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Established 1845

March 13, 1987

Board of Pensions and Retirement
City of Philadelphia
1212 Two Penn Center
Philadelphia, Pennsylvania 19102

Ladies and Gentlemen:

We respectfully present the results of our actuarial valuation as of July 1, 1986 of the City of Philadelphia Municipal Retirement System.

The employee data and the financial information used in this report were provided by the City and the Board of Pensions and Retirement. The actuarial valuation report may be used to support contributions to the Retirement System for the fiscal year ending June 30, 1988.

The valuation reflects changes in funding that are required due to the Municipal Pension Plan Funding Standard and Recovery Act enacted December 18, 1984.

A summary of the determinations made in this actuarial valuation is as follows (\$000 omitted in numbers shown):

Actuarial Accrued Liability as of July 1, 1986	\$3,008,636
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Assets as of July 1, 1986 for Valuation Purposes	\$1,289,537
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Unfunded Actuarial Accrued Liability as of July 1, 1986	\$1,719,099
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City Normal Cost as a Percent of Payroll
for the Year, Assuming Payment is Made at
End of Year (Before Deduction of Contributions from Commonwealth of Pennsylvania):

Municipal Division	7.125%
Police Division	9.862
Fire Division	9.807
All Divisions Combined	8.020%

CITY OF PHILADELPHIA
MUNICIPAL RETIREMENT SYSTEM

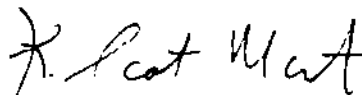
ACTUARIAL VALUATION REPORT

AS OF

JULY 1, 1986

Prepared by:

EDWARD H. FRIEND & COMPANY
A Division of Johnson & Higgins
of Washington, D.C., Inc.



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Albert Pike, 3rd, F.C.A., A.S.A.
Vice President

March 13, 1987
Washington, D.C.

PART I
SUMMARY AND ANALYSIS OF FINDINGS

This part presents a summary and analysis of the findings of the actuarial valuation as of July 1, 1986 of the City of Philadelphia Municipal Retirement System.

A. Summary of Findings

A summary of the findings of the actuarial valuation for the municipal division, police division and fire division combined is presented in the following table. The results, determined as of July 1, 1986, are the basis upon which the City contributions for the fiscal year ending June 30, 1988 will be calculated. The valuation reflects changes in the funding required by the Municipal Pension Plan Funding Standard and Recovery Act (Act 205) enacted December 18, 1984.

July 1, 1986 Actuarial Valuation
(\$000 Omitted)

1. Participants

a. Active	31,970
b. Retired	20,046
c. Disabled	4,263
d. Terminated Vested	449
e. Total	<u>56,728</u>

2. Total Annual Salaries \$ 776,714

3. Actuarial Accrued Liability \$3,008,636

4. Assets for Valuation Purposes \$1,289,537

5. Unfunded Actuarial Accrued Liability \$1,719,099

6. City Normal Cost as of Percent of Payroll
(Before Deduction of Contributions from
Commonwealth)

a. Assuming Beginning of Year Payment	7.358%
b. Assuming End of Year Payment	8.020%

ference between the market value of the fixed income portfolio and the actuarial present value of the fixed income portfolio as compared to the prior year. This calculation is made in order to value both assets and non-active liabilities on the same basis.

During the year, several modifications were made to the benefits provided under the Retirement System. As required by Act 205, each benefit modification must be identified and funded in annual level dollar payments. A summary of the benefit modifications that were adopted are:

1. Health care benefits were added payable to survivors of uniformed personnel on whose account service-connected death benefits are being paid.
2. Municipal division retirees as of July 1, 1980 who had been retired 5 or more years as of that date and who had 15 or more years of service at retirement were granted an 8% benefit increase, if the same had not already been granted.
3. Members of the police and fire divisions who were laid off in 1978 may repurchase the period of layoff for retirement benefit purposes.
4. Retirement System members who did not elect to transfer to Plan J (current system for municipal division) were again given the opportunity to transfer provided the member is currently an employee or a retired member. In addition, those employees who did transfer in 1975 are to be refunded their portion of the contributions which were made due to the transfer and which represented employer normal cost amounts.

The impact of the actuarial experience and plan amendments on the plan's normal cost and unfunded actuarial accrued liability is as follows:

Funding Method

Act 205 generally requires that the unfunded actuarial accrued liability be funded in annual level dollar payments. Because the City of Philadelphia has been classified as a Distress Level III municipality, it is exempted from this requirement with respect to unfunded liabilities as of July 1, 1985 and may amortize the unfunded actuarial accrued liability as follows:

1. The remaining July 1, 1985 unfunded actuarial accrued liability (net of the Bogen and Dombrowski class action obligations) is amortized over 40 years ending June 30, 2019 in annual payments increasing 6% per annum.
2. Changes in the actuarial accrued liability realized after July 1, 1985 are amortized in level dollar payments over the period of years shown as follows:
 - a. Changes in actuarial assumptions 20 years
 - b. Experience gains and losses 15 years
 - c. Benefit modifications for active members 20 years
 - d. Benefit modifications for non-active members 10 years

As mentioned previously, the results of this valuation determine the City's contribution requirements for the fiscal year ending June 30, 1988. Because of the one-year delay in the recognition of the report's findings, the unfunded actuarial accrued liability is adjusted from July 1, 1986 to July 1, 1987 to recognize the one-year delay. The following table summarizes the derivation of the unfunded actuarial accrued liability payment for the fiscal year ending June 30, 1988:

Part V presents the salient features of the Retirement System on which valuation determinations are based, and Part VI presents the actuarial cost method, factors and assumptions used in determining costs.

Part VII of the report presents the actuarial present value of accrued benefits determined in accordance with Statement No. 35 of the Financial Accounting Standards Board. This Part reflects a measurement of the accrued benefits for the Retirement System as of July 1, 1986 and relates the value of these accrued benefits to the market value of funds on hand.

It is important to note that the liability for the accrued benefits of the Retirement System shown in Part VII is different from the entry age liability. The former is the amount that would need to be on hand if the plan were to disregard future pay increases. The latter is the amount that would be on hand if a continuation of the plan is intended, had the plan always been funded under the entry age method and had actuarial experience exactly followed the current actuarial assumptions.

Reference to the first section of Part VII will show the actuarial present value of accrued benefits to be \$2,458,384,000. The vested accrued liability as of July 1, 1986 is \$2,319,985,000. This compares with the market value of fund assets of \$1,356,693,000.

The valuation assets which are compared to liabilities are determined at adjusted market value as of July 1, 1986. As such, the fixed income portion of the assets reflects current market value rates of return. The liabilities, on the other hand, have been determined assuming the valuation interest rate assumption of 9%. In order that both assets and liabilities be valued on the same basis, the portion of the fixed income portfolio which can be matched with expected future payments is determined based upon the valuation interest rate, 9%, and the difference between this value of assets and the market value of assets is subtracted from the accrued liability.

From the accrued liability is further subtracted the assets of the fund to determine the unfunded actuarial accrued liability as of the valuation date.

Experience gains and losses are determined as the difference between the expected unfunded actuarial accrued liability and the actual unfunded actuarial accrued liability (as determined in the preceding paragraphs) both calculated as of the valuation date.

The portion of the unfunded actuarial accrued liability attributable to the Dombrowski class action suit is amortized in level dollar payments over 40 years ending June 30, 2009. The portion of the unfunded actuarial accrued liability attributable to the Bogen class action suit is amortized in level dollar payments over 20 years ending June 30, 1992. The remaining July 1, 1985 unfunded actuarial accrued liability is amortized over 40 years ending June 30, 2019 in annual payments increasing 6.0% per annum. Changes in the actuarial accrued liability realized after July 1, 1985 are amortized in level dollar payments over the period of years shown on the following page.

TABLE 1
DERIVATION OF NORMAL COST AS OF JULY 1, 1986^{1J}
(\$000 Omitted)

	<u>MUNICIPAL</u>	<u>POLICE</u>	<u>FIRE</u>	<u>TOTAL</u>
1. Number of Active Members	22,395	6,860	2,715	31,970
2. Total Normal Cost				
a. Service Retirement	\$ 34,615	\$ 19,841	\$ 7,840	\$ 62,296
b. Pre-Retirement Death	2,981	893	357	4,230
c. Disability Retirement	6,818	5,109	2,022	13,949
d. Vested Termination	5,259	546	221	6,027
e. Refund of Non-Vested Members' Contributions	2,074	440	181	2,695
f. Health Care Benefit	0	43	16	59
g. Administrative Expenses	1,747	644	259	2,650
h. Total	<u>\$ 53,494</u>	<u>\$ 27,516</u>	<u>\$10,896</u>	<u>\$ 91,907</u>
3. Expected Employee Contributions	\$ 19,424	\$ 10,970	\$ 4,360	\$ 34,754
4. City Normal Cost: (2h) - (3)	\$ 34,070	\$ 16,546	\$ 6,537	\$ 57,153
5. Current Total Annual Payroll	\$521,192	\$182,863	\$72,660	\$776,714
6. City Normal Cost as a Percent of Pay Assuming Payment at Beginning of Year: (4) ÷ (5)	6.537%	9.048%	8.997%	7.358%
7. City Normal Cost as a Percent of Pay Assuming Payment at End of Year: (6) x 1.09	7.125%	9.862%	9.807%	8.020%

^{1J} Numbers may not add due to rounding.

TABLE 2 (CONTINUED)
DERIVATION OF UNFUNDED ACTUARIAL
ACCRUED LIABILITY AS OF JULY 1, 1986 1/
(\$000 Omitted)

	<u>MUNICIPAL</u>	<u>POLICE</u>	<u>FIRE</u>	<u>TOTAL</u>
5. Actuarial Accrued Liability: (3) - (4)				
a. Active Members				
(i) Service Retirement	\$ 685,727	\$ 427,297	\$178,480	\$1,291,504
(ii) Pre-Retirement Death	42,228	11,336	4,723	58,288
(iii) Disability Retirement	88,500	59,926	24,825	173,251
(iv) Vested Termination	54,248	3,183	1,112	58,543
(v) Refund of Non-Vested Members' Contributions	(14,305)	(3,093)	(1,311)	(18,709)
(vi) Health Care Benefit	0	336	130	466
(vii) Subtotal	\$ 856,398	\$ 498,984	\$207,959	\$1,563,341
b. Non-Active Members				
(i) Service Retired	\$ 605,157	\$ 377,349	\$157,585	\$1,140,091
(ii) Disabled	121,459	145,374	38,354	305,187
(iii) Terminated Vested	12,919	4,918	751	18,588
(iv) Non-Vested Members' Contributions	860	95	26	981
(v) Health Care Benefit	0	3,188	1,228	4,415
(vi) Subtotal	\$ 740,395	\$ 530,923	\$197,945	\$1,469,262
c. Total	\$1,596,793	\$1,029,907	\$405,904	\$3,032,604
6. Rationalization of Retiree Liability to Market Return Basis	\$ (12,078)	\$ (8,661)	\$ (3,229)	\$ (23,968)
7. Net Actuarial Accrued Liability: (5) + (6)	\$1,584,715	\$1,021,246	\$402,675	\$3,008,636
8. Assets for Valuation Purposes	\$ 685,913	\$ 432,038	\$171,586	\$1,289,537
9. Unfunded Actuarial Accrued Liability: (7) - (8)	\$ 898,802	\$ 589,208	\$231,089	\$1,719,099

1/ Numbers may not add due to rounding.

TABLE 4A

DEVELOPMENT OF MUNICIPAL DIVISION ANNUAL PAYMENT TOWARD THE
UNFUNDED ACTUARIAL ACCRUED LIABILITY FOR FISCAL YEAR ENDING JUNE 30, 1988 1/
(\$000 Omitted)

	OUTSTANDING BALANCE JULY 1, 1986	FISCAL YEAR ENDING JUNE 30, 1988		
		EXPECTED BALANCE JULY 1, 1987	AMORTIZATION PERIOD REMAINING	ANNUAL PAYMENT
1. Expected July 1, 1986 Unfunded Actuarial Accrued Liability Based on July 1, 1985 Valuation:				
a. Dombrowski	\$ 19,281	\$ 19,004	22	\$ 2,013
b. Bogen	11,920	10,336	5	2,657
c. Remaining 2/	<u>927,275</u>	<u>965,106</u>	<u>32</u>	<u>49,023 3/</u>
d. Subtotal	\$958,475	\$994,446	--	\$53,693
2. Changes in Unfunded Actuarial Accrued Liability as of July 1, 1986:				
a. Non-Active Benefit Changes	\$ 2,591	\$ 2,825	10	\$ 440
b. Active Benefit Changes	4,053	4,418	20	484
c. (Gains)/Losses	<u>(66,319)</u>	<u>(72,287)</u>	<u>15</u>	<u>(8,968)</u>
d. Subtotal	\$(59,674)	\$(65,045)	--	\$(8,044)
3. Total: (1d) + (2d)	\$898,802	\$929,401	--	\$45,649

1/ Numbers may not add due to rounding.

2/ Includes July 1, 1985 benefit increase of \$25 per month to certain non-active members, not previously reported.

3/ Payment increasing 6% per annum, all other payments are level dollar.

TABLE 4C

DEVELOPMENT OF FIRE DIVISION ANNUAL PAYMENT TOWARD THE
UNFUNDED ACTUARIAL ACCRUED LIABILITY FOR FISCAL YEAR ENDING JUNE 30, 1988 1/
(\$000 Omitted)

	OUTSTANDING BALANCE JULY 1, 1986	EXPECTED BALANCE JULY 1, 1987	FISCAL YEAR ENDING JUNE 30, 1988 AMORTIZATION PERIOD REMAINING	ANNUAL PAYMENT
1. Expected July 1, 1986 Unfunded Actuarial Accrued Liability Based on July 1, 1985 Valuation:				
a. Dombrowski	\$ 4,911	\$ 4,841	22	\$ 513
b. Bogen	3,036	2,633	5	677
c. Remaining 2/	<u>237,480</u>	<u>247,231</u>	<u>32</u>	<u>12,558 3/</u>
d. Subtotal	\$245,427	\$254,705	--	\$13,748
2. Changes in Unfunded Actuarial Accrued Liability as of July 1, 1986:				
a. Non-Active Benefit Changes	\$ 1,228	\$ 1,338	10	\$ 209
b. Active Benefit Changes	174	190	20	21
c. (Gains)/Losses	<u>(15,740)</u>	<u>(17,157)</u>	<u>15</u>	<u>(2,128)</u>
d. Subtotal	\$(14,338)	\$(15,629)	--	\$(1,899)
3. Total: (1d) + (2d)	\$231,089	\$239,076	--	\$11,849

1/ Numbers may not add due to rounding.

2/ Includes July 1, 1985 benefit increase of \$25 per month to certain non-active members, not previously reported.

3/ Payment increasing 6% per annum, all other payments are level dollar.

TABLE 5

SCHEDULE OF ANNUAL PAYMENTS TO FUND THE
ANTICIPATED JULY 1, 1987 UNFUNDED ACTUARIAL ACCRUED LIABILITY 1/
 (\$000 Omitted)

FISCAL YEAR ENDING JUNE 30	ANNUAL PAYMENT (MADE AT END OF YEAR) TOWARD:				PROGRESS OF UNFUNDED ACTUARIAL ACCRUED LIABILITY	ESTIMATED ANNUAL PAYROLL	ANNUAL PAYMENT AS A PERCENT OF PAYROLL
	MUNICIPAL	POLICE	FIRE	TOTAL			
1987	\$ N/A	\$ N/A	\$ N/A	\$ N/A	\$1,778,542	\$ 776,714	N/A
1988	45,649	31,035	11,849	88,533	1,850,078	823,317	10.8%
1989	48,590	32,924	12,602	94,117	1,922,468	872,716	10.8
1990	51,708	34,927	13,401	100,036	1,995,455	925,079	10.8
1991	55,013	37,050	14,247	106,310	2,068,736	980,584	10.8
1992	58,516	39,300	15,145	112,960	2,141,961	1,039,419	10.9
1993	59,572	39,985	15,419	114,976	2,219,762	1,101,784	10.4
1994	63,509	42,513	16,427	122,449	2,297,092	1,167,891	10.5
1995	67,681	45,192	17,496	130,370	2,373,460	1,237,965	10.5
1996	72,104	48,033	18,629	138,766	2,448,306	1,312,243	10.6
1997	76,792	51,044	19,830	147,666	2,520,987	1,390,977	10.6
1998	81,321	53,694	20,895	155,910	2,591,966	1,474,436	10.6
1999	86,588	57,077	22,244	165,910	2,659,334	1,562,902	10.6
2000	92,172	60,663	23,674	176,510	2,722,164	1,656,676	10.7
2001	98,091	64,465	25,191	187,746	2,779,413	1,756,077	10.7
2002	104,364	68,494	26,798	199,656	2,829,904	1,861,441	10.7
2003	119,982	76,785	30,630	227,398	2,857,197	1,973,128	11.5
2004	127,032	81,313	32,436	240,780	2,873,565	2,091,515	11.5
2005	134,504	86,112	34,350	254,965	2,877,221	2,217,006	11.5
2006	142,424	91,199	36,379	270,001	2,866,170	2,350,027	11.5
2007	150,820	96,591	38,529	285,940	2,838,185	2,491,028	11.5
2008	159,235	102,264	40,788	302,288	2,791,334	2,640,490	11.4
2009	168,668	108,323	43,205	320,196	2,722,357	2,798,919	11.4
2010	176,655	113,458	45,254	335,367	2,632,003	2,966,855	11.3
2011	187,255	120,265	47,969	355,489	2,513,394	3,144,866	11.3
2012	198,490	127,481	50,847	376,818	2,362,782	3,333,558	11.3
2013	210,399	135,130	53,898	399,427	2,176,005	3,533,571	11.3
2014	223,023	143,238	57,132	423,393	1,948,453	3,745,585	11.3
2015	236,405	151,832	60,560	448,796	1,675,017	3,970,321	11.3
2016	250,589	160,942	64,193	475,724	1,350,044	4,208,540	11.3
2017	265,624	170,599	68,045	504,268	967,281	4,461,052	11.3
2018	281,562	180,834	72,128	534,524	519,812	4,728,715	11.3
2019	298,455	191,685	76,455	566,595	0	5,012,438	11.3

1/ Numbers may not add due to rounding.

The table shows the annual and accumulated "deficit" between the funding policies of the City and those under GAAP (Columns (6) and (7), respectively). It is important to note that because the funding policies of the City result in the complete amortization of the unfunded actuarial accrued liability, the accumulated deficit between the City's funding policy and GAAP decreases to 0 at the end of the last 40-year GAAP amortization period.

TABLE 6 (CONTINUED)

COMPARISON OF OFFICIAL UNFUNDED ACCRUED LIABILITY FUNDING
WITH FUNDING UNDER THE PROVISIONS OF APB NO. 8 1/
(\$000 Omitted)

FISCAL YEAR ENDING JUNE 30	SCHEDULE OF ANNUAL PAYMENTS TO FUND THE ANTICIPATED JULY 1, 1987 UNFUNDED ACCRUED LIABILITY				REFLECTION OF COMPARISON BETWEEN OFFICIAL SCHEDULE AND 40-YEAR AMORTIZATION UNDER GEN- ERALLY ACCEPTED ACCOUNTING PRINCIPLES (GAAP)		
	(1) ANNUAL PAYMENT (MADE AT END OF YEAR) TOWARD: MUNICIPAL UNFUNDED ACCRUED LIABILITY	(2) POLICE UNFUNDED ACCRUED LIABILITY	(3) FIRE UNFUNDED ACCRUED LIABILITY	(4) TOTAL (1)+(2)+(3)	(5) GAAP 40-YEAR AMORTIZATION (PER APB NO.8)	(6) GAAP "DEFICIT" (5)-(4)	(7) ACCUMULATED "DEFICIT" (7) (1.09)+(6) -1
2012	\$198,490	\$127,481	\$ 50,847	\$376,818	\$129,411	\$(247,408)	\$1,594,383
2013	210,399	135,130	53,898	399,427	129,411	(270,017)	1,467,861
2014	223,023	143,238	57,132	423,393	129,411	(293,982)	1,305,986
2015	236,405	151,832	60,560	448,796	129,411	(319,386)	1,104,139
2016	250,589	160,942	64,193	475,724	129,411	(346,314)	857,198
2017	265,624	170,599	68,045	504,268	129,411	(374,857)	559,488
2018	281,562	180,834	72,128	534,524	129,411	(405,113)	204,729
2019	298,455	191,685	76,455	566,595	129,411	(437,185)	(214,030)
2020	0	0	0	0	129,411	129,411	(103,882)
2021	0	0	0	0	129,411	129,411	16,179
2022	0	0	0	0	(6,796)	(6,796)	10,840
2023	0	0	0	0	(6,796)	(6,796)	5,020
2024	0	0	0	0	(1,459)	(1,459)	4,012
2025	0	0	0	0	(1,459)	(1,459)	2,914
2026	0	0	0	0	3,704	3,704	6,880
2027	0	0	0	0	(7,498)	(7,498)	0

1/ Numbers may not add due to rounding.

TABLE 7

ESTIMATED PROGRESS OF CITY OF PHILADELPHIA MUNICIPAL RETIREMENT
SYSTEM FUND FOR THE PERIOD JULY 1, 1986 THROUGH JUNE 30, 2006 1/
(\$000 Omitted)

FISCAL YEAR ENDING JUNE 30	FUND AT BEGINNING OF YEAR	CITY CONTRIBUTIONS 2/	EMPLOYEE CONTRIBUTIONS 2/	BENEFIT PAYMENTS 2/	INVESTMENT INCOME	NET INCREASE	FUND AT END OF YEAR
1987	\$1,289,537	\$156,693	\$ 34,754	\$184,018	\$109,341	\$116,771	\$1,406,307
1988	1,406,307	154,565	36,839	193,912	119,499	116,992	1,523,299
1989	1,523,299	164,111	39,050	205,243	129,618	127,535	1,650,834
1990	1,650,834	174,230	41,393	217,125	140,667	139,165	1,789,999
1991	1,789,999	184,955	43,876	230,152	152,717	151,397	1,941,395
1992	1,941,395	196,325	46,509	244,032	165,837	164,639	2,106,034
1993	2,106,034	203,342	49,299	259,322	180,092	173,412	2,279,445
1994	2,279,445	216,117	52,257	275,581	195,101	187,894	2,467,339
1995	2,467,339	229,658	55,393	292,691	211,382	203,742	2,671,081
1996	2,671,081	244,011	58,716	310,850	229,051	220,928	2,892,009
1997	2,892,009	259,226	62,239	329,587	248,250	240,128	3,132,138
1998	3,132,138	274,164	65,973	349,175	269,148	260,110	3,392,248
1999	3,392,248	291,259	69,932	369,593	291,818	283,415	3,675,663
2000	3,675,663	309,380	74,128	390,409	316,577	309,675	3,985,338
2001	3,985,338	328,588	78,575	411,246	343,710	339,627	4,324,965
2002	4,324,965	348,949	83,290	432,996	373,510	372,753	4,697,718
2003	4,697,718	385,648	88,287	455,709	406,261	424,487	5,122,205
2004	5,122,205	408,525	93,585	478,922	443,658	466,846	5,589,051
2005	5,589,051	432,775	99,200	501,962	484,890	514,903	6,103,954
2006	6,103,954	458,480	105,152	524,836	530,470	569,265	6,673,220

1/ Numbers may not add due to rounding.

2/ City contributions are assumed to be made at end of year. Employee contributions and benefit payments are assumed to be made mid-year.

<u>Active:</u>	Terminated and left member contributions on deposit Died without a spouse or beneficiary Returned to work Transferred from one division to another
<u>Retired or Disabled:</u>	Died during the period Returned to employment
<u>Terminated Vested:</u>	Retired or died during the period Returned to employment

The "Summary of Annual Payroll and Annual Benefits" provides a breakdown of payroll for active members and benefit payments for non-active members.

As the following tables illustrate, plan membership remained relatively stable during the period. The net change in the number of members and the percentage change is as follows:

	<u>Number of Members</u>	<u>Percentage Increase (Decrease)</u>
Active	-547	-1.7%
Retired	+380	2.9
Surviving Spouses	+125	2.1
Other Beneficiaries	+65	10.3
Disabled	+47	1.1
Terminated Vested	-16	-3.4

A distribution of the active municipal employees by present age and salary, by service as of July 1, 1986 and salary, and by service and age are presented in Tables 9a, b and c. Similar information for active police employees and active fire employees is shown on Tables 10a, b and c and Tables 11a, b and c.

A distribution of terminated vested members by age and monthly pension is shown in Table 12. Tables 13a, b and c present distributions of the municipal division retired and disabled members by number of members, total monthly pensions and the average monthly pension. This information is shown separately for members retiring before and after July 1, 1985. Similarly, Tables 14a, b and c and 15a, b and c show this information for retired and disabled police members and fire members respectively.

TABLE 8A (CONTINUED)
RECONCILIATION OF INCLUDED MEMBERS

	<u>MUNICIPAL</u>	<u>POLICE</u>	<u>FIRE</u>	<u>TOTAL</u>
E. <u>Disabled Members</u>				
1. Disabled as of July 1, 1985	1,936	1,835	445	4,216
2. New Disabilities	+71	+42	+19	+132
3. Net Other Terminations	-47	-26	-12	-85
4. Disabled as of July 1, 1986	<u>1,960</u>	<u>1,851</u>	<u>452</u>	<u>4,263</u>
F. <u>Terminated Vested Members</u>				
1. Terminated Vested as of July 1, 1985	357	93	15	465
2. New Vested Terminations	+25	+4	+1	+30
3. Net Other Terminations	<u>-30</u>	<u>-13</u>	<u>-3</u>	<u>-46</u>
4. Terminated Vested as of July 1, 1986	<u>352</u>	<u>84</u>	<u>13</u>	<u>449</u>

TABLE 9B

MUNICIPAL ANNUAL EARNINGS BY SERVICE GROUPS

SERVICE GROUP	M A L E			F E M A L E			A L L		
	NUMBER OF PEOPLE	TOTAL ANNUAL EARNINGS	AVERAGE ANNUAL EARNINGS	NUMBER OF PEOPLE	TOTAL ANNUAL EARNINGS	AVERAGE ANNUAL EARNINGS	NUMBER OF PEOPLE	TOTAL ANNUAL EARNINGS	AVERAGE ANNUAL EARNINGS
0	834	15434821	18507	649	9953593	15336	1483	25388414	17119
1	714	14382109	20143	605	10924023	18056	1319	25306132	19185
2	973	20866407	21445	658	11878407	18052	1631	32744814	20076
3	601	13712814	22816	434	8570894	19748	1035	22283708	21530
4	768	18679811	24322	465	9525277	20484	1233	28205088	22875
0-4	3890	83075962	21356	2811	50852194	18090	6701	133928156	19986
5-9	2821	68465386	24269	1449	30740180	21214	4270	99205566	23233
10-14	3098	79530842	25671	1341	29637780	22101	4439	109168622	24593
15-19	2125	56342446	26514	1125	24569414	21839	3250	80911860	24896
20-24	1198	33127656	27652	628	14057068	22383	1826	47184724	25840
25-29	814	22685406	27869	422	9289117	22012	1236	31974523	25869
30-34	414	12397101	29944	173	3934809	22744	587	16331910	27822
35-39	51	1524975	29901	21	565390	26923	72	2090365	29032
40+	4	130925	32731	10	265316	26531	14	396241	28302
TOTAL	14415	357280699	24785	7980	163911268	20540	22395	521191967	23272

TABLE 10B
POLICE ANNUAL EARNINGS BY SERVICE GROUPS

SERVICE GROUP	M A L E			F E M A L E			A L L		
	NUMBER OF PEOPLE	TOTAL ANNUAL EARNINGS	AVERAGE ANNUAL EARNINGS	NUMBER OF PEOPLE	TOTAL ANNUAL EARNINGS	AVERAGE ANNUAL EARNINGS	NUMBER OF PEOPLE	TOTAL ANNUAL EARNINGS	AVERAGE ANNUAL EARNINGS
0	84	1842073	21929	51	1098081	21531	135	2940154	21778
1	110	2467983	22436	48	1074165	22378	158	3542148	22418
2	80	1910685	23883	40	954674	23866	120	2865359	23878
3	7	168197	24028	4	95164	23791	11	263361	23941
4	297	7461596	25123	103	2577514	25024	400	10039110	25097
0-4	578	13850534	23962	246	5799598	23575	824	19650132	23847
5-9	925	23640012	25556	168	4261279	25364	1093	27901291	25527
10-14	1111	29142220	26230	102	2695372	26425	1213	31837592	26247
15-19	2010	54216635	26973	25	661894	26475	2035	54878529	26967
20-24	1277	35798637	28033	11	305590	27780	1288	36104227	28031
25-29	299	9127370	30526	2	53070	26535	301	9180440	30499
30-34	86	2589093	30105	0	0	0	86	2589093	30105
35-39	19	694459	36550	0	0	0	19	694459	36550
40+	1	26785	26785	0	0	0	1	26785	26785
TOTAL	6306	169085745	26813	554	13776803	24867	6860	182862548	26656

TABLE 11A
FIRE ANNUAL EARNINGS BY AGE GROUPS

AGE GROUP	M A L E			F E M A L E			A L L		
	NUMBER OF PEOPLE	TOTAL ANNUAL EARNINGS	AVERAGE ANNUAL EARNINGS	NUMBER OF PEOPLE	TOTAL ANNUAL EARNINGS	AVERAGE ANNUAL EARNINGS	NUMBER OF PEOPLE	TOTAL ANNUAL EARNINGS	AVERAGE ANNUAL EARNINGS
0-19	0	0	0	0	0	0	0	0	0
20-24	18	396918	22051	0	0	0	18	396918	22051
25-29	133	3048121	22918	1	23468	23468	134	3071589	22922
30-34	429	10806294	25189	2	43062	21531	431	10849356	25172
35-39	857	22705152	26493	0	0	0	857	22705152	26493
40-44	677	18660254	27563	0	0	0	677	18660254	27563
45-49	393	11003332	27998	0	0	0	393	11003332	27998
50-54	140	4065098	29036	0	0	0	140	4065098	29036
55-59	51	1492498	29264	0	0	0	51	1492498	29264
60-64	10	293560	29356	0	0	0	10	293560	29356
65-69	4	122112	30528	0	0	0	4	122112	30528
70-74	0	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0	0
TOTAL	2712	72593339	26767	3	66530	22176	2715	72659869	26762

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& JIGGINS**

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TABLE 13A

NUMBER OF DISABLED AND RETIRED MUNICIPAL MEMBERS AS OF JULY 1, 1986

ATTAINED AGE	NUMBER OF LIVES								
	DISABLED			RETIRED			TOTAL		
	PRIOR	NEW	TOTAL	PRIOR	NEW	TOTAL	PRIOR	NEW	TOTAL
UNDER 45	81	18	99	385	27	412	466	45	511
45-49	104	14	118	125	14	139	229	28	257
50-54	243	25	268	180	22	202	423	47	470
55-59	398	9	407	947	286	1233	1345	295	1640
60-64	465	5	470	1945	208	2153	2410	213	2623
65-69	330	0	330	2563	146	2709	2893	146	3039
70-74	162	0	162	2198	53	2251	2360	53	2413
75-79	68	0	68	1783	29	1812	1851	29	1880
80-84	23	0	23	1050	17	1067	1073	17	1090
OVER 84	15	0	15	706	2	708	721	2	723
TOTAL	1889	71	1960	11882	804	12686	13771	875	14646

NOTE - 'PRIOR' INDICATES LIVES WHOSE BENEFIT PAYMENTS COMMENCED MORE THAN ONE YEAR BEFORE THE VALUATION DATE,
 'NEW' INDICATES LIVES WHOSE BENEFIT PAYMENTS COMMENCED IN THE YEAR PRECEDING THE VALUATION DATE.

TABLE 13C

AVERAGE MONTHLY PENSION OF DISABLED AND RETIRED MUNICIPAL MEMBERS AS OF JULY 1, 1986

ATTAINED AGE	-----AVERAGE MONTHLY PENSION AMOUNTS-----								
	-----DISABLED-----			-----RETIRED-----			-----TOTAL-----		
	PRIOR	NEW	TOTAL	PRIOR	NEW	TOTAL	PRIOR	NEW	TOTAL
UNDER 45	593.91	589.61	593.12	204.42	423.26	218.77	272.12	489.80	291.29
45-49	613.69	812.09	637.23	335.52	607.15	362.88	461.85	709.62	488.85
50-54	646.87	888.95	669.45	372.53	389.39	374.37	530.13	655.12	542.63
55-59	690.78	1186.37	701.74	790.25	1054.50	851.55	760.82	1058.52	814.37
60-64	621.81	1010.34	625.95	697.08	874.13	714.18	682.56	877.33	698.37
65-69	573.57	0.00	573.57	554.47	655.86	559.93	556.65	655.86	561.41
70-74	543.07	0.00	543.07	419.03	316.44	416.61	427.54	316.44	425.10
75-79	522.34	0.00	522.34	344.49	241.25	342.83	351.02	241.25	349.33
80-84	394.83	0.00	394.83	303.62	189.38	301.80	305.58	189.38	303.76
OVER 84	349.27	0.00	349.27	233.10	1412.16	236.43	235.52	1412.16	238.78
TOTAL	614.24	844.16	622.56	482.38	792.87	502.06	500.46	797.03	518.18

TABLE 148

TOTAL MONTHLY PENSIONS OF DISABLED AND RETIRED POLICE MEMBERS AS OF JULY 1, 1986

ATTAINED AGE	TOTAL MONTHLY PENSION AMOUNTS								
	DISABLED			RETIRED			TOTAL		
	PRIOR	NEW	TOTAL	PRIOR	NEW	TOTAL	PRIOR	NEW	TOTAL
UNDER 45	252072.44	36604.21	288676.65	65019.06	10929.07	75948.13	317091.50	47533.28	364624.78
45-49	188306.07	5250.81	193556.88	313038.38	178503.16	491541.54	501344.45	183753.97	685098.42
50-54	228985.82	6401.98	235387.80	608920.19	119841.27	728761.46	837906.01	126243.25	964149.26
55-59	290010.38	1778.12	291788.50	773380.00	88408.50	861788.50	1063390.38	90186.62	1153577.00
60-64	195959.28	1560.72	197520.00	459243.04	20851.13	480094.17	655202.32	22411.85	677614.17
65-69	95095.79	0.00	95095.79	279821.85	9019.96	288841.81	374917.64	9019.96	383937.60
70-74	60484.76	0.00	60484.76	259769.14	5622.38	265391.52	320253.90	5622.38	325876.28
75-79	19446.23	0.00	19446.23	155168.02	1375.00	156543.02	174614.25	1375.00	175989.25
80-84	13750.00	0.00	13750.00	145599.19	1375.00	146974.19	159349.19	1375.00	160724.19
OVER 84	3300.00	0.00	3300.00	82614.81	1100.00	83714.81	85914.81	1100.00	87014.81
TOTAL	1347410.77	51595.84	1399006.61	3142573.68	437025.47	3579599.15	4489984.45	488621.31	4978605.76

JOHNSON
ALLIGINS

TABLE 15A

NUMBER OF DISABLED AND RETIRED FIRE MEMBERS AS OF JULY 1, 1986

ATTAINED AGE	NUMBER OF LIVES-----								
	-----DISABLED-----			-----RETIRED-----			-----TOTAL-----		
	PRIOR	NEW	TOTAL	PRIOR	NEW	TOTAL	PRIOR	NEW	TOTAL
UNDER 45	52	11	63	42	6	48	94	17	111
45-49	46	3	49	63	20	83	109	23	132
50-54	36	4	40	132	16	148	168	20	188
55-59	50	1	51	180	10	190	230	11	241
60-64	99	0	99	345	8	353	444	8	452
65-69	75	0	75	468	15	483	543	15	558
70-74	41	0	41	490	14	504	531	14	545
75-79	30	0	30	328	5	333	358	5	363
80-84	4	0	4	131	2	133	135	2	137
OVER 84	0	0	0	96	2	98	96	2	98
TOTAL	433	19	452	2275	98	2373	2708	117	2825

TABLE 15C

AVERAGE MONTHLY PENSION OF DISABLED AND RETIRED FIRE MEMBERS AS OF JULY 1, 1986

ATTAINED AGE	AVERAGE MONTHLY PENSION AMOUNTS								
	DISABLED			RETIRED			TOTAL		
	PRIOR	NEW	TOTAL	PRIOR	NEW	TOTAL	PRIOR	NEW	TOTAL
UNDER 45	879.48	1110.30	919.79	400.26	584.60	423.31	665.36	924.76	705.09
45-49	936.99	1360.14	962.89	1089.35	1330.34	1147.42	1025.05	1334.23	1078.92
50-54	1053.49	1588.19	1106.96	1049.66	1163.18	1061.93	1050.48	1248.18	1071.51
55-59	819.00	1890.56	840.01	983.35	1228.70	996.26	947.62	1288.87	963.20
60-64	810.31	0.00	810.31	931.93	1101.11	935.76	904.81	1101.11	908.29
65-69	773.68	0.00	773.68	701.86	648.61	700.21	711.78	648.61	710.08
70-74	700.48	0.00	700.48	536.89	295.91	530.19	549.52	295.91	543.00
75-79	617.42	0.00	617.42	465.48	275.00	462.62	478.21	275.00	475.41
80-84	550.00	0.00	550.00	321.47	275.00	320.78	328.25	275.00	327.47
OVER 84	0.00	0.00	0.00	270.20	275.00	270.30	270.20	275.00	270.30
TOTAL	820.78	1291.42	840.57	674.63	879.27	683.08	698.00	946.20	708.28

	Fiscal Year Ending	
	<u>June 30, 1985</u>	<u>June 30, 1986</u>
Cost Value	8.9%	10.0%
Market Value	16.1%	23.1%

Table 20 shows the derivation of adjusted market value of assets used in the cost calculations. All assets other than equities are valued at market. Equity securities are valued as the product of (i) the 3-year average of the ratio of market value to book value (but not before July 1, 1984) and (ii) the cost value of the equity securities as of the valuation date. Also shown on the table is the approximate rate of return on an adjusted market value basis of 18.6% (as compared to the prior year of 14.4%).

Table 21 shows the allocation of the assets used for valuation purposes as of July 1, 1986 between the municipal, police and fire divisions. As required under Act 205, experience gains and losses and changes in the unfunded actuarial accrued liability due to plan amendments and/or changes in actuarial assumptions must be reported separately for each of the participating divisions. This requires, for valuation purposes only, that assets be allocated between the divisions. It should be noted that this allocation does not constitute a legal separation of the assets.

The starting point of the table is valuation assets as of July 1, 1985. These assets were allocated based on the actuarial accrued liability as of that date. The non-investment transactions (item 2 of the table), other than administrative expenses attributable to each division, was provided by the Finance Department of the City of Philadelphia. Administrative expenses were allocated based on the member count of each division as of the beginning of the fiscal year. Investment income (net of investment expenses) were allocated in proportion to the mean fund balance as of the valuation date prior to recognition of fund earnings.

TABLE 17

STATEMENT OF RECEIPTS AND DISBURSEMENTS

	<u>COST VALUE</u>	<u>MARKET VALUE</u>
<u>Balance as of July 1, 1985:</u>	\$1,110,974,702	\$1,091,381,702
<u>Receipts:</u>		
Contributions		
Commonwealth of Pennsylvania	\$ 15,564,847	\$ 15,564,847
City of Philadelphia	133,623,445	133,623,445
Employees	37,316,279	37,316,279
Quasi-Public Agencies	2,943,150	2,943,150
Interest and Dividends	87,018,205	87,018,205
Gain from Sale of Investments	27,484,439	27,484,439
Miscellaneous Operating Revenues	<u>1,004,998</u>	<u>1,004,998</u>
Total Receipts	\$ 304,955,363	\$ 304,955,363
<u>Disbursements:</u>		
Withdrawals	\$ 3,691,274	\$ 3,691,274
Benefit Payments	172,678,440	172,678,440
Administrative Expenses	2,109,037	2,109,037
Investment Manager Fees	<u>3,019,198</u>	<u>3,019,198</u>
Total Disbursements	\$ 181,497,949	\$ 181,497,949
<u>Change in Unrealized Appreciation/ Depreciation:</u>	\$ --	\$ 141,853,507
<u>Balance as of July 1, 1986:</u>	\$1,234,432,116	\$1,356,692,623
<u>Approximate Return on Investments During Year:</u>	10.0%	23.1%

TABLE 19
STATEMENT OF ADMINISTRATIVE EXPENSES
FOR YEAR ENDING JUNE 30, 1986

Personal Services	\$ 846,188
Purchase of Services	738,671
Materials and Supplies	60,012
Employer's Share of Fringe Benefits	<u>464,166</u>
Total	\$2,109,037

TABLE 21

ALLOCATION OF ASSETS FOR VALUATION PURPOSES BETWEEN
DIVISIONS AS OF JUNE 30, 1986
(\$000 Omitted) 1/

	<u>MUNICIPAL</u>	<u>POLICE</u>	<u>FIRE</u>	<u>TOTAL</u>
1. Assets for Valuation Purposes as of June 30, 1985	\$568,069	\$363,387	\$144,703	\$1,076,159
2. Transactions During Period July 1, 1985 - June 30, 1986:				
a. Contributions				
(i) Commonwealth	\$ 8,467	\$ 5,102	\$ 1,996	\$ 15,565
(ii) City	72,134	43,850	17,639	133,623
(iii) Employees	21,293	11,549	4,474	37,316
(iv) Quasi-Public Agencies	2,943	0	0	2,943
b. Refund of Uncancelled Checks	947	9	47	1,004
c. Pension Benefits	90,385	58,353	23,940	172,678
d. Withdrawals	2,928	708	55	3,691
e. Administrative Expenses 2/	<u>1,387</u>	<u>517</u>	<u>205</u>	<u>2,109</u>
f. Net Transactions: (a) + (b) - (c) - (d) - (e)	\$ 11,085	\$ 932	\$ -44	\$ 11,973
3. Mean Fund Balance Prior to Allocation of Realized and Unrealized Income: (1) + 1/2 x (2f)	\$573,612	\$363,853	\$144,680	\$1,082,146
4. Realized and Unrealized Income for Period July 1, 1985 - June 30, 1986 (Allocated in Proportion to (3))	\$106,758	\$ 67,719	\$ 26,927	\$ 201,405
5. Assets for Valuation Purposes as of June 30, 1986: (1) + (2) + (4)	\$685,913	\$432,038	\$ 171,586	\$1,289,537

1/ Numbers may not add due to rounding.

2/ Allocated in proportion to the number of active and non-active members in each division as of July 1, 1985.

Municipal (Plan J)Uniformed (Plans D and X)

(b) for members who hold an elected office, exempt position or other positions not represented by a union, the arithmetic average of the total compensation received during the three calendar or anniversary years which produces the highest average.

(c) the arithmetic average of the total compensation received during the five calendar years of employment which produces the highest average.

6. Employee Contributions:

Each employee who participates in the Social Security System, contributes 3-3/4% of his total compensation up to the taxable wage base (\$39,600 in 1985 and \$42,000 in 1986) and 6% of his total compensation above the taxable wage base to the Retirement System.

Same as municipal

Each employee who does not participate in the Social Security System contributes 6% of his total compensation to the Retirement System.

7. Service Retirement:

a. Eligibility:

Each municipal employee is eligible to retire and receive a service pension upon the attainment of age 55.

Each uniformed employee is eligible to retire and receive a service pension upon the attainment of age 45.

b. Benefit Amount:

The service pension equals the sum of:

2-1/2% of the employee's average final compensation multiplied by his years of credited service to a maximum of 20 years;

plus

2% of the employee's average final compensation multiplied by his years of credited service in excess of 20;

such sum limited to 80% of the employee's average final compensation.

The service pension equals 2-1/2% of the employee's average final compensation multiplied by his years of credited service, subject to a maximum of 100% of average final compensation.

8. Deferred Vested Retirement:

a. Eligibility:

A terminating employee who has completed 10 or more years of credited service is eligible for a deferred vested retirement benefit.

Same as municipal

Municipal (Plan J)

If there is no spouse, or if the spouse dies or remarries, each dependent child (up to three children) is eligible for a yearly payment of 25% of final compensation until the child reaches age 18. If there is no spouse or dependent children, each dependent parent is entitled to a yearly payment of 15% of final compensation for the remainder of his lifetime.

Uniformed (Plans D and X)

11. Ordinary Death:

a. Eligibility:

The beneficiary of an active employee (or a terminated vested employee who did not withdraw his employee contributions) who dies after completion of 10 years of credited service or who has attained age 55 is eligible for an immediate death benefit equal to an annual pension or a lump sum payment, whichever the beneficiary chooses.

The beneficiary of an active employee who dies before completion of 10 years of credited service and attainment of age 55 is eligible for a lump sum payment.

The beneficiary may be any relative by blood or marriage.

b. Annual Pension:

The annual ordinary death pension, payable for life, is equal to the regular service pension the employee would have received had he been eligible to retire on the day before he died and had elected option 2, joint and 100% contingent annuitant (see item 14 below).

c. Lump Sum Payment:

The lump sum payment is equal to:

10% of the deceased employee's average final compensation multiplied by his years of credited service to a maximum of 10; plus

the deceased employee's contributions to the Retirement System; minus

the total amount of the deceased employee's life insurance which was paid for by the City.

The beneficiary of any employee who dies while actively employed (or a terminated vested employee who did not withdraw his employee contributions) is eligible for a death benefit equal to an annual pension or a lump sum payment, whichever the beneficiary chooses.

The beneficiary may be any relative by blood or marriage.

The annual ordinary death pension, payable for life, is equal to the regular service pension the employee would have received (based upon a minimum of 10 years of service) had he been eligible to retire on the day before he died and had elected option 2, joint and 100% contingent annuitant (see item 14 below).

Same as municipal

Municipal (Plan J)

Uniformed (Plans D and X)

b. Benefit Amount:

The annual ordinary disability benefit is equal to the benefit determined under the service pension formula using average final compensation and credited service as of the date of disablement.

Same as municipal, except that each eligible employee is automatically credited with a minimum of 10 years of service for purposes of calculating the annual benefit.

14. Survivor Benefits:

Service pensions, deferred vested benefits, service-connected disability benefits (if employee contributions are left on deposit), and ordinary disability benefits are payable under 4 optional forms. Options 1, 2, and 3 provide benefits actuarially equivalent to a lifetime only pension while option 4 has no reduction.

Same as municipal

Option 1 provides that a reduced benefit is payable to the employee with the provision that upon his death, the beneficiary will receive a lump sum equal to the excess, if any, of the employee's contributions over the sum of the payments received.

Option 2 provides a reduced benefit payable to the employee with the provision that 100% of the reduced benefit will continue to be paid to the designated beneficiary for life after the death of the employee.

Option 3 is the same as option 2 except that only 50% of the reduced benefit is continued to the designated beneficiary.

Option 4 provides that upon the employee's death, 50% of the benefit will continue to be paid to the surviving spouse for the remainder of her lifetime, provided that the employee and his spouse were married for 2 years prior to retirement. If there is no eligible spouse at the time the employee dies, or the spouse dies before the full amount of the contributions have been returned, 50% of the benefit is continued to dependent children until age 18, or if no dependent children, payments are given to dependent parents for the remainder of their lives. In addition, option 4 provides for a guaranteed return of employee contributions as described in option 1 above.

PART VI

ACTUARIAL COST METHOD, FACTORS AND ASSUMPTIONS USED IN COST DETERMINATIONS

The actuarial cost method, factors and assumptions used in determining cost estimates are presented below.

1. Member Data: The member data used in the determination of cost estimates consists of pertinent information with respect to the active, retired, disabled and deferred vested municipal and uniformed members of the City of Philadelphia Municipal Retirement System as supplied by the Philadelphia Board of Pensions and Retirement to the actuary.
2. Valuation Date: July 1, 1986.
3. Actuarial Cost Method: The costs of the System have been determined in accordance with the individual entry age actuarial cost method. The Bogen unfunded actuarial accrued liability is amortized in level dollar payments over 20 years ending June 30, 1992 and the Dombrowski unfunded ~~actuarial accrued liability is amortized in level dollar payments over~~ 40 years ending June 30, 2009 as ordered by the Court of Common Pleas of Philadelphia County. The remaining unfunded actuarial accrued liability as of July 1, 1985 is amortized over 40 years ending June 30, 2019 with payments increasing 6.0% per annum. Changes in the actuarial accrued liability realized after July 1, 1985 are amortized in level dollar payments as follows:
 - a. Changes in actuarial assumptions: 20 years
 - b. Experience gains and losses: 15 years
 - c. Benefit modifications applicable to active members: 20 years
 - d. Benefit modifications applicable to non-active members: 10 years

In addition, it is assumed that 90% of all disabilities among municipal members are ordinary (10% are service-connected) and that 80% of all disabilities among uniformed members are ordinary (20% are service-connected).

6. Annual Rate of Mortality Prior to Retirement: It is assumed that deaths among active municipal male members may be represented by 55% of the UP-84 Mortality Table with ages set forward one year. Deaths among municipal female members are assumed to be represented by 50% of the UP-84 Mortality Table with ages set back four years. In addition, it is assumed that 95% of all deaths among active municipal members are ordinary (5% are service-connected).

It is assumed that deaths among active uniformed members may be represented by 55% of the UP-84 Mortality Table with ages set forward one year. In addition, it is assumed that 90% of all deaths among active uniformed members are ordinary (10% are service-connected).

7. Service Retirement: It is assumed that active members will retire in accordance with the following rates:

<u>Attained Age</u>	<u>Municipal Unisex</u>	<u>Uniformed Unisex</u>
45	--	.150
46	--	.090
47	--	.100
48	--	.105
49	--	.115
50	--	.120
51	--	.125
52	--	.145
53	--	.150
54	--	.170

(Illustration continued on following page)

<u>Attained Age</u>	<u>Adjustment Factor</u>		<u>Attained Age</u>	<u>Adjustment Factor</u>	
	<u>Male</u>	<u>Female</u>		<u>Male</u>	<u>Female</u>
52	3.19	4.07	67	1.32	1.68
53	2.86	3.66	68	1.30	1.66
54	2.59	3.31	69	1.30	1.66
55	2.38	3.04	70	1.24	1.59
56	2.16	2.76	71	1.19	1.52
57	1.94	2.48	72	1.19	1.52
58	1.84	2.35	73	1.13	1.45
59	1.73	2.21	74	1.10	1.41
60	1.67	2.14	75 & Later	1.08	1.38
61	1.62	2.07			

9. Salary Scale: It is assumed that salaries, including longevity and overtime, will increase at a compound annual rate of 6.0% per annum.
10. Rate of Investment Return: It is assumed that the assets of the fund will accumulate at a compound annual rate of 9% per annum, net of the annual expenses incurred in the investment of the fund's assets by the equity and debt money managers contracted by the Board of Pensions and Retirement.
11. Expenses: The administrative expenses of servicing the Retirement System are estimated based upon the estimated operating budget of the Board of Pensions and Retirement for fiscal year 1987 excluding the costs of the money managers contracted to invest the fund's assets.
12. Value of Investments: Assets held by the fund exclusive of equity securities are valued at market value as reported by the City. Equity securities are determined based on the product of (i) the average of the ratio of the market value of the equity securities to their cost value as of the valuation date and the two immediately preceding July 1 dates (but not prior to July 1, 1984) and (ii) the corresponding cost value of the equity securities as of the valuation date.

PART VII

STATEMENT OF ACTUARIAL PRESENT VALUE OF ACCRUED BENEFITS

The actuarial present value of accrued benefits was calculated, and is being presented in this report, in accordance with the professional requirements of the American Academy of Actuaries.

A. Present Value of Accrued Benefits

It has been determined that the present value of accrued vested benefits and the present value of all accrued benefits earned as of the valuation date are as follows (\$000 omitted):

	<u>July 1, 1985</u>	<u>July 1, 1986</u>	
		<u>Before Changes</u>	<u>After Changes</u>
1. Vested Accrued Benefits			
a. Retired Members	\$1,031,974	\$1,117,378	\$1,144,506
b. Disabled Members	286,928	299,107	305,187
c. Deferred Vested Members	18,214	18,588	18,588
d. Nonvested Members'			
Contributions	1,045	981	981
e. Active Members	842,758	846,610	850,723
f. Subtotal	<u>\$2,180,919</u>	<u>\$2,282,664</u>	<u>\$2,319,985</u>
2. Nonvested Accrued Benefits	<u>140,950</u>	<u>138,399</u>	<u>138,399</u>
3. Total Present Value of Accrued Benefits	<u>\$2,321,869</u>	<u>\$2,421,063</u>	<u>\$2,458,384</u>

B. Notes

1. The market value of assets corresponding to the total actuarial present value of accrued benefits was \$1,091,382,000 as of July 1, 1985 and \$1,356,693,000 as of July 1, 1986.

the estimated average compensation during the three years (last year for uniformed members) ending on the valuation date. Benefits payable under all circumstances, i.e., retirement, death, disability and termination of employment, are included to the extent that they are deemed to have accrued as of the valuation date.

The values shown above in the column entitled "After Changes" include the plan changes as described in Part I of this report.

5. The present values were determined by the actuary on the basis of employee data supplied by the Board of Pensions and Retirement, the provisions of the plan as described in Part V, and actuarial assumptions as described in Part VI. The value of assets was determined based upon information supplied by the City.
6. There have been no changes in actuarial assumptions since the prior valuation.

C. Actuary's Opinion

This Statement to the best of our knowledge fairly reflects the present value of accrued benefits of the City of Philadelphia Municipal Retirement System as of July 1, 1986.

In preparing this Statement, we have relied upon information provided to us regarding plan provisions, plan members, plan assets and other matters, as more fully detailed in the notes to the Statement.

The present values shown herein have been estimated on the basis of actuarial assumptions which, in the opinion of the actuary, are appropriate for the purposes of the Statement, are reasonable in the aggregate (taking into account the experience of the plan and reasonable expectations), and,