				
Pension	6,438,665,932	368,923,131	6,807,589,063	(137,860,246)
Survivor Benefit	771,767,124	(369,817,430)	401,949,694	(8,378,900)
Total	7,210,433,056	(894,299)	7,209,538,757	(146,239,146)
<i>Law Enforcement</i>				
Pension	489,589,118	23,036,790	512,625,908	(13,287,495)
Survivor Benefit	54,288,265	(23,036,790)	31,251,475	(583,455)
Total	\$543,877,383	\$0	\$543,877,383	\$(13,870,950)

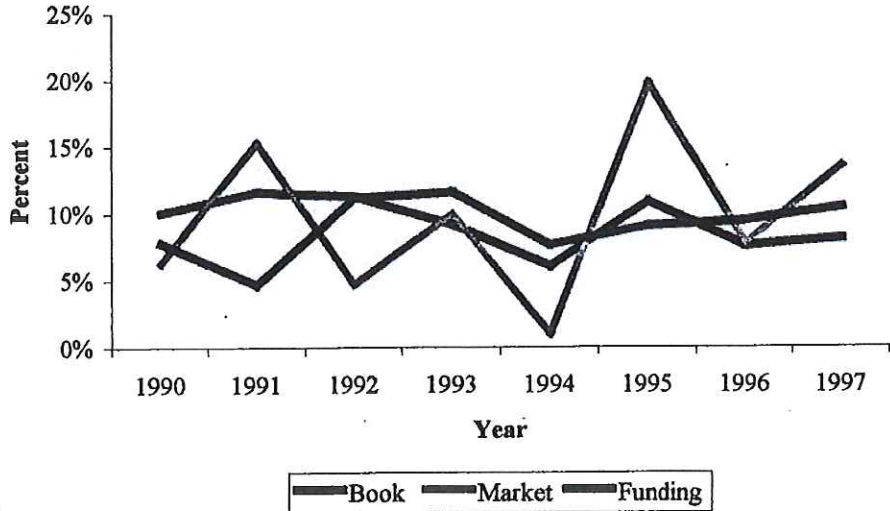
Reserve transfers from the Employer Accumulation Fund to the A & PR Fund and/or Survivor Benefit Funds are recommended in the following instances.

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.

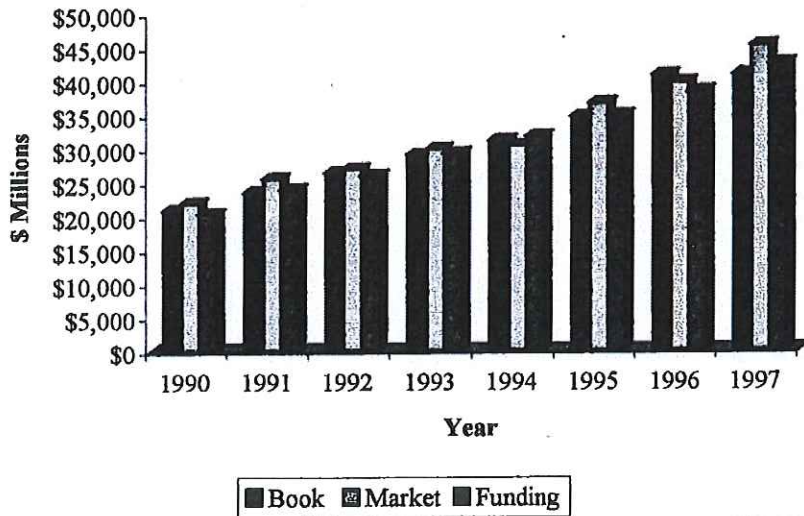
By making these annual adjustments in addition to the regular transfers when allowances are added to the rolls, the ratio of assets to liabilities for retired lives will not fall below 100% and year to year changes in that ratio will normally be isolated to decrement experience within the retired life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

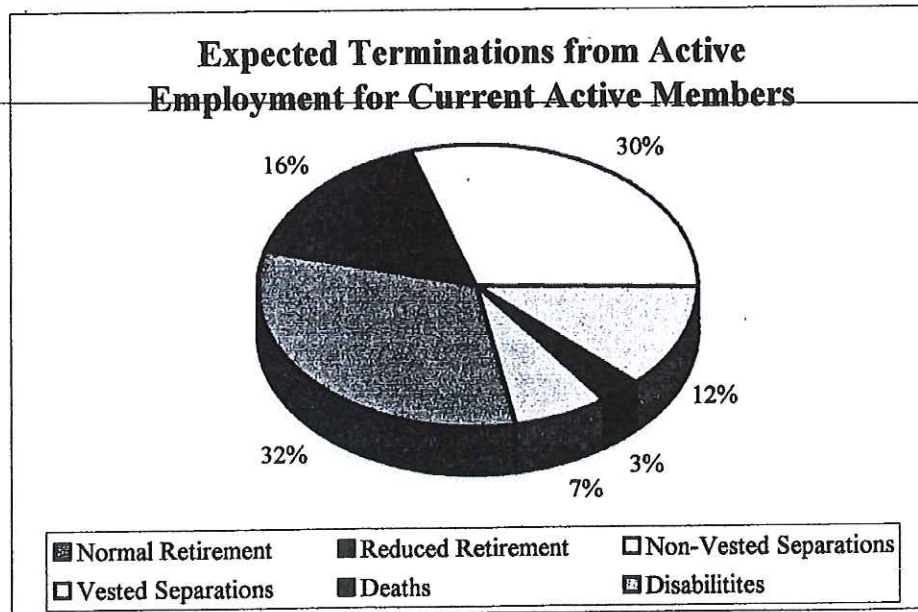
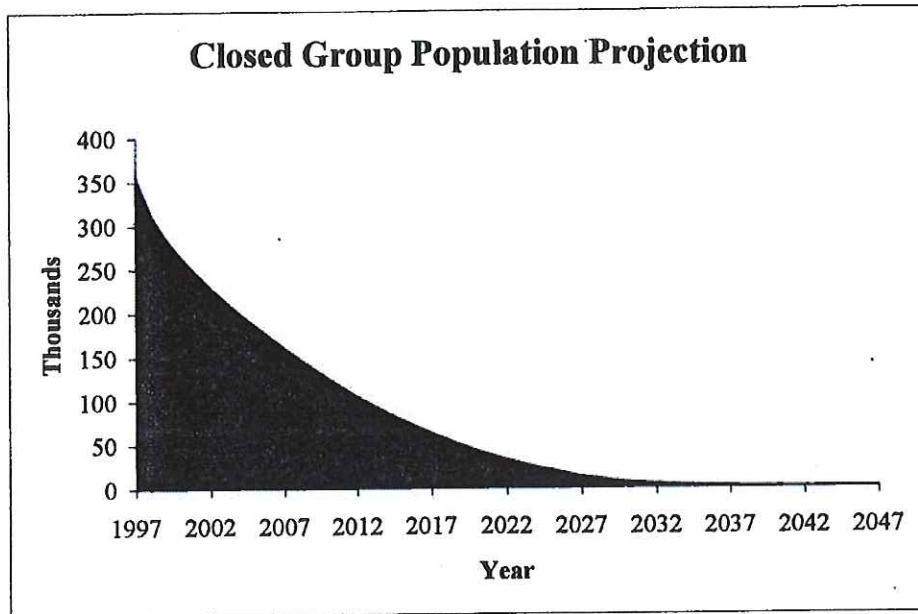
Comparison of Rates of Return



Comparison of Asset Values



DEVELOPMENT OF PRESENT POPULATION DECEMBER 31, 1997



The charts show the expected future development of the present population in simplified terms. The retirement system presently covers 352,960 active members. Eventually, 30% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. 60% 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. 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.

GAIN/LOSS ANALYSIS



ACTIVE MEMBER GAIN/LOSS ANALYSIS DURING CALENDAR 1997

Purpose of Gain/Loss Analysis. Regular actuarial valuations provide information about the composite change in unfunded actuarial accrued liabilities -- whether or not the liabilities are increasing or decreasing, and by how much.

However, valuations do not show the portion of the change attributable to each risk area within the retirement system: the rate of investment income on plan assets; the rates of withdrawal of active members who leave covered employment; the rates of mortality; the rates of disability; the rates of salary increases; the assumed ages at actual retirement; and the rate of increase of retiree health care claims. In an actuarial valuation, assumptions are made as to what these rates will be for the next year and for decades in the future.

The objective of a gain and loss analysis is to determine the portion of the change in unfunded actuarial accrued liabilities attributable to each risk area.

The fact that actual experience differs from assumed experience is to be expected. The future cannot be predicted with precision. Changes in the valuation assumption for a risk area should be made when the differences between assumed and actual experience have been observed to be sizable and persistent. One year's gain and loss analysis may or may not be indicative of *long-term trends, which are the basis of financial assumptions.*

Assumed experience was last changed for calendar 1996.

Results from 1997. Experience was favorable during 1997 with gains in both economic and decrement risk areas. Favorable experience resulted in a decrease in amortization periods. Investment return, as measured by the asset valuation method, was the largest source gain again this year. This has been the case for most years since 1980.

Period	Inflation As Measured By		Investment Return Credited to Active Life Funds	Real Rate of Return	
	CPI	Increase in Average Pay		Relative to CPI	Relative to Pays
Last year	3.3 %	3.4 %	11.6 %	8.3 %	8.2 %
Last 5 years	2.8 %	3.5 %	10.5 %	7.7 %	7.0 %
Last 10 years	3.7 %	2.7 %	10.7 %	7.0 %	8.0 %
Last 15 years	3.5 %	3.5 %	12.4 %	8.9 %	8.9 %
Valuation assumption		4.75 %	7.75 %		3.0 %

By longer term historical standards, the real rates of return indicated above are extraordinary. The last 15 years have been an exceptional period in investment history.

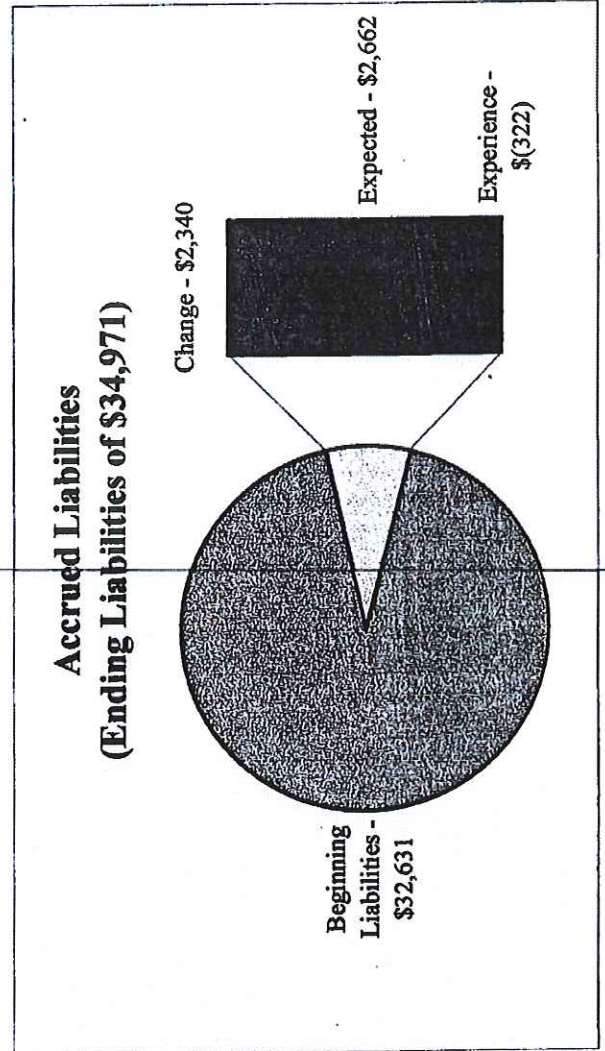
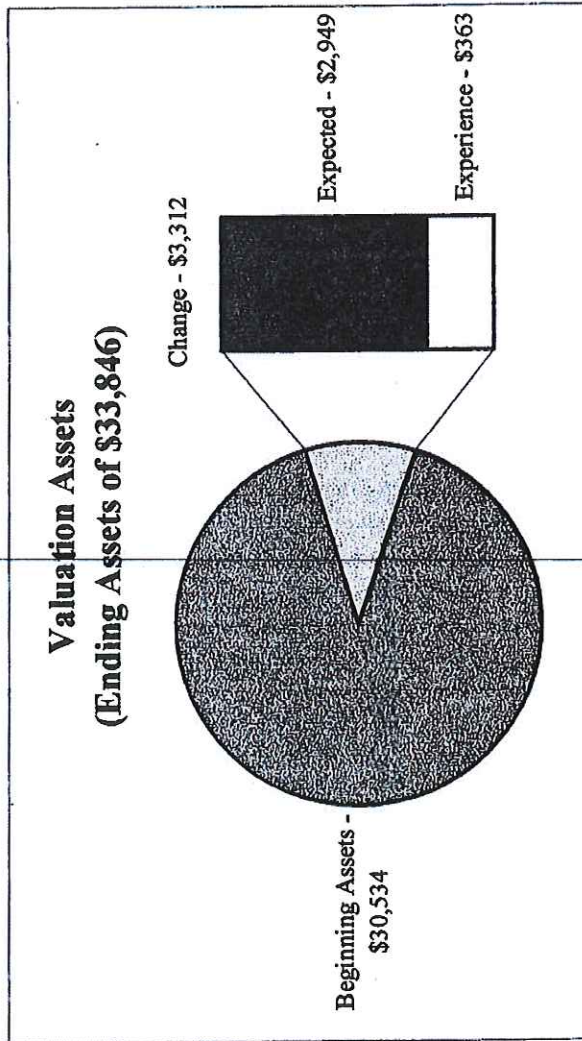
Gains and losses from retirement, death, disability and turnover in 1997 were generally smaller than those found in 1996 and other recent years - primarily as a result of the revision of decrement assumptions following the 1991-95 experience study.

**SUMMARY OF EXPERIENCE BY DIVISION
DURING 1997 IN \$ MILLIONS**

	State	Local	Law Enforcement	Total \$	% of AL
Beginning of Year					
1. Active Member Accrued Liabilities (AL)	\$8,104.3	\$11,285.6	\$710.6	\$20,100.5	100.0 %
2. Valuation Assets	7,387.0	9,940.0	675.6	18,002.6	89.6 %
3. Unfunded Actuarial Accrued Liabilities	\$717.3	\$1,345.6	\$35.0	\$2,097.9	10.4 %
1997 Experience Gains(Losses)					
4. Gains (losses) in economic risk areas					
a. Pay increases	\$105.3	\$156.5	\$5.8	\$267.6	1.3 %
b. Investment return*	330.2	445.6	25.6	801.4	4.0 %
d. Total	435.5	602.1	31.4	1,069.0	5.3 %
5. Gains (losses) from decrement experience					
a. Service retirement	8.6	16.7	1.9	27.2	0.1 %
b. Disability retirement	14.7	31.2	(1.1)	44.8	0.2 %
c. Death-in-service	0.9	2.0	0.2	72.0	0.4 %
d. Other separations	1.7	(88.0)	(3.3)	(89.6)	(0.4)%
e. Total	25.9	(38.1)	(2.3)	54.4	0.3 %
6. Total experience gains (losses): (4d) + (5e)	\$461.4	\$564.0	\$29.1	\$1,123.4	5.6 %
End of Year					
7. Active Member Accrued Liabilities	\$8,591.2	\$11,972.6	\$821.2	\$21,385.0	100.0 %
8. Valuation Assets	8,268.0	11,218.3	772.8	20,259.1	94.7 %
9. Unfunded Actuarial Accrued Liabilities	\$323.2	\$754.3	\$48.4	\$1,125.9	5.3 %

* Recognized investment return in 1997 includes carryovers from previous years, in accordance with the asset valuation method.

**CHANGE IN FINANCIAL POSITION DURING 1997
(\$ MILLIONS)**

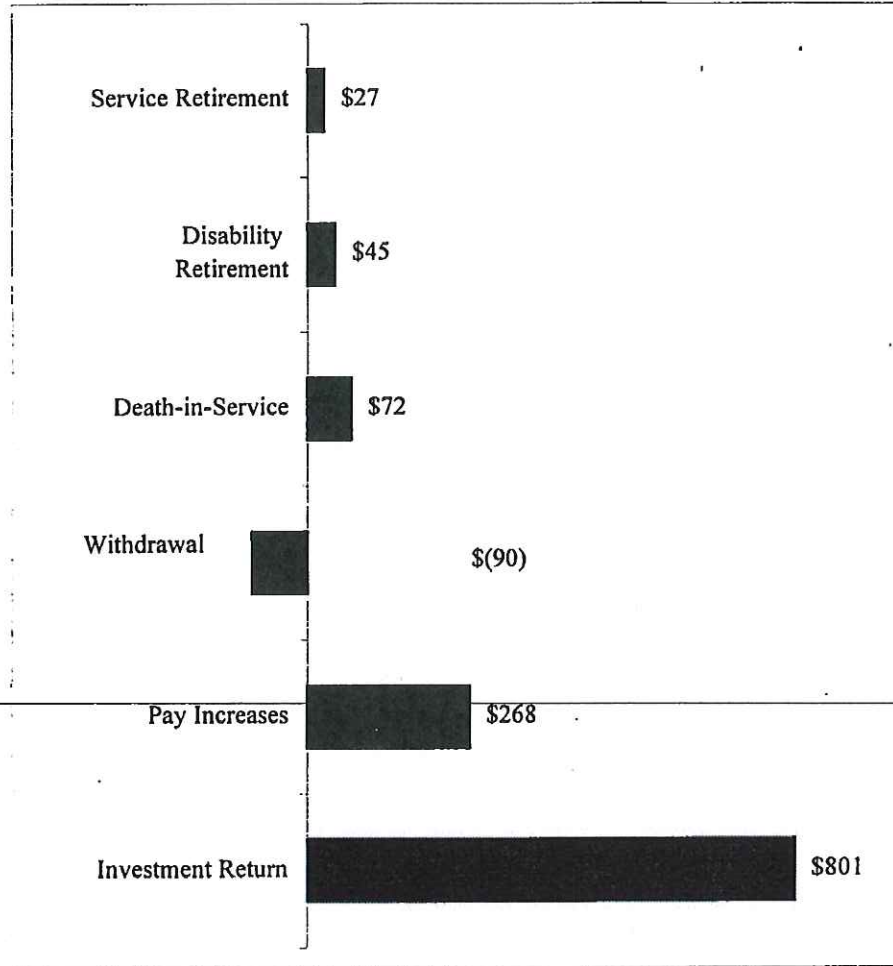


ACTIVE MEMBER POPULATION DEVELOPMENT DURING CALENDAR YEAR 1997

	State		Local		Law		Total	
	Actual	Expected	Actual	Expected	Actual	Expected	Actual	Expected
Beginning Census	115,712		229,954		6,742		352,408	
- Normal Retirement	1,829	1,233	2,774	3,161	77	74	4,680	4,468
- Death with Benefit	76	107	209	252	6	9	291	368
- Disability Retirement	507	273	720	556	74	42	1,301	871
- Other Separations (including Death no Benefit)	17,128	10,933	30,927	24,214	249	240	48,304	35,387
- Transfers Out	1,036		2,222		154		3,412	
+ Transfers In	1,793		860		759		3,412	
+ New Entrants	17,107		37,706		315		55,128	
Ending Census	114,036		231,668		7,256		352,960	

This page reconciles the active member populations reported in connection with the 1996 and 1997 valuations on an actual and expected basis. Assumptions related to population development are a primary focus of the gain/loss analysis. They generally tend to be more stable than economic assumptions, and therefore, measurements have more meaning.

GAIN/LOSS ANALYSIS
1997 EXPERIENCE IN \$ MILLIONS



STATE DIVISION



STATE DIVISION

State Division active members included in the valuation totaled 114,036, involving an annual payroll totaling \$3,404,854,905.

Active Members in Valuation December 31, 1997

Groups	Number	Annual Payroll	Average		
			Pay	Age	Service
Men	52,691	\$1,698,359,860	\$32,232	40.3	9.1
Women	61,345	1,706,495,045	27,818	40.8	9.1
Totals	114,036	\$3,404,854,905	\$29,858	40.5	9.1

Also included in the State Division valuation were 12,678 inactive members eligible for deferred retirement allowances or contribution refunds.

STATE DIVISION
EMPLOYEES SAVINGS FUND AND EMPLOYER ACCUMULATION FUND

The State Division's balances, at December 31, 1997, 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	\$ 2,418,011,311	\$ 0	\$ 0	\$ 2,418,011,311
Employer Accumulation Fund*	5,152,465,979	3,004,404,023	283,542,307	8,440,412,309
Market Value Adjustment	486,546,529	116,232,546	32,590,995	635,370,070
Accrued Transfers	(100,201,232)		(4,957,919)	(105,159,151)
Actuarial Value of Assets	\$ 7,956,822,587	\$ 3,120,636,569	\$ 311,175,383	\$11,388,634,539

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 7).*

Not available for financing basic retirement allowances.

**STATE DIVISION RETIREMENT ALLOWANCES
DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES
DECEMBER 31, 1997**

Actuarial Present Value December 31, of	(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	\$ 10,295,577,896	\$ 3,190,178,859	\$ 7,105,399,037
Disability allowances likely to be paid present active members who become permanently disabled	1,352,815,950	612,685,692	740,130,258
Employer provided portion of survivor benefits likely to be paid to spouses and children of present active members who die before retiring	482,138,481	203,554,093	278,584,388
Separation benefits (refunds of contributions, deferred allowances and employee provided portion of survivor benefits) likely to be paid present active and inactive members	1,528,350,543	1,061,281,168	467,069,375
Total	\$13,658,882,870	\$5,067,699,812	\$ 8,591,183,058
Actuarial Value of Assets			8,267,997,970
Unfunded Actuarial Accrued Liability			\$ 323,185,088

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

EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL

Contributions for	Contributions Computed December 31	
	1997	1996
Normal Cost		
Age and Service Allowances	9.31 %	9.32 %
Disability Allowances	1.83 %	1.82 %
Survivor's Benefits	0.59 %	0.59 %
Separation Benefits	2.98 %	2.98 %
Total Normal Cost	14.71 %	14.71 %
(Member Current Contributions)	8.50 %	8.50 %
Employer Normal Cost	6.21 %	6.21 %
Unfunded Actuarial Accrued Liabilities		
Financing Years*	3	8
Member Benefits	3.19 %	2.86 %
Survivor benefits	(0.29)%	(0.05)%
Total	2.90 %	2.81 %
Computed Employer Contributions	9.11 %	9.02 %

* The period sufficient to produce an Employer Contribution Rate of 9.11% of payroll for retirement allowances and survivor benefits.

**STATE DIVISION
COMPARATIVE STATEMENT**

December 31	Active Members in Valuation			Total Employer Contributions as % of Payroll						
	No.	Annual Payroll		Normal Cost	Unfunded Accrued	Basic Total	Retiree Health	Grand Total		
		Total	Average						Increase	
		(Millions)								
1990	98,939	\$ 2,501	\$ 25,281	6.51 %	2.78 %	9.29 %	4.42 %	13.71 %		
1991&	107,025	2,693	25,163	6.57 %	2.45 %	9.02 %	4.29 %	13.31 %		
1992	109,701	2,767	25,224	6.41 %	2.61 %	9.02 %	4.29 %	13.31 %		
1993	112,748	2,894	25,673	6.40 %	2.62 %	9.02 %	4.29 %	13.31 %		
1994	115,238	3,063	26,580	6.66 %	2.36 %	9.02 %	4.29 %	13.31 %		
1995	114,596	3,204	27,962	6.67 %	2.35 %	9.02 %	4.29 %	13.31 %		
1996@	115,712	3,319	28,684	6.21 %	2.81 %	9.02 %	4.29 %	13.31 %		
1997	114,036	3,405	29,858	6.21 %	2.90 %	9.11 %	4.20 %	13.31 %		

@ 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 for Retirement Allowances				Unfunded /Payroll
			Computed	Valuation	Unfunded	Amort. Years	
	Total	Average	Total	Assets			
1990@	\$2,501	\$25,281	\$ 5,091	\$3,391	\$1,700	34	0.68
1991&	2,693	25,163	5,528	4,030	1,498	32	0.56
1992	2,767	25,224	5,934	4,552	1,382	25	0.50
1993	2,894	25,673	6,671	5,357	1,314	22	0.45
1994	3,063	26,580	7,182	5,956	1,226	21	0.40
1995	3,204	27,962	7,811	6,706	1,105	17	0.34
1996@	3,319	28,684	8,104	7,387	717	8	0.22
1997	3,405	29,858	8,591	8,268	323	3	0.09

@ Revised actuarial assumptions.

& 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.

STATE DIVISION
ACTIVE MEMBERS IN VALUATION DECEMBER 31, 1997
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Ages	Years of Service to Valuation Date													Total Number		
	Men						Women									
	0-4	5-9	10-14	15-19	20-24	25-29	30+	0-4	5-9	10-14	15-19	20-24	25-29		30+	
15-19	871							959	21							1,830
20-24	4,163	9					4,870									9,063
25-29	4,759	685	9				5,091	939	29							11,512
30-34	3,532	2,259	808	32			3,597	2,375	1,050	51						13,704
35-39	2,725	2,022	2,078	1,157	58		3,087	2,234	2,062	1,364		69				16,856
40-44	2,164	1,509	1,769	1,960	839	52	2,785	2,118	1,836	2,080		930	63			18,105
45-49	1,646	1,214	1,424	1,410	1,358	794	2,114	1,973	1,671	1,542		1,283	674	37		17,158
50	260	219	261	205	210	238	326	328	366	261		208	171	34		3,103
51	287	222	275	222	190	251	361	356	343	307		211	186	32		3,278
52	186	162	168	135	114	162	233	220	229	205		137	137	20		2,138
53	156	132	156	127	98	150	182	215	242	199		149	97	36		1,978
54	160	112	142	107	93	122	180	173	235	205		124	79	34		1,808
55	165	138	146	120	79	123	189	177	233	247		145	112	26		1,960
56	149	111	112	110	88	84	148	158	206	202		144	85	25		1,655
57	132	104	119	100	59	64	113	160	188	197		126	75	16		1,485
58	110	88	93	98	53	83	98	149	147	151		114	68	30		1,330
59	118	69	93	111	56	51	87	125	136	177		129	54	10		1,243
60	86	98	93	74	49	52	78	109	145	189		127	56	15		1,203
61	71	79	84	66	56	35	68	92	86	120		69	46	9		905
62	60	69	77	51	37	27	40	67	94	87		71	39	16		757
63	56	42	51	45	23	22	35	56	60	81		50	43	14		593
64	56	45	54	38	18	22	40	42	50	69		44	35	10		540
65	49	38	35	28	12	13	26	38	31	48		31	32	7		410
66	31	18	30	14	10	8	25	26	33	35		19	14	9		285
67	38	17	23	12	7	8	17	19	27	22		19	23	6		245
68	33	15	19	11	8	9	20	15	18	15		18	10	4		201
69	19	8	9	7	8	10	11	6	15	19		8	7	4		142
70 & Over	143	41	28	21	24	18	40	30	32	50		40	22	30		549
Totals	22,225	9,525	8,156	6,261	3,547	2,398	24,820	12,221	9,564	7,923	4,265	2,128	424	114,036		

STATE DIVISION
COMPARATIVE SCHEDULE OF GAINS AND LOSSES
(\$ IN MILLIONS)

Year	Gain (Loss) During The Year Due To							Total Experience*
	Service Retirement	Disability Retirement	Survivor Benefits	Other Turnover	Pay Increases	Investment Income		
1981@	\$ 20.1	\$ (3.3)	\$ 1.9	\$ (12.2)	\$ (252.5)	\$ 41.7	\$ (204.3)	
1982	17.6	0.1	8.0	(4.1)	(197.6)	80.0	(96.0)	
1983#	4.5	(0.6)	5.0	(19.1)	40.1	42.1	72.0	
1984	0.8	11.0	4.6	(52.4)	(23.3)	38.5	(20.8)	
1985	(0.1)	11.5	4.0	(77.8)	90.2	345.9	373.7	
1986@	(0.8)	9.4	3.1	(66.9)	39.6	377.8	362.2	
1987#	4.4	6.3	10.8	(64.4)	(65.3)	53.2	(55.0)	
1988@	8.8	8.0	7.9	(106.9)	(134.0)	91.3	(124.9)	
1989	7.1	15.3	8.4	(61.9)	160.2	192.7	321.8	
1990	25.4	13.0	15.9	(126.6)	43.0	(2.6)	(31.9)	
1991@	5.7	7.4	16.3	(67.1)	86.9	151.6	200.8	
1992	12.4	5.0	15.1	(86.2)	179.0	327.6	452.9	
1993	8.7	9.2	12.2	(74.9)	165.5	393.1	513.8	
1994	9.3	11.3	13.8	(89.3)	182.9	(18.6)	109.4	
1995	13.1	22.0	1.4	(99.5)	127.7	157.9	222.6	
1996@	9.4	16.8	1.6	(49.4)	73.4	230.0	281.8	
1997	8.6	14.7	0.9	1.7	105.3	330.2	461.4	

* Excluding Health and Medicare experience.

After amendments.

@ Revised assumptions.

STATE DIVISION
SALARY INCREASES DURING CALENDAR 1997
TO MEMBERS ACTIVE BOTH AT BEGINNING & END OF YEAR

Age Group Beginning of Year	Number	Actual	Expected	Age Group Beginning of Year
Under 25	4,319	4.72 %	9.49 %	Under 25
25-29	8,491	8.83 %	8.01 %	25-29
30-34	11,844	5.75 %	7.14 %	30-34
35-39	15,368	5.10 %	6.68 %	35-39
40-44	16,434	4.47 %	6.28 %	40-44
45-49	15,813	4.40 %	5.83 %	45-49
50-54	11,001	4.07 %	5.58 %	50-54
55-59	6,957	4.07 %	5.39 %	55-59
60-64	3,408	3.61 %	5.22 %	60-64
65 & Over	1,501	2.73 %	4.76 %	65 & Over
Total	95,136			

Average (including new entrants) 4.10 % 4.75 %

STATE DIVISION
ACTIVE MEMBERS WHO BECAME AGE & SERVICE RETIRANTS
(RETIREMENT WITH MONTHLY PAYMENTS BEGINNING IMMEDIATELY)
DURING CALENDAR 1997

Ages	Number Retiring at Indicated Ages						Grand Total	Ages
	Regular Retirement		Retirement Incentive Plan		Total			
	Men	Women	Men	Women	Men	Women		
Under 55	69	77	141	53	210	130	340	Under 55
55	13	20	22	11	35	31	66	55
56	18	23	36	9	54	32	86	56
57	20	15	19	5	39	20	59	57
58	12	14	26	10	38	24	62	58
59	13	23	18	9	31	32	63	59
60	48	66	16	23	64	89	153	60
61	36	57	19	27	55	84	139	61
62	43	50	34	18	77	68	145	62
63	39	59	25	13	64	72	136	63
64	33	31	25	11	58	42	100	64
65	46	48	17	13	63	61	124	65
66	34	35	11	11	45	46	91	66
67	10	31	16	6	26	37	63	67
68	10	16	7	9	17	25	42	68
69	10	10	3	5	13	15	28	69
70 & Over	47	42	26	17	73	59	132	70 & Over
Totals	501	617	461	250	962	867	1,829	Totals

Expected service retirements

1,233

A year ago 1,790 active members became age and service retirants.

**STATE DIVISION
ACTIVE MEMBERS WHO BECAME DISABILITY RETIRANTS
DURING CALENDAR 1997**

Ages	Number			Ages
	Men	Women	Total	
20-24				20-24
25-29	2		2	25-29
30-34	5	9	14	30-34
35-39	21	29	50	35-39
40-44	31	34	65	40-44
45-49	43	49	92	45-49
50-54	39	70	109	50-54
55-59	42	69	111	55-59
60 & Over	34	30	64	60 & Over
Totals	217	290	507	

Expected disability retirements

273

A year ago, 540 active members became disability retirants.

**STATE DIVISION
ACTIVE MEMBERS WHO LEFT ACTIVE STATUS WITH
NO IMMEDIATE ALLOWANCE PAYABLE
(OTHER THAN DEATHS)
DURING CALENDAR 1997**

Ages	Total			With 5 or more years of service			Ages
	Men	Women	Total	Men	Women	Total	
Under 25	2,431	2,727	5,158	1	2	3	Under 25
25-29	1,606	1,754	3,360	60	106	166	25-29
30-34	1,021	1,249	2,270	195	360	555	30-34
35-39	809	1,169	1,978	277	496	773	35-39
40-44	652	1,020	1,672	296	451	747	40-44
45-49	467	779	1,246	210	372	582	45-49
50-54	267	471	738	119	252	371	50-54
55-59	140	249	389	54	142	196	55-59
60-64	79	87	166	16	44	60	60-64
65-69	52	36	88	11	17	28	65-69
70 & Over	38	25	63	10	10	20	70 & Over
Totals	7,562	9,566	17,128	1,249	2,252	3,501	Totals

Expected terminations

10,933

Service at Termination	Men	Women	Total
0	4,478	4,843	9,321
1	817	1,127	1,944
2	492	659	1,151
3	341	446	787
4	185	239	424
5 & Over	1,249	2,252	3,501
Totals	7,562	9,566	17,128

A year ago, 14,061 active members terminated with no immediate allowance payable.

**STATE DIVISION
ACTIVE MEMBERS WHO DIED DURING CALENDAR 1997**

Ages	With DEATH-IN-SERVICE Allowance Payable			With NO ALLOWANCE Payable			Ages
	Men	Women	Total	Men	Women	Total	
Under 30		1	1	5	2	7	Under 30
30-34				6	1	7	30-34
35-39	5	2	7	1	2	3	35-39
40-44	6		6	5	5	10	40-44
45-49	6	5	11	9	4	13	45-49
50-54	8	3	11	5	5	10	50-54
55-59	16	2	18	7	1	8	55-59
60-64	5	6	11	5	6	11	60-64
65-69	4	2	6	2	5	7	65-69
70 & Over	5		5	3	2	5	70 & Over
Totals	55	21	76	48	33	81	Totals

Expected deaths 107

A year ago, 87 active members died with a death-in-service allowance payable and 83 active members died with no allowance payable.

STATE DIVISION
ACTIVE MEMBERS BY YEARS OF SERVICE
JANUARY 1, 1997 TO DECEMBER 31, 1997

Years of Service to Valuation Date	Number Active			
	Beginning of Year		End of Year	
	Men	Women	Men	Women
0	9,755	10,519	9,573	10,349
1	3,992	4,883	4,090	4,756
2	3,799	4,136	2,952	3,599
3	2,702	3,168	3,230	3,408
4	2,121	2,419	2,380	2,708
5 & Over	30,649	37,569	30,466	36,525
Totals	53,018	62,694	52,691	61,345

LOCAL GOVERNMENT DIVISION

(Excluding Law Enforcement Members)



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

Local Government Division active members included in the valuation totaled 231,668 involving an annual payroll totaling \$4,976,411,829.

Active Members in Valuation December 31, 1997

Groups	Number	Annual Payroll	Average		
			Pay	Age	Service
Men	109,537	\$2,544,203,794	\$23,227	42.0	8.2
Women	122,131	2,432,208,035	19,915	40.9	7.5
Totals	231,668	\$4,976,411,829	\$21,481	41.4	7.8

Also included in the Local Government Division were 21,990 inactive members eligible for deferred retirement allowances or contribution refunds.

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

The Local Government Division's balances, at December 31, 1997, 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	\$ 3,454,977,891	\$ 0	\$ 0	\$ 3,454,977,891
Employer Accumulation Fund*	6,807,589,063	5,152,737,995	401,949,694	12,362,276,752
Market Value Adjustment	652,993,394	199,345,978	47,033,453	899,372,825
Accrued Transfers	(137,860,246)		(8,378,900)	(146,239,146)
Actuarial Value of Assets	\$ 10,777,700,102	\$ 5,352,083,973	\$ 440,604,247	\$16,570,388,322

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 7).

Not available for financing basic retirement allowances.

**LOCAL GOVERNMENT DIVISION RETIREMENT ALLOWANCES
(EXCLUDING LAW ENFORCEMENT MEMBERS)
DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES
DECEMBER 31, 1997**

Actuarial Present Value December 31, of	(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	\$13,981,328,654	\$ 4,187,922,338	\$ 9,793,406,316
Disability allowances likely to be paid present active members who become permanently disabled	2,017,428,623	960,934,629	1,056,493,994
Employer provided portion of survivor benefits likely to be paid to spouses and children of present active members who die before retiring	667,292,090	273,721,296	393,570,794
Separation benefits (refunds of contributions, deferred allowances and employee provided portion of survivor benefits) likely to be paid present active and inactive members	2,336,490,006	1,607,397,720	729,092,286
Total	\$19,002,539,373	\$7,029,975,983	\$11,972,563,390
Actuarial Value of Assets			11,218,304,349
Unfunded Actuarial Accrued Liability			\$ 754,259,041

**LOCAL GOVERNMENT DIVISION
EMPLOYER CONTRIBUTIONS TO SUPPORT
RETIREMENT ALLOWANCES
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL**

Contributions for	Contributions Computed December 31	
	1997	1996
Normal Cost		
Age and Service Allowances	8.84 %	8.83 %
Disability Allowances	2.02 %	2.02 %
Survivor's Benefits	0.58 %	0.59 %
Separation Benefits	3.21 %	3.22 %
Total Normal Cost	14.65 %	14.66 %
(Member Current Contributions)	8.50 %	8.50 %
Employer Normal Cost	6.15 %	6.16 %
Unfunded Actuarial Accrued Liabilities Financing Years*	5	15
Member Benefits	3.40 %	2.31 %
Survivor benefits	(0.20)%	(0.03)%
Total	3.20 %	2.28 %
Computed Employer Contributions	9.35 %	8.44 %

* *The period sufficient to produce an Employer Contribution Rate of 9.35% of payroll for retirement allowances and survivor benefits.*

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

December 31	Active Members in Valuation			Total Employer Contributions as % of Payroll					
	No.	Annual Payroll		Normal Cost	Unfunded Accrued	Basic Total	Retiree Health	Grand Total	
		Total	Average						Increase
		(Millions)							
1990*	173,220	\$ 3,379	\$ 19,506	6.02 %	2.67 %	8.69 %	5.26 %	13.95 %	
1991&	211,835	3,789	17,884	5.95 %	2.49 %	8.44 %	5.11 %	13.55 %	
1992	218,295	3,953	18,109	5.80 %	2.64 %	8.44 %	5.11 %	13.55 %	
1993	220,410	4,159	18,869	5.85 %	2.59 %	8.44 %	5.11 %	13.55 %	
1994	221,987	4,366	19,666	6.16 %	2.28 %	8.44 %	5.11 %	13.55 %	
1995	223,431	4,555	20,384	6.17 %	2.27 %	8.44 %	5.11 %	13.55 %	
1996*	229,954	4,792	20,839	6.16 %	2.28 %	8.44 %	5.11 %	13.55 %	
1997	231,668	4,976	21,481	6.15 %	3.20 %	9.35 %	4.20 %	13.55 %	

* Revised actuarial assumptions.

& 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 for Retirement Allowances				Unfunded /Payroll
			Computed	Valuation	Unfunded	Amort. Years	
	Total	Average	Total	Assets			
1990@	\$ 3,379	\$19,506	\$ 6,666	\$ 4,335	\$ 2,331	37	0.69
1991&	3,789	17,884	7,479	5,181	2,298	36	0.61
1992	3,953	18,109	8,147	6,046	2,101	27	0.53
1993	4,159	18,869	9,291	7,147	2,144	26	0.52
1994	4,366	19,666	9,894	7,814	2,080	28	0.48
1995	4,555	20,384	10,630	8,856	1,774	21	0.39
1996@	4,792	20,839	11,286	9,940	1,346	15	0.28
1997	4,976	21,481	11,973	11,218	755	5	0.15

@ Revised actuarial assumptions.

& 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.

LOCAL GOVERNMENT DIVISION
ACTIVE MEMBERS IN VALUATION DECEMBER 31, 1997
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Ages	Years of Service to Valuation Date													Total Number		
	Men						Women									
	0-4	5-9	10-14	15-19	20-24	25-29	30+	0-4	5-9	10-14	15-19	20-24	25-29		30+	
15-19	5,114							5,987								11,101
20-24	6,979	89						7,861	162							15,091
25-29	7,867	1,544	28					9,539	2,060	79						21,117
30-34	6,165	3,468	1,156	47				7,308	4,183	1,478	94					23,899
35-39	5,777	3,849	2,769	1,557	115			7,610	4,197	2,841	1,598	141				30,454
40-44	5,432	3,598	2,856	2,677	1,891	85		7,409	4,480	2,696	2,427	1,481	84			35,116
45-49	4,232	3,090	2,344	2,110	2,741	1,194	57	5,705	4,252	2,645	1,930	1,719	783	36		32,838
50	794	508	388	350	453	382	48	958	805	560	439	290	190	31		6,196
51	823	608	416	348	390	397	67	971	847	598	443	287	255	40		6,490
52	498	369	289	235	215	231	70	631	521	397	284	186	113	39		4,078
53	475	323	307	232	229	179	72	636	499	403	313	198	117	33		4,016
54	488	303	266	217	205	171	72	557	474	408	329	227	85	58		3,860
55	606	371	299	216	203	187	87	613	531	422	424	244	121	59		4,383
56	495	327	252	185	182	151	96	476	484	409	329	192	104	55		3,737
57	484	279	235	186	151	117	77	394	417	348	293	207	95	37		3,320
58	413	280	230	161	139	136	69	427	347	317	277	206	111	51		3,164
59	406	273	191	192	145	110	77	371	320	268	263	206	93	41		2,956
60	361	262	226	166	165	110	63	315	295	262	268	205	78	25		2,801
61	374	229	219	131	126	78	57	279	235	188	186	142	80	28		2,352
62	359	227	158	126	118	77	57	214	205	187	158	126	78	30		2,120
63	325	185	146	101	89	73	45	197	197	139	142	130	64	20		1,853
64	300	166	114	71	60	39	39	146	137	111	100	94	59	21		1,457
65	282	167	114	59	69	40	21	136	122	99	82	76	35	16		1,318
66	261	123	79	56	32	24	24	107	94	82	78	44	30	24		1,058
67	312	145	68	40	36	25	22	125	68	68	61	49	25	13		1,057
68	267	97	60	39	32	18	15	104	70	43	47	45	28	14		879
69	244	114	55	35	30	16	9	108	49	50	34	37	11	14		806
70 & Over	1,445	700	265	148	115	63	72	528	318	121	117	101	78	80		4,151
Totals	51,578	21,694	13,530	9,685	7,931	3,903	1,216	59,712	26,369	15,219	10,716	6,633	2,717	765		231,668

**LOCAL GOVERNMENT DIVISION
COMPARATIVE SCHEDULE OF GAINS AND LOSSES
(\$ IN MILLIONS)**

Year	Gain (Loss) During The Year Due To							Total Experience*
	Service Retirement	Disability Retirement	Survivor Benefits	Other Turnover	Pay Increases	Investment Income		
1982	\$ 16.3	\$ (2.7)	\$ 11.6	\$ (8.2)	\$ (92.7)	\$ 129.4	\$ 53.7	
1983#	9.7	(3.7)	9.9	(22.8)	23.8	68.4	85.3	
1984	0.5	13.3	5.1	(45.3)	38.7	57.9	70.2	
1985	1.3	9.0	5.4	(81.4)	79.6	539.7	553.6	
1986@	(0.7)	6.8	5.7	(66.9)	72.9	584.3	602.1	
1987#	(0.3)	(0.1)	16.8	(83.4)	129.2	79.3	141.5	
1988@	13.1	5.9	11.5	(131.5)	(112.0)	136.5	(76.5)	
1989	9.4	20.4	12.3	(51.5)	182.2	290.6	463.4	
1990	12.8	10.2	18.8	(123.8)	114.3	0.5	32.8	
1991@	6.6	11.7	21.3	(110.3)	108.1	220.9	258.3	
1992	7.7	12.7	22.9	(121.6)	127.5	472.5	521.7	
1993	8.5	17.7	20.5	(118.1)	230.7	564.6	723.9	
1994	11.3	23.3	21.1	(128.0)	167.7	(26.7)	68.7	
1995	14.0	39.1	2.1	(171.0)	205.3	224.9	314.4	
1996@	10.2	39.1	1.9	(92.1)	194.8	326.3	480.2	
1997	16.7	31.2	2.0	(88.0)	156.5	445.6	564.0	

* Excluding Health and Medicare experience.

After amendments.

@ Revised assumptions.

**LOCAL GOVERNMENT DIVISION
SALARY INCREASES DURING CALENDAR 1997
TO MEMBERS ACTIVE BOTH AT BEGINNING & END OF YEAR**

Age Group Beginning of Year	Number	Actual	Expected	Age Group Beginning of Year
Under 25	13,213	2.39 %	10.11 %	Under 25
25-29	16,006	9.07 %	7.94 %	25-29
30-34	20,342	6.38 %	6.94 %	30-34
35-39	27,018	5.52 %	6.58 %	35-39
40-44	31,547	5.04 %	6.35 %	40-44
45-49	29,953	4.67 %	5.99 %	45-49
50-54	22,106	4.41 %	5.63 %	50-54
55-59	15,834	4.10 %	5.37 %	55-59
60-64	9,221	3.91 %	5.22 %	60-64
65 & Over	7,862	3.28 %	4.76 %	65 & Over
Total	193,102			

Average (including new entrants) 3.10 % 4.75 %

LOCAL GOVERNMENT DIVISION
ACTIVE MEMBERS WHO BECAME AGE & SERVICE RETIRANTS
(RETIREMENT WITH MONTHLY PAYMENTS BEGINNING IMMEDIATELY)
DURING CALENDAR 1997

Ages	Number Retiring at Indicated Ages						Grand Total	Ages
	Regular Retirement		Retirement Incentive Plan		Total			
	Men	Women	Men	Women	Men	Women		
Under 55	181	78	42	18	223	96	319	Under 55
55	50	24	6	7	56	31	87	55
56	37	31	7	4	44	35	79	56
57	36	26	3	3	39	29	68	57
58	31	27	2	6	33	33	66	58
59	38	24	3	4	41	28	69	59
60	86	146	6	3	92	149	241	60
61	76	102	6	10	82	112	194	61
62	129	135	13	8	142	143	285	62
63	121	128	10	3	131	131	262	63
64	69	63	9	4	78	67	145	64
65	101	85	9	3	110	88	198	65
66	76	85	5	1	81	86	167	66
67	59	59	6	1	65	60	125	67
68	43	33	2	2	45	35	80	68
69	39	39	1	2	40	41	81	69
70 & Over	146	148	9	5	155	153	308	70 & Over
Totals	1,318	1,233	139	84	1,457	1,317	2,774	Totals

Expected service retirements

3,161

A year ago 2,942 active members became age and service retirants.

**LOCAL GOVERNMENT DIVISION
ACTIVE MEMBERS WHO BECAME DISABILITY RETIRANTS
DURING CALENDAR 1997**

Ages	Number			Ages
	Men	Women	Total	
20-24				20-24
25-29	4	4	8	25-29
30-34	7	7	14	30-34
35-39	35	28	63	35-39
40-44	76	51	127	40-44
45-49	78	58	136	45-49
50-54	62	65	127	50-54
55-59	85	77	162	55-59
60 & Over	36	47	83	60 & Over
Totals	383	337	720	

Expected disability retirements 556

A year ago, 701 active members became disability retirants.

**LOCAL GOVERNMENT DIVISION
ACTIVE MEMBERS WHO LEFT ACTIVE STATUS WITH
NO IMMEDIATE ALLOWANCE PAYABLE
(OTHER THAN DEATHS)
DURING CALENDAR 1997**

Ages	Total			With 5 or more years of service			Ages
	Men	Women	Total	Men	Women	Total	
Under 25	5,116	5,202	10,318	6	10	16	Under 25
25-29	2,108	2,558	4,666	89	173	262	25-29
30-34	1,526	1,942	3,468	241	344	585	30-34
35-39	1,269	1,844	3,113	276	410	686	35-39
40-44	1,209	1,761	2,970	331	414	745	40-44
45-49	972	1,334	2,306	296	379	675	45-49
50-54	653	843	1,496	209	259	468	50-54
55-59	433	545	978	144	215	359	55-59
60-64	364	294	658	91	83	174	60-64
65-69	280	170	450	42	47	89	65-69
70 & Over	362	142	504	72	32	104	70 & Over
Totals	14,292	16,635	30,927	1,797	2,366	4,163	Totals

Expected terminations

24,214

Service at Termination	Men	Women	Total
0	8,517	9,301	17,818
1	2,025	2,348	4,373
2	876	1,233	2,109
3	581	775	1,356
4	496	612	1,108
5 & Over	1,797	2,366	4,163
Totals	14,292	16,635	30,927

A year ago, 28,325 active members terminated with no immediate allowance payable.

**LOCAL GOVERNMENT DIVISION
ACTIVE MEMBERS WHO DIED DURING CALENDAR 1997**

Ages	With DEATH-IN-SERVICE Allowance Payable			With NO ALLOWANCE Payable			Ages
	Men	Women	Total	Men	Women	Total	
Under 30		2	2	5	2	7	Under 30
30-34	1	1	2	3	2	5	30-34
35-39	4	5	9	6	1	7	35-39
40-44	8	6	14	7	8	15	40-44
45-49	23	6	29	16	5	21	45-49
50-54	18	8	26	5	9	14	50-54
55-59	20	9	29	8	5	13	55-59
60-64	33	7	40	11	9	20	60-64
65-69	25	2	27	3	9	12	65-69
70 & Over	30	1	31	23	12	35	70 & Over
Totals	162	47	209	87	62	149	Totals

Expected deaths

252

A year ago, 174 active members died with a death-in-service allowance payable and 156 active members died with no allowance payable.

**LOCAL GOVERNMENT DIVISION
ACTIVE MEMBERS BY YEARS OF SERVICE
JANUARY 1, 1997 TO DECEMBER 31, 1997**

Years of Service to Valuation Date	Number Active			
	Beginning of Year		End of Year	
	Men	Women	Men	Women
0	21,778	24,540	21,358	24,802
1	11,711	12,378	11,080	12,851
2	7,556	8,776	7,868	8,924
3	6,034	6,886	6,096	7,167
4	5,221	6,338	5,176	5,968
5 & Over	57,770	60,966	57,959	62,419
Totals	110,070	119,884	109,537	122,131

LAW ENFORCEMENT DIVISION



LAW ENFORCEMENT DIVISION

Law Enforcement active members included in the valuation totaled 7,256, involving an annual payroll totaling \$258,896,879.

Active Members in Valuation December 31, 1997

Groups	Number	Annual Payroll	Average		
			Pay	Age	Service
Men	6,480	\$233,604,481	\$36,050	39.4	11.7
Women	776	25,292,398	32,593	38.7	10.0
Totals	7,256	\$258,896,879	\$35,680	39.3	11.5

Also included with the Law Enforcement members were 191 inactive members eligible for deferred retirement allowances or contribution refunds.

LAW ENFORCEMENT DIVISION
EMPLOYEES SAVINGS FUND AND EMPLOYER ACCUMULATION FUND

The Law Enforcement fund balances, at December 31, 1997, 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	\$ 201,362,947	\$ 0	\$ 0	\$ 201,362,947
Employer Accumulation Fund*	512,625,908	235,180,466	31,251,475	779,057,849
Market Value Adjustment	38,772,577	9,098,518	2,689,799	50,560,894
Accrued Transfers	(13,287,495)		(583,455)	(13,870,950)
Actuarial Value of Assets	\$ 739,473,937	\$ 244,278,984	\$ 33,357,819	\$1,017,110,740

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 7).*

Not available for financing basic retirement allowances.

**LAW ENFORCEMENT DIVISION RETIREMENT ALLOWANCES
DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES
DECEMBER 31, 1997**

	(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	\$1,020,935,273	\$ 370,043,864	\$ 650,891,409
Disability allowances likely to be paid present active members who become permanently disabled	226,668,214	102,782,861	123,885,353
Employer provided portion of survivor benefits likely to be paid to spouses and children of present active members who die before retiring	55,581,671	24,913,651	30,668,020
Separation benefits (refunds of contributions, deferred allowances and employee provided portion of survivor benefits) likely to be paid present active and inactive members	78,111,897	62,398,207	15,713,690
Total	\$1,381,297,055	\$560,138,583	\$821,158,472
Actuarial Value of Assets			772,831,756
Unfunded Actuarial Accrued Liability			\$ 48,326,716

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

Contributions for	Contributions Computed December 31	
	1997	1996
Normal Cost		
Age and Service Allowances	12.89 %	12.86 %
Disability Allowances	3.61 %	3.64 %
Survivor's Benefits	0.88 %	0.89 %
Separation Benefits	2.11 %	2.11 %
Total Normal Cost	19.49 %	19.50 %
(Member Current Contributions)	9.00 %	9.00 %
Employer Normal Cost	10.49 %	10.50 %
Unfunded Actuarial Accrued Liabilities		
Financing Years*	10	30
Member Benefits	2.12 %	0.76 %
Survivor benefits	(0.11)%	(0.02)%
Total	2.01 %	0.74 %
Computed Employer Contributions	12.50 %	11.24 %

* *The period sufficient to produce an Employer Contribution Rate of 12.50% of payroll for retirement allowances and survivor benefits.*

**LAW ENFORCEMENT DIVISION
COMPARATIVE STATEMENT**

December 31	Active Members in Valuation			Total Employer Contributions as % of Payroll					
	No.	Annual Payroll		Normal Cost	Unfunded Accrued	Basic Total	Retiree Health	Grand Total	
		Total	Average						Increase
		(Thousands)							
1990	5,804	\$156,339	\$26,936	9.52 %	1.29 %	10.81 %	5.19 %	16.00 %	
1991@	6,088	169,008	27,761	9.32 %	1.49 %	10.81 %	5.89 %	16.70 %	
1992	5,852	169,337	28,937	9.65 %	1.16 %	10.81 %	5.89 %	16.70 %	
1993	6,032	182,576	30,268	9.53 %	1.28 %	10.81 %	5.89 %	16.70 %	
1994	6,252	196,467	31,425	9.71 %	1.10 %	10.81 %	5.89 %	16.70 %	
1995	6,605	214,273	32,441	9.69 %	1.12 %	10.81 %	5.89 %	16.70 %	
1996@	6,742	229,138	33,987	10.50 %	0.74 %	11.24 %	5.46 %	16.70 %	
1997	7,256	258,897	35,680	10.49 %	2.01 %	12.50 %	4.20 %	16.70 %	

@ Revised actuarial assumptions.

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

Dec. 31	Active Payroll		Active Member Accrued Liabilities for Retirement Allowances				Unfunded /Payroll
			Computed	Valuation	Unfunded	Amort. Years	
	Total	Average	Total	Assets			
1990	\$ 156	\$26,936	\$ 388	\$ 341	\$ 47	32	0.30
1991 [@]	169	27,761	438	399	39	19	0.23
1992	169	28,937	467	452	15	8	0.09
1993	183	30,268	533	512	21	10	0.11
1994	196	31,425	580	555	25	13	0.13
1995	214	32,441	638	612	26	12	0.12
1996 [@]	229	33,987	711	676	35	30	0.15
1997	259	35,680	821	773	48	10	0.19

[@] 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
COMPARATIVE SCHEDULE OF GAINS AND LOSSES
(\$ IN MILLIONS)**

Year	Gain (Loss) During The Year Due To						Total Experience*
	Service Retirement	Disability Retirement	Survivor Benefits	Other Turnover	Pay Increases	Investment Income	
1982	\$ 0.3	\$ 0.1	\$ 0.3	\$ 0.5	\$ (2.2)	\$ 2.2	\$ 1.2
1983#	0.4	(0.5)	0.1	0.3	(0.2)	1.8	1.9
1984	0.8	(0.2)	0.2	0.0	0.1	2.0	2.9
1985	(0.3)	(0.3)	0.3	(0.7)	1.2	15.4	15.6
1986@	0.0	(0.3)	0.4	(2.3)	(3.5)	18.7	13.0
1987#	0.1	(0.6)	0.3	(3.1)	3.0	1.1	0.8
1988@	0.1	0.6	0.5	(4.9)	1.1	5.3	2.7
1989	0.2	(0.1)	0.7	(4.3)	10.3	9.6	16.4
1990	(0.2)	0.2	0.9	(6.4)	8.1	(2.6)	0.0
1991@	0.2	(0.2)	0.6	(5.6)	3.7	10.4	9.1
1992	0.5	(2.5)	0.9	(5.6)	5.5	23.1	21.9
1993	(1.4)	(0.9)	1.3	(5.0)	9.3	27.6	30.9
1994	(0.6)	(0.2)	1.4	(6.8)	7.9	(1.4)	0.3
1995	1.6	3.2	0.3	(8.4)	8.8	11.8	17.3
1996@	0.3	1.5	0.1	(4.3)	5.8	17.2	20.6
1997	1.9	(1.1)	0.2	(3.3)	5.8	25.6	29.1

* Excluding Health and Medicare experience.
After amendments.
@ Revised assumptions.

**LAW ENFORCEMENT DIVISION
SALARY INCREASES DURING CALENDAR 1997
TO MEMBERS ACTIVE BOTH AT BEGINNING & END OF YEAR**

Age Group Beginning of Year	Number	Actual	Expected	Age Group Beginning of Year
Under 25	137	22.18 %	10.84 %	Under 25
25-29	915	11.66 %	9.01 %	25-29
30-34	980	7.60 %	7.48 %	30-34
35-39	1,067	5.35 %	6.72 %	35-39
40-44	1,175	4.95 %	6.29 %	40-44
45-49	931	4.82 %	6.01 %	45-49
50-54	541	5.05 %	5.86 %	50-54
55-59	293	5.55 %	5.67 %	55-59
60-64	109	5.12 %	5.32 %	60-64
65 & Over	34	5.61 %	4.76 %	65 & Over
Total	6,182			

Average (including new entrants) 5.00 % 4.75 %

LAW ENFORCEMENT DIVISION
ACTIVE MEMBERS WHO BECAME AGE & SERVICE RETIRANTS
(RETIREMENT WITH MONTHLY PAYMENTS BEGINNING IMMEDIATELY)
DURING CALENDAR 1997

Ages	Number Retiring at Indicated Ages						Grand Total	Ages
	Regular Retirement		Retirement Incentive Plan		Total			
	Men	Women	Men	Women	Men	Women		
Under 55	21		2		23		23	Under 55
55	5				5		5	55
56	2				2		2	56
57	5				5		5	57
58	2				2		2	58
59	3				3		3	59
60	4				4		4	60
61	4	2			4	2	6	61
62	4		1		5		5	62
63	5	1			5	1	6	63
64	4	2			4	2	6	64
65	2				2		2	65
66	2				2		2	66
67	1				1		1	67
68	1				1		1	68
69								69
70 & Over	4				4		4	70 & Over
Totals	69	5	3		72	5	77	Totals

Expected service retirements

74

A year ago 67 active members became age and service retirants.

**LAW ENFORCEMENT DIVISION
ACTIVE MEMBERS WHO BECAME DISABILITY RETIRANTS
DURING CALENDAR 1997**

Ages	Number			Ages
	Men	Women	Total	
20-24				20-24
25-29	3		3	25-29
30-34	2	2	4	30-34
35-39	9	2	11	35-39
40-44	5	3	8	40-44
45-49	16	4	20	45-49
50-54	17	2	19	50-54
55-59	3	2	5	55-59
60 & Over	4		4	60 & Over
Totals	59	15	74	

Expected disability retirements 42

A year ago, 86 active members became disability retirants.

**LAW ENFORCEMENT DIVISION
ACTIVE MEMBERS WHO LEFT ACTIVE STATUS WITH
NO IMMEDIATE ALLOWANCE PAYABLE
(OTHER THAN DEATHS)
DURING CALENDAR 1997**

Ages	Total			With 5 or more years of service			Ages
	Men	Women	Total	Men	Women	Total	
Under 25	14	3	17				Under 25
25-29	66	7	73	7	2	9	25-29
30-34	40	9	49	16	2	18	30-34
35-39	26	5	31	17	2	19	35-39
40-44	15	4	19	11	2	13	40-44
45-49	23	2	25	16	1	17	45-49
50-54	16	3	19	8	3	11	50-54
55-59	8	1	9	4		4	55-59
60-64	1		1				60-64
65-69	3		3	2		2	65-69
70 & Over	3		3	2		2	70 & Over
Totals	215	34	249	83	12	95	Totals

Expected terminations 240

Service at Termination	Men	Women	Total
0	56	9	65
1	31	5	36
2	23	3	26
3	13	5	18
4	9		9
5 & Over	83	12	95
Totals	215	34	249

A year ago, 190 active members terminated with no immediate allowance payable.

**LAW ENFORCEMENT DIVISION
ACTIVE MEMBERS WHO DIED DURING CALENDAR 1997**

Ages	With DEATH-IN-SERVICE Allowance Payable			With NO ALLOWANCE Payable			Ages
	Men	Women	Total	Men	Women	Total	
Under 30				1		1	Under 30
30-34	1		1				30-34
35-39							35-39
40-44							40-44
45-49	1		1	1		1	45-49
50-54	3		3		1	1	50-54
55-59	1		1				55-59
60-64							60-64
65-69							65-69
70 & Over				1		1	70 & Over
Totals	6		6	3	1	4	Totals

Expected deaths

9

A year ago, 7 active members died with a death-in-service allowance payable and 3 active members died with no allowance payable.

**LAW ENFORCEMENT DIVISION
ACTIVE MEMBERS BY YEARS OF SERVICE
JANUARY 1, 1997 TO DECEMBER 31, 1997**

Years of Service to Valuation Date	Number Active			
	Beginning of Year		End of Year	
	Men	Women	Men	Women
0	253	31	246	39
1	337	49	296	41
2	353	51	367	47
3	285	45	390	55
4	296	32	317	44
5 & Over	4,503	507	4,864	550
Totals	6,027	715	6,480	776

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
		29	90
62			91
63			94
		29	95
64			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
	Men	Women	Men	Women	Enforcement
50-54	15%	20%	23%	20%	25%
55-58	15%	20%	23%	20%	25%
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
	Men	Women	Men	Women	Enforcement
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

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%	23%	20%	25%
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

**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						Pay Increase Assumptions For An Individual Employee			
		Death		Withdrawal		Disability		Merit & Seniority	Base (Economy)	Increase Next Year	
		Men	Women	Men	Women	Men	Women				
	0			36.00%	34.50%						
	1			17.00%	18.00%						
	2			13.00%	14.00%						
	3			10.00%	11.00%						
	4			8.00%	9.00%						
25	5 & Over	0.04%	0.02%	6.80%	8.40%	0.07%	0.06%	3.80%	4.75%	8.55%	
30		0.05%	0.03%	5.40%	7.28%	0.11%	0.09%	2.40%	4.75%	7.15%	
35		0.07%	0.04%	4.40%	5.72%	0.25%	0.15%	1.95%	4.75%	6.70%	
40		0.11%	0.06%	3.52%	4.40%	0.39%	0.26%	1.70%	4.75%	6.45%	
45		0.19%	0.08%	3.08%	3.76%	0.62%	0.39%	1.40%	4.75%	6.15%	
50		0.34%	0.13%	2.82%	3.36%	0.95%	0.63%	1.00%	4.75%	5.75%	
55		0.55%	0.19%	2.58%	2.96%	1.46%	0.97%	0.65%	4.75%	5.40%	
60		0.84%	0.32%	0.60%	0.80%	1.88%	1.70%	0.54%	4.75%	5.29%	
Ref		0.7	* 68 0.7	* 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		Merit & Seniority	Base (Economy)	Increase Next Year
		Men	Women	Men & Women	Men & Women	Men & Women				
	0			18.00%						
	1			10.00%						
	2			8.00%						
	3			7.00%						
	4			6.00%						
25	5 & Over	0.04%	0.02%	4.80%		0.20%	5.10%	4.75%	9.85%	
30		0.05%	0.03%	3.52%		0.26%	3.10%	4.75%	7.85%	
35		0.07%	0.04%	2.78%		0.42%	2.10%	4.75%	6.85%	
40		0.11%	0.06%	2.32%		0.62%	1.70%	4.75%	6.45%	
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		0.7	* 68 0.7	* 69 187		194	150			
				328						

Single Life Retirement Values

Sample Attained Ages	Present Value of \$1 Monthly for Life Increasing 3.0% Annually (First Increase After 1 Year)		Future Life Expectancy (years)	
	Males	Females	Males	Females
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:	68 x 0.90	69 x 0.90		

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).

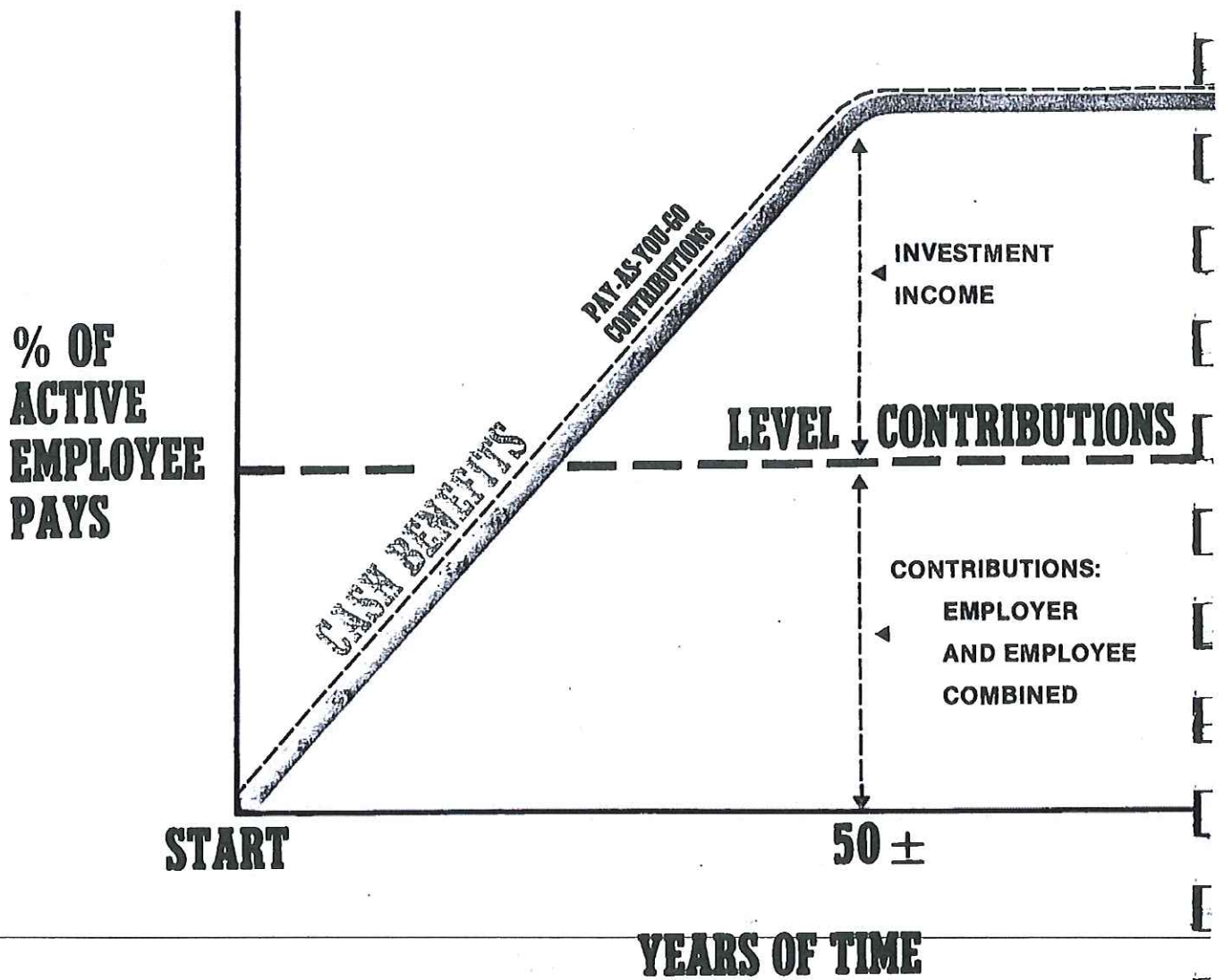
Computing Contributions to Support Fund Benefits. From a given schedule of benefits and from employee and asset data, the actuary calculates the contribution rates to support the benefits by means of *an actuarial valuation and a funding method.*

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

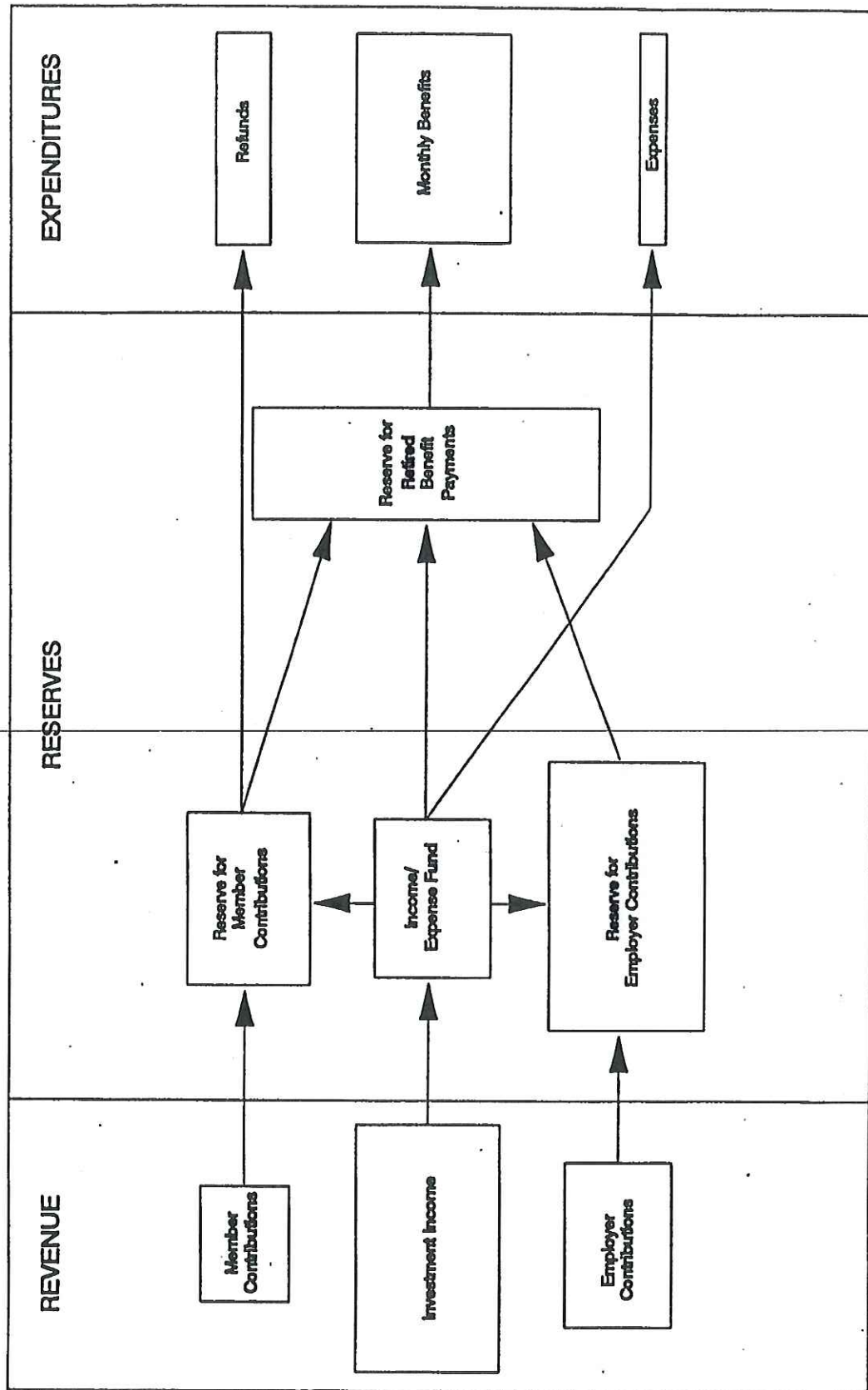
E. + *The funding method* for employer contributions (the long-term, planned pattern for employer contributions)

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	Unfunded Actuarial Accrued Liabilities (UAAL)	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 %
1997	34,971	33,846	1,125	97 %	8,640	13 %

* Revised actuarial assumptions.