

C. 3.6  
PFDPF #2

**POLICE AND FIREMEN'S DISABILITY  
AND PENSION FUND OF OHIO**

Actuarial Evaluation to Determine  
the Actuarial Rate Per Cent of  
Contribution as of January 1, 1996

July 18, 1996

July 18, 1996

Board of Trustees  
The Police and Firemen's Disability  
and Pension Fund of Ohio  
230 East Town Street  
Columbus, Ohio 43215

Gentlemen:

We are pleased to submit to you herewith our report presenting the results of the actuarial evaluation to determine the actuarial rate per cent of contribution as of January 1, 1996. This report has been based upon the employee data which were supplied to us by the Executive Director and upon statements showing the assets and liabilities of the Fund as of December 31, 1995.

We would like to call your attention to the following items from the report:

- (1) The 1996 evaluation has been based upon the Fund benefit provisions as in effect on January 1, 1996. Excluded from the results, however, are the 1971 Amended Substitute House Bill No. 284 and the cost of the Death Benefit Fund established by 1976 Amended House Bill No. 1010, since we understand that these benefits are being funded by the State of Ohio. A brief summary of the main benefit specifications of the Fund considered in this evaluation is contained in Table 3.
- (2) The actuarial assumptions, actuarial cost method and asset valuation method are the same as those used in the prior year's evaluation. A summary of these items is set forth in Table 4.
- (3) The basic data used in the evaluation represent all active members, retirants and beneficiary-survivors covered by the Fund as of January 1, 1996. In total, 45,380 members were considered in the evaluation. A distribution of the coverage, by category, membership status and age, is set forth in various Table 2's.



Board of Trustees

July 18, 1996

Page 2

- (4) The highlights of the evaluation results may be found in Table 1. In summary, the total actuarial rate per cent, applicable for the calendar year beginning January 1, 1996, has been developed as follows:

	<u>Police</u>	<u>Fire</u>
Current Rate Per Cent for Disability and Pension Benefits	29.78%	26.57%
Current Rate Per Cent for Health Care Plan and Medicare	6.50	6.50
Total Current Rate Per Cent	36.28%	33.07%

We look forward to discussing this report with the Board of Trustees in the near future.

Sincerely yours,

Wayne E. Dydo  
Fellow-Society of Actuaries

WED:lml

POLICE AND FIREMEN'S DISABILITY AND PENSION FUND OF OHIO

Actuarial Evaluation to Determine the Actuarial Rate Per Cent

of Contribution as of January 1, 1996

TABLE OF CONTENTS

Text of Report

<u>Section</u>	<u>Contents</u>	<u>Page</u>
A	PURPOSE	1
B	BASIC DATA	2
C	PLAN PROVISIONS	4
D	VALUATION ASSETS AND ACTUARIAL ASSUMPTIONS	4
E	EVALUATION RESULTS	7
F	COMPARISON OF EVALUATION RESULTS WITH PREVIOUS YEAR	9
G	HEALTH CARE FUNDING	10
H	ADEQUACY OF STATUTORY RATES	12

Tables of Report

<u>Table</u>	<u>Contents</u>	
1	Summary of Evaluation Results as of January 1, 1996	15
2(a) Police	Distribution of Members by Attained Age Group and Length of Service as of January 1, 1996	17
2(a) Police	Distribution of Retirants by Attained Age Group and Sex as of January 1, 1996	18
2(a) Police	Distribution of Beneficiary-Survivors by Attained Age Group as of January 1, 1996	19
2(b) Firemen	Distribution of Members by Attained Age Group and Length of Service as of January 1, 1996	20
2(b) Firemen	Distribution of Retirants by Attained Age Group and Sex as of January 1, 1996	21
2(b) Firemen	Distribution of Beneficiary-Survivors by Attained Age Group as of January 1, 1996	22



---

Tables of Report

<u>Table</u>	<u>Contents</u>	<u>Page</u>
3	Description of Benefits Under Statewide Plan	23
4	Summary of Actuarial Assumptions and Actuarial Cost Method	28
5	Comparison of Evaluation Results for 1995 and 1996	35
6	Asset Allocation for 1996	36



## POLICE AND FIREMEN'S DISABILITY AND PENSION FUND OF OHIO

### Actuarial Evaluation to Determine the Actuarial Rate Per Cent of Contribution as of January 1, 1996

#### A. PURPOSE

The Board of Trustees of the Police and Firemen's Disability and Pension Fund of Ohio has retained The Wyatt Company, as Actuary to the Fund, to perform the necessary actuarial evaluations required pursuant to the terms of the 1965 Amended House Bill No. 642. This report sets forth the results of our evaluation to determine the actuarial rate per cent for the year beginning January 1, 1996.

Section 742.14 of House Bill No. 642 provided for the initial determination of the appropriate current rate per cent, to be used as of January 1, 1967. The aforementioned section, as amended in 1986 by Amended Substitute House Bill No. 721, furthermore, provides as follows:

"The Board shall annually thereafter have prepared by a competent Actuary familiar with retirement systems, a report showing the adequacy of the rate of the Policemen Employers' Contribution provided for by Section 742.33 of the Revised Code, and the adequacy of the rate of the Firemen Employers' Contribution provided for by Section 742.34 of the Revised Code."

In addition, House Bill No. 721 added Section 742.311 which reads as follows:

"The Ohio Retirement Study Commission shall annually review the adequacy of the contribution rates provided under Sections 742.31, 742.33, and 742.34 of the Revised Code and the contribution rates recommended by the Actuary of the Police and Firemen's Disability and Pension Fund for the forthcoming year. The Ohio Retirement Study Commission shall make recommendations to the General Assembly which it finds necessary for the proper financing of the Police and Firemen's Disability and Pension Fund."

Pursuant to these two Sections, we have performed an actuarial evaluation based upon the January 1, 1996 membership data and upon the Annual Report and audited financial statements for the fiscal year ending December 31, 1995. The highlights of the evaluation are set forth in Table 1 at the end of this report, and are discussed in a subsequent section of this report.



## B. BASIC DATA

The evaluation is based upon the data that were prepared and submitted to us under the direction of Mr. Henry E. Helling, III, Executive Director of the Fund. This information represented a complete census of members as of the valuation date and showed a total count of 45,380 members. A summary of the data is as follows:

	<u>Police</u>	<u>Firemen</u>	<u>Total</u>
Actives	14,558	10,728	25,286
Retirants	7,791	6,423	14,214
Beneficiary-Survivors	<u>3,337</u>	<u>2,543</u>	<u>5,880</u>
Total	<u>25,686</u>	<u>19,694</u>	<u>45,380</u>

The total membership count of 45,380 compares to a membership of 44,015 individuals as of January 1, 1995, an increase of about 3.1%.

A compilation of the membership data, as of January 1, 1996, is contained in Tables 2(a) and 2(b) for police and firemen, respectively. The first page of each table shows a distribution of active members by attained age group and length of service as of the evaluation date. Also shown are the average attained age and average hire age, which are 38.4 and 26.6, respectively, for police, and are 38.9 and 26.8 for firemen; these measurements differ marginally from last year. Also shown are the average annual salaries for each age group, and in total, as of the two valuation dates. For police, the total averages are \$41,017 based on the 1996 data, and \$39,951, based on the 1995 data, for an increase of 2.7%; for firemen, the corresponding amounts are \$41,528, \$40,143 and 3.5%, respectively. The present value of future compensation, shown in Table 1, Item C.4, is based on the Table 2 salaries increased by the age-graded salary scale for one year.

The second pages of Tables 2(a) and 2(b) set forth the distribution of retirants by attained age group and sex as of January 1, 1996. Also shown are the annual rate of pension, average attained age, and average annual pension payable to retirants. The prior year's corresponding information is also shown. The average attained age of retirants is 61.4 years for



police and 64.1 years for firemen, slightly lower than last year. This year we find that the average annual benefit to retirants, without considering the benefit increase (up to \$50 a month) effective January 1, 1972 provided by the 1971 House Bill No. 284, is \$21,244 for police and \$21,211 for firemen. The corresponding averages last year were, respectively, \$20,300 and \$20,300. The total annual rate of pension for retired police as of January 1, 1996 of \$165,508,976 represents a 10.2% increase over the rate of payout one year ago; similarly, the total annual rate of pension for retired firemen as of January 1, 1996 of \$136,235,424 represents a 7.8% increase over the rate of payout one year earlier.

The third pages of Tables 2(a) and 2(b) show the distribution of beneficiary-survivors by attained age group, as of the evaluation date. The average attained ages for surviving spouses are 71.7 for police and 73.4 for firemen, compared to 71.4 and 73.3 one year ago. In addition, there were 366 police beneficiaries and 274 firemen beneficiaries receiving optional benefit payments, compared to 341 police and 257 firemen beneficiaries one year ago. These tables also show that there are 315 dependent children of police and 166 dependent children of firemen receiving benefits as of the evaluation date.

Presented below is a reconciliation of the number of retirees and beneficiaries included in our January 1, 1995 and 1996 evaluations.

	Number at 1/1/95	Additions During Year	Deletions During Year	Number at 1/1/96
<b>Police</b>				
Retirants & Beneficiaries	10,686	810	368	11,128
Deferred Vested	<u>61</u>	<u>11</u>	<u>23</u>	<u>49</u>
Total	10,747	821	391	11,177
<b>Fire</b>				
Retirants & Beneficiaries	8,746	578	358	8,966
Deferred Vested	<u>29</u>	<u>2</u>	<u>8</u>	<u>23</u>
Total	8,775	580	366	8,989

The retirees and beneficiaries include children, parents and widows.





### C. PLAN PROVISIONS

The basic provisions of the Police and Firemen's Disability and Pension Fund of Ohio with respect to disability and pension benefits that are used to determine the current rate per cent are summarized in Table 3. That table and the evaluation presented in this report are based upon the provisions of the Statewide Plan, as set forth in Section 742 of the Revised Code, including all amendments in effect as of the valuation date, except for changes that are funded entirely by contributions from the State of Ohio (the 1972 pension increases of 1971 House Bill No. 284, and the Death Benefit Fund established by 1976 House Bill No. 1010). No changes to Plan provisions have been recognized in this report.

### D. VALUATION ASSETS AND ACTUARIAL ASSUMPTIONS

The valuation assets have been based upon the "Comprehensive Annual Financial Report for the Year Ended December 31, 1995" which was furnished to us by the Fund.

The Comprehensive Annual Financial Report indicates that the cost value of assets as of December 31, 1995 was \$5,041,908,684, inclusive of:

1. Cash	\$ 32,910,302
2. Office Property	3,597,209
3. Receivables	150,327,091
4. Other Assets	<u>1,998,445</u>
	\$188,833,047

The book value of the investment portfolio was \$4,853,075,637 which consisted of:

1. Bonds *	\$1,931,932,942
2. Stocks - Book Value *	2,035,502,034
3. Short-Term	342,771,989
4. Venture Capital	13,562,270
5. Real Estate	<u>529,306,402</u>
	\$4,853,075,637
* Market Value of Bonds	\$2,043,022,069
* Market Value of Stocks	\$2,688,991,450



The cost value was offset by payables totaling \$64,861,273 and other liabilities of \$14,413,604. Hence, the net assets available for benefits as of December 31, 1995 was \$4,962,663,807.

For valuation purposes this net cost value is used for the bond, real estate, short-term, and venture capital asset classes. For stocks, the value is determined under the 4-Year Market Adjustment Method. Valuation assets equal the sum of these two components, less \$3,583,647 of contributions that have yet to be refunded to employees who terminated with less than 15 years of service.

This is the fourth valuation for which stocks are being valued under the 4-Year Market Adjustment Method. The method was first used in 1993 with an initial value equal to market value. The 1996 valuation is the third in which a phase-in is used on gains and losses.

The combined realized and unrealized gain/(loss) on stocks for 1993 was a gain of \$125,257,957. The corresponding result for 1994 was a loss of \$(51,841,975); the result for 1995 was a gain of \$604,613,798. These gains/(losses) are phased-in at 25% per year, which means 75% of the 1995 gain, \$453,460,349; 50% of the 1994 loss, \$(25,920,988); and 25% of the 1993 gain, \$31,314,489, are excluded from 1996 valuation assets. The stock portion of valuation assets equals market value of stocks less the excluded gains/(losses). The resulting value is \$2,230,137,600.

After determining total valuation assets, the Health Care Stabilization Fund balance is subtracted to obtain the assets used for the pension and disability rate percents. The Health Care Stabilization Fund was created effective January 1, 1992, with \$150 million allocated for health care expenses - \$81,777,000 for police and \$68,223,000 for firemen. The fund is credited with retiree and beneficiary premiums, a portion of employer contributions equal to 6.5% of payroll, and 8.25% effective annual interest. All medical expense payments, including medicare



premiums, are debited to the fund. The fund value as of December 31, 1995 is \$122,609,800 for police and \$80,857,400 for firemen. After excluding this amount, the resulting valuation assets, rounded to the nearest \$100,000, are \$4,950,200,000.

The allocation of the valuation assets between police and firemen is developed in Table 6. This development is based upon an allocation of the actual change in valuation assets due to investment results in proportion to expected growth based upon the valuation interest rate. This results in valuation assets of \$2,746,000,000 for police and \$2,204,200,000 for firemen.

During 1995, the rate of return on valuation assets was approximately 8.46%. The calculation of this rate of return uses valuation assets under the 4-Year Market Adjustment method at both December 31, 1994 and December 31, 1995. The calculation also involves total assets, prior to the allocation of assets to the Health Care Stabilization Fund. This return compares to the interest rate assumption of 8.25%. Also, as is indicated in Table 6, the expected growth in valuation assets due to investment performance, based on accrual basis contributions, benefit payments, and expenses, is \$394,326,400 (Item (4)) compared to actual growth of \$404,366,500.

The actuarial assumptions and the actuarial cost method used in the instant evaluation are the same as those employed in the prior evaluation. A summary of the assumptions and a description of the actuarial cost method are presented in Table 4.

The increase during the past year in the average annual current salary of active members was, as noted above, 2.7% for police and 3.5% for firemen. These increase percentages compare to an average expected increase of 5.4% based upon the age-graded salary scale assumption.



## E. EVALUATION RESULTS

Table 1 summarizes the January 1, 1996 evaluation results and sets forth the actuarially determined current rate per cent of contribution applicable to the calendar year commencing January 1, 1996. In Section A of Table 1, we indicate the extent of the membership, by police and firemen, for various categories. This section represents a summary compilation of the data breakdown shown in the various Table 2's.

Section B of Table 1 sets forth a summary of the actuarial present values of future benefits, by police and firemen, with respect to active members, retirants, and beneficiary survivors. The total present values are \$4,640,700,000 for police and \$3,604,700,000 for firemen (Item B.4.). Thus, the combined actuarial present value of future benefits (for both police and firemen) approximates \$8.2 billion.

In Section C, we show the development of the current rate per cent for disability and pension benefits, based upon this January 1, 1996 evaluation. This rate includes a loading for administrative expenses, as indicated in the assumptions set forth in Table 4. The rate is determined by subtracting the valuation assets and the employer accrued liability from the actuarial present value of future benefits, and dividing the resulting amount by the actuarial present value of active member future compensation.

The employer accrued liability used in this valuation is \$209,135,978 and represents the outstanding principal as of December 31, 1995 of the original accrued liability under the funding scheme prescribed by the Ohio Revised Code. This amount is set forth in the Comprehensive Annual Financial Report. The allocation of this accrued liability between police and firemen, as developed by Fund office personnel, is \$103,400,000 for police and \$105,700,000 for firemen, rounded to the nearest \$100,000.



Item C.6. of Table 1 shows the current rate per cent for 1996 for the disability and pension benefits (i.e., excluding consideration of health care plan benefits). As indicated in the table, these figures are 29.78% for police and 26.57% for firemen. The current rate per cents include: (1) the 10% contribution for active members; (2) the original State of Ohio appropriation of \$1.2 million per annum; (3) a State of Ohio appropriation of \$1.5 million per annum for Senate Bill No. 48; (4) a State of Ohio appropriation of an additional \$1.2 million per annum to fund for part of the additional cost arising from the "purchase": of military service credit; (5) an appropriation to fund House Bill No. 204; and (6) an appropriation to partially fund House Bill No. 694 and House Bill No. 215. As indicated earlier, these figures do not include the cost of the 1972 pension increases precipitated by House Bill No. 284 or the Death Benefit Fund established by Amended House Bill No. 1010, since these additional costs will be met entirely by additional appropriations from the State of Ohio.

Item D.1. of Table 1 shows the current rate per cent for health care plan and Medicare benefits. In conjunction with the establishment of the Health Care Stabilization Fund effective January 1, 1992, the current rate per cent for health care has been defined by the Board to be 6.50%. Additional discussion of health care funding is provided in Section G of this commentary.

Item D.2. of Table 1 shows the total current rate per cent, and represents a combination of the figures for disability and pension benefits and for health care plan and Medicare benefits. As can be seen, the total current rate per cent with respect to 1996 is 36.28% for police and 33.07% for firemen.



## F. COMPARISON OF EVALUATION RESULTS WITH PREVIOUS YEAR

Table 5 sets forth a comparison of evaluation results for 1995 and 1996. Section A indicates that the number of active members has increased by 486 for police and by 217 for firemen. Also, the number of participants currently receiving benefits has increased by 442 for police and 220 for firemen. As a percentage of total membership, 43.3% of police members are currently receiving benefits, compared to 43.2% last year; the corresponding percentages for firemen are, respectively, 45.5% and 45.4%.

The actuarial present values of future benefits have increased by \$292.5 million for police and \$195.5 million for firemen as is indicated in Section B. Valuation assets, in turn, increased by \$174.7 million for police and \$150.0 million for firemen.

In Section C we set forth a comparison of contribution rate per cents. Item C.1. indicates that the current rate per cent for disability and pension benefits has increased from 29.76% to 29.78%, or by 0.02%, for police, while for firemen the corresponding rate has decreased from 27.05% to 26.57%, for a decrease of 0.48%.

A reconciliation of last year's contribution rates for disability and pension benefits to this year's is as follows:

	<u>Police</u>	<u>Firemen</u>
1. Rate per cent as of January 1, 1995	29.76%	27.05%
2. Actuarial (gains) or losses and changes in membership	0.11	(0.40)
3. Actual investment growth versus expected growth	(0.09)	(0.08)
4. Rate per cent as of January 1, 1996	29.78%	26.57%

The effect of investment growth is only a slight decrease in the rate per cents, which illustrates the smoothing effect of the asset valuation method. Actual returns on the Fund's stock investments were very high during 1995, producing significant gains. Under the 4-Year Market



Adjustment Method for stocks, only 25% of those gains are recognized in 1996 valuation assets, with the remaining 75% phased-in over the following three years.

#### G. HEALTH CARE FUNDING

Effective January 1, 1992 the Board of Trustees established the Health Care Stabilization Fund with an initial allocation of \$150 million. This Health Care Fund allows the segregation, for accounting purposes, of the assets used to pay health care benefits from those used to pay pension and disability benefits.

In conjunction with the establishment of the Health Care Fund, the Board directed that the employer contribution to be allocated to this fund would be 6.50% of payroll each year. This 6.50% was derived from the results of the Wyatt Company's 35-Year Forecast Study, dated May 17, 1991, which indicated that the Fund could achieve long-term solvency if health care expense were limited to 6.50% of payroll and all actuarial assumptions were realized.

In addition to the 6.50% employer contribution, the Health Care Fund is also credited with retiree and survivor health care contributions, which were approximately \$5.0 million for 1995. Interest is credited at the valuation rate, currently 8.25%. Fund personnel have established an accounting procedure under which retiree and survivor contributions are assumed to be made at the beginning of the month and employer contributions and health care expenditures are assumed to occur at the end of the month.

This 1996 valuation is the fourth to recognize the establishment of the Health Care Fund. The balance in this fund as of December 31, 1995 is \$203,467,200, as developed by Fund personnel. As mentioned earlier in this report, Health Care Fund assets are deducted from total valuation assets to determine valuation assets for pension and disability benefits, i.e. the Health Care Fund value is considered to be in terms of valuation assets.



For purposes of determining the total actuarial rate per cent of contribution, the Board-defined 6.50% health care contribution replaces the calculation of the pay-as-you-go rate. However, the actual funding of health care benefits can still be considered to be essentially on a pay-as-you-go basis, but with the Health Care Stabilization Fund providing temporary smoothness in the allocated rate per cent. In particular, health care liabilities were not considered to be prefunded by the establishment of the \$150 million Health Care Fund, nor is there any funding program in place which would accomplish such prefunding.

The 15-Year Forecast Study presented in a report dated November 7, 1994 showed the expected balance in the Health Care Fund at the beginning of each year for the period 1994 through 2009 under various assumption/active membership growth scenarios. Table 7 presented results under current valuation assumptions, a 1.5% per year assumed growth in active membership and modest health care inflation assumptions. Under this scenario the Health Care Fund was expected to be exhausted sometime during the year 2009.

These 1994 forecast results have been updated to a 1996 Health Care Fund Solvency Analysis based on a revised projection of health care payouts. The new projection is based on claims experience for 1995 and on our current expectations for health care trend rates. The 1994 forecast continues to be the basis for projected payroll, which in turn is used to determine the 6.50% allocation of employer funding.

The 1996 solvency analysis, presented in a separate report, indicates that, under current benefit provisions, the Health Care Fund is expected to maintain a positive balance until the year 2012. This represents a three-year increase over the period of solvency expected under the 1994 forecast. However, as discussed in the solvency analysis report, medical expenditures could be significantly affected by changes in Medicare, which would decrease the longevity of





the Health Care Fund.

The 1996 Health Care Fund solvency analysis report also shows projected health care costs as a percentage of payroll. This represents the pay-as-you-go rate of health care funding. For 1996 this rate is estimated to be 6.40%, increasing to 7.76% in 2001, 8.50% in 2006 and 9.10% in 2011.

In summary, it is reasonable to assume that the 6.50% health care funding component will be adequate to provide the current level of benefits for approximately 15 years. However, as actual health care costs increase toward 9.00% of payroll the Health Care Fund will be depleted, requiring the allocation of additional funding or a transfer of surplus pension assets. Changes in Medicare would accelerate the depletion of the Health Care Fund.

#### H. ADEQUACY OF STATUTORY RATES

The rate per cents developed in these evaluation reports, in conjunction with the 15-Year Forecast Study, provide a basis for assessing the adequacy of the current statutory employer contribution rates. Specifically, the evaluation results provide the information needed to determine which of the scenarios in the forecast study most closely models actual experience. That determination then, along with the Forecast Study results, allows for a determination as to whether or not the current statutory rates are adequate, for the valuation year in question.

The 15-Year Forecast Study scenario, which included an annual 1.5% active membership growth, modest health care inflation, and a 0% asset return in 1994 and projected returns of 9.4% each year thereafter, presented in Table 7 of the Forecast Study, showed that statutory rates should be adequate at least through 2003. Under this scenario the January 1, 1996 expected results, compared to the actual results, are as follows:



	<u>January 1, 1996</u>	
	<u>Forecast-Table 7</u>	<u>Actual</u>
1. Active Population	24,923	25,286
2. 1996 Payroll	\$1,063,000,000	\$1,103,000,000 (estimated based on 5 months actual)
3. Present Value of Future Pay	\$10,767,300,000	\$10,970,300,000
4. Present Value of Future Benefits	\$8,171,600,000	\$8,245,400,000
5. Market Value of Assets (Including HCSA)	\$5,132,800,000	\$5,725,300,000
6. Funded Status (Item 5/Item 4)	62.81%	69.44%

As is apparent, the 1996 results are somewhat better than the forecast results under the indicated scenario. Accordingly, we conclude that for 1996 the statutory rates are adequate.

However, an adjustment should be made to eliminate the disparity between the police and firemen statutory rates. The 1996 actuarial rate for police of 36.28% compares to the actuarial rate for firemen of 33.07%, for an excess of 3.21%. In 1995, the excess was 2.71%, in 1994, 2.16% and in 1993, 1.03%. The statutory rates, however, after considering approximately \$4.0 million in state subsidies, are about 29.8% for police and 34.4% for firemen. These various rates strongly suggest that a change be made to the statutory rates that equalizes the rate for both police and firemen.

That rate would be 21.5% plus, for 1996, about .35% for state subsidy plus the 10% member contribution rate, for a total of 31.85%. The combined actuarial rate for 1996 would be 34.84%. The 34.84% is 2.99% in excess of the 31.85%. This 2.99% however, when compared to an estimated payroll of \$1,103 million, amounts to \$32,980,000, which is 0.58% of the market value of assets. This small percentage is additional support for the conclusion stated above, namely, that the 1996 statutory rates are adequate.

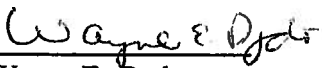


\* \* \* \* \*

In conclusion, we recommend that the Board of Trustees consider this evaluation report in determinations concerning the appropriateness of the actual employer contribution rates.

Respectfully submitted,

WATSON WYATT & COMPANY

  
Wayne E. Dydo  
Fellow - Society of Actuaries


  
Peter N. Dorsey  
Associate - Society of Actuaries



Table 1

POLICE AND FIREMEN'S DISABILITY AND PENSION FUND OF OHIO

Summary of Evaluation Results as of January 1, 1996 1/

	<u>Police</u>	<u>Firemen</u>
<b>A. <u>MEMBERSHIP</u></b>		
1. Number of Active Members	14,558	10,728
2. Number of Retirants	7,791	6,423
3. Number of Beneficiary-Survivors		
a. Surviving Spouses and Beneficiaries	3,022	2,377
b. Children	315	166
c. Total Beneficiary-Survivors	3,337	2,543
4. Total Membership 2/	25,686	19,694
<b>B. <u>SUMMARY OF ACTUARIAL PRESENT VALUES OF FUTURE BENEFITS</u></b>		
1. Active Members 3/	\$2,827,900,000	\$2,189,000,000
2. Retirants	1,680,500,000	1,318,700,000
3. Beneficiary-Survivors	132,300,000	97,000,000
4. Actuarial Present Value for All Members	4,640,700,000	3,604,700,000
<b>C. <u>DEVELOPMENT OF CURRENT RATE PER CENT FOR DISABILITY AND PENSION BENEFITS</u></b>		
1. Actuarial Present Value of Future Benefits	\$4,640,700,000	\$3,604,700,000
2. Valuation Assets	2,746,000,000	2,204,200,000
3. Actuarial Present Value of Employer Accrued Liability	103,400,000	105,700,000
4. Actuarial Present Value of Active Member Future Compensation	6,060,200,000	4,910,100,000



Table 1  
(continued)

	<u>Police</u>	<u>Firemen</u>
5. Net Rate Per Cent, Prior to Expense Loading ((Item C1 - C2 - C3) ÷ C4)	29.56%	26.37%
6. Current Rate Per Cent for Disability and Pension Benefits <u>4/</u>	29.78%	26.57%
<b>D. <u>TOTAL CURRENT RATE PER CENT</u></b>		
1. Current Rate Per Cent for Health Care Plan and Medicare <u>5/</u>	6.50	6.50
2. Total Current Rate Per Cent (Item C6 + D1)	36.28	33.07

1/ Excludes assets and liabilities arising from the increases due to the 1971 House Bill No. 284 and from the Death Benefit Fund established by House Bill No. 1010.

2/ Excluding 49 inactive policemen and 23 inactive firemen.

3/ Includes present values of \$5,800,000 for 49 policemen and \$2,500,000 for 23 firemen who have terminated with more than 15 years of service. Also includes \$400,000 for 35 policemen and \$200,000 for 12 firemen who have been rehired from retired status under House Bill No. 382.

4/ Equals net rate per cent with 0.75% load for expenses.

5/ As specified by the Board of Trustees, 6.50% of payroll is the portion of the employer contributions to be credited to the Health Care Stabilization Fund. For valuation purposes this replaces the determination of a pay-as-you-go rate per cent for health care.





Table 2(a)  
(continued)

POLICE AND FIREMEN'S DISABILITY AND PENSION FUND OF OHIO

Police

Distribution of Retirants by Attained Age Group  
and Sex as of January 1, 1996

<u>Attained Age Group</u> (1)	<u>Males</u> (2)	<u>Females</u> (3)	<u>Total</u> (4)	<u>Col. (4) as % of TOTAL</u> (5)	<u>Annual Rate of Pension 1/</u>	
					<u>As of January 1, 1996</u> (6)	<u>As of January 1, 1995</u> (7)
Under 40	87	22	109	1%	\$ 1,756,902	\$ 1,826,619
40 - 44	208	28	236	3	4,292,571	4,462,659
45 - 49	666	35	701	9	16,036,603	13,105,889
50 - 54	1,369	15	1,384	18	35,305,780	32,000,972
55 - 59	1,354	12	1,366	17	35,290,980	30,735,336
60 - 64	1,055	12	1,067	14	24,388,894	23,615,830
65 - 69	1,236	9	1,245	16	23,982,088	22,840,674
70 - 74	863	9	872	11	14,040,508	11,960,333
75 - 79	403	8	411	5	5,678,227	5,489,265
80 - 84	280	4	284	4	3,514,697	3,067,979
85 - 89	83	-	83	1	870,556	714,790
90 & Over	32	1	33	1	351,151	341,081
<b>TOTAL</b>	<b>7,636</b>	<b>155</b>	<b>7,791</b>	<b>100%</b>	<b>\$165,508,976</b>	<b>\$150,161,440</b>

Average Attained Age			
January 1, 1995	61.7	52.9	61.5
January 1, 1996	61.5	53.0	61.4

Average Annual Benefit		
January 1, 1995		\$20,300
January 1, 1996		21,244

1/ Excludes increases due to House Bill No. 284.



POLICE AND FIREMEN'S DISABILITY AND PENSION FUND OF OHIO

Police

Distribution of Beneficiary-Survivors by Attained Age Group  
as of January 1, 1996

<u>Attained Age Group</u> (1)	<u>Number Receiving Benefits</u> (2)	<u>Col. (2) as % of TOTAL</u> (3)
<b>A. <u>SURVIVING SPOUSES</u> <u>1/</u></b>		
Under 40	38	1%
40 - 44	53	2
45 - 49	79	3
50 - 54	115	4
55 - 59	180	7
60 - 64	250	9
65 - 69	399	15
70 - 74	417	16
75 - 79	383	15
80 - 84	335	13
85 - 89	245	9
90 & Over	162	6
<b>TOTAL</b>	<b>2,656</b>	<b>100%</b>
Average Attained Age	71.7	
<b>B. <u>BENEFICIARIES RECEIVING OPTIONS</u></b>		
Under 35	7	2%
35 - 39	5	1
40 - 44	15	4
45 - 49	23	6
50 - 54	32	9
55 - 59	54	15
60 - 64	52	14
65 - 69	86	24
70 - 74	52	14
75 - 79	32	9
80 - 84	7	2
85 - 89	1	-
90 & Over	-	-
<b>TOTAL</b>	<b>366</b>	<b>100%</b>
<b>C. <u>CHILDREN</u></b>	<b>315</b>	

1/ Includes dependent parents.





Table 2(b)

POLICE AND FIREMEN'S DISABILITY AND PENSION FUND OF OHIO

Firemen

Distribution of Members by Attained Age Group and Length of Service as of January 1, 1996  
 (Females are indicated in parentheses and are included in adjacent totals)

Attained Age Group	0-4	1-4	5-9	10-14	15-19	20-24	25-29	30-Over	Totals	Average Annual Salary	
										As of January 1, 1996	As of January 1, 1995
Under 25	190(4)	-	-	-	-	-	-	-	190(4)	\$29,795	\$29,099
25 - 29	960(15)	2(0)	295(7)	2(0)	-	-	-	-	1,257(22)	34,319	33,829
30 - 34	888(22)	258(6)	963(23)	258(6)	10(0)	-	-	-	2,119(51)	38,365	37,301
35 - 39	351(9)	811(15)	719(30)	811(15)	358(2)	3(0)	-	-	2,242(56)	41,689	40,295
40 - 44	130(6)	608(13)	256(9)	608(13)	829(0)	232(0)	2(0)	-	2,057(28)	43,797	42,028
45 - 49	36(1)	146(4)	93(4)	146(4)	476(1)	812(1)	196(0)	3(0)	1,762(11)	45,174	43,427
50 - 54	14(1)	29(0)	17(1)	29(0)	54(1)	281(0)	329(0)	64(0)	788(3)	47,287	45,551
55 - 59	2(0)	7(0)	3(1)	7(0)	10(0)	40(0)	112(0)	87(0)	261(1)	48,158	46,213
60 - 64	1(0)	1(0)	2(0)	1(0)	4(0)	7(0)	7(0)	20(0)	42(0)	47,057	45,072
65 & Over	-	-	2(0)	-	-	3(0)	-	5(0)	10(0)	45,572	46,272
<b>Total</b>	<b>2,572(58)</b>	<b>1,862(38)</b>	<b>2,350(75)</b>	<b>1,741(4)</b>	<b>1,378(1)</b>	<b>646(0)</b>	<b>179(0)</b>	<b>10,728(176)</b>	<b>\$41,528</b>	<b>\$40,143</b>	
										<u>January 1, 1996</u>	
										<u>January 1, 1995</u>	
Average Attained Age										38.9	38.9
Average Hire Age										26.8	26.6

1/ Includes 578 members hired in 1995.



POLICE AND FIREMEN'S DISABILITY AND PENSION FUND OF OHIO

Firemen

Distribution of Retirants by Attained Age Group  
and Sex as of January 1, 1996

<u>Attained Age Group</u> (1)	<u>Males</u> (2)	<u>Females</u> (3)	<u>Total</u> (4)	<u>Col. (4) as % of TOTAL</u> (5)	<u>Annual Rate of Pension 1/</u>	
					<u>As of January 1, 1996</u> (6)	<u>As of January 1, 1995</u> (7)
Under 40	47	2	49	1%	\$ 801,169	\$ 718,632
40 - 44	88	2	90	1	1,560,662	1,603,587
45 - 49	281	2	283	4	6,311,713	5,003,304
50 - 54	826	-	826	13	21,256,338	19,557,708
55 - 59	1,078	-	1,078	17	28,385,438	26,060,156
60 - 64	1,060	-	1,060	17	25,511,320	25,257,516
65 - 69	1,329	-	1,329	21	26,925,896	26,298,000
70 - 74	861	-	861	13	14,490,136	11,658,135
75 - 79	401	-	401	6	5,663,828	5,708,764
80 - 84	327	-	327	5	4,063,631	3,388,723
85 - 89	89	-	89	1	990,794	853,195
90 & Over	30	-	30	1	274,492	237,755
<b>TOTAL</b>	<b>6,417</b>	<b>6</b>	<b>6,423</b>	<b>100%</b>	<b>\$136,235,424</b>	<b>\$126,345,472</b>
<b>Average Attained Age</b>						
January 1, 1995	64.2	40.6	64.1			
January 1, 1996	64.1	41.6	64.1			
<b>Average Annual Benefit</b>						
				January 1, 1995		\$20,300
				January 1, 1996		21,211

1/ Excludes increases due to House Bill No. 284.



POLICE AND FIREMEN'S DISABILITY AND PENSION FUND OF OHIO

Firemen

Distribution of Beneficiary-Survivors by Attained Age Group  
as of January 1, 1996

Attained Age Group (1)	Number Receiving Benefits (2)	Col. (2) as % of TOTAL (3)
<b>A. <u>SURVIVING SPOUSES</u> <sup>1/</sup></b>		
Under 40	20	1%
40 - 44	28	1
45 - 49	40	2
50 - 54	80	4
55 - 59	101	5
60 - 64	194	9
65 - 69	297	14
70 - 74	340	16
75 - 79	336	16
80 - 84	331	16
85 - 89	195	9
90 & Over	141	7
<b>TOTAL</b>	<b>2,103</b>	<b>100%</b>
 Average Attained Age	 73.4	
<b>B. <u>BENEFICIARIES RECEIVING OPTIONS</u></b>		
Under 35	4	1%
35 - 39	6	2
40 - 44	5	2
45 - 49	11	4
50 - 54	23	8
55 - 59	33	12
60 - 64	43	16
65 - 69	58	21
70 - 74	51	19
75 - 79	27	10
80 - 84	10	4
85 - 89	2	1
90 & over	1	-
<b>TOTAL</b>	<b>274</b>	<b>100%</b>
<b>C. <u>CHILDREN</u></b>	<b>166</b>	

<sup>1/</sup> Includes dependent parents.



Table 3

POLICE AND FIREMEN'S DISABILITY AND PENSION FUND OF OHIO

Description of Benefits Under Statewide Plan  
(Per Ohio Revised Code Chapter 742, Excluding  
Consideration of 1971 House Bill No. 284  
and 1976 House Bill No. 1010)

1. Service Retirement
  - (a) Eligibility: Age 48 and 25 years of service.
  - (b) Benefit: An annual pension equal to a percentage of the average annual salary, where the percentage equals 2.5% for each of the first 20 years of service, 2% for each of the next five years of service, and 1.5% for service in excess of 25 years, to a maximum of 72% of the average annual salary. Average annual salary means one-third of the total salary during the three years during which the total earnings were greatest.
  
2. Special Service Retirement for Late Hires
  - (a) Eligibility: Age 62 and 15 years of service.
  - (b) Benefit: The same as the Service Retirement Benefit.
  
3. Permanent and Total Disability (On duty)
  - (a) Eligibility: No age or service requirement.
  - (b) Benefit: An annual pension equal to 72% of the annual salary during the last year of active service.
  
4. Partial Disability (On duty)
  - (a) Eligibility: No age or service requirement.
  - (b) Benefit: An annual pension to be fixed by the Board of Trustees, but not to exceed 60% of the average annual salary; provided that if the member has 25 or more years of service the annual disability pension is equal to the accrued Service Retirement Benefit.
  
5. Heart Disease Disability
  - (a) Eligibility: No age or service requirement.



- (b) **Benefit:** An annual pension in an amount determined in accordance with the benefit provisions of Item 3. or Item 4. above, as the case may be.
6. **Ordinary Disability (Off duty)**
- (a) **Eligibility:** Any age and five years of service.
- (b) **Benefit:** An annual pension to be fixed by the Board, but not to exceed the accrued Service Retirement Benefit, or \$5,000, whichever is greater.
7. **Termination of Service Prior to Retirement**
- One of the following benefits depending upon the particular circumstances:
- Refund
- (a) **Eligibility:** No age or service requirement.
- (b) **Benefit:** A lump-sum amount equal to the sum of the contributions made by the member to the Fund.
- Vesting After 15 Years
- (a) **Eligibility:** 15 years of service.
- (b) **Benefit:** Commencing at age 48 or hire age plus 25 years, whichever is later; an annual pension equal to 1-1/2% of the average annual salary multiplied by the number of years of service.
- Vesting After 25 Years
- (a) **Eligibility:** 25 years of service.
- (b) **Benefit:** Commencing at age 48, the accrued Service Retirement Benefit.
8. **Flat Death Benefits**
- (a) **Eligibility:** Upon death to any member of the Fund, active or retired.
- (b) **Benefit:**
- (i) **Surviving Spouse's Benefit -** An annual amount equal to \$4,920.



Table 3  
(continued)

- (ii) **Surviving Children** - An annual amount equal to \$1,416, payable until such child attains age 18 or marries, whichever occurs first. (Similar payments made, regardless of age, to disabled children.) An annual amount equal to \$1,416 will continue beyond age 18 up to age 22 while the child is a student.
- (iii) **Dependent Parents** - An annual amount of \$1,896 to one dependent parent or \$948 each to two dependent parents, during their lifetime or until dependency ceases or until remarriage, provided that deceased member leaves no surviving spouse or surviving children.

**Note:** Payment of the above benefits will be suspended during any period payments are being made pursuant to Sec. 742.63 RC (Death Benefit Fund established by Sec. 742.61 RC).

**9. Pre-retirement Surviving Spouse Benefit**

- (a) **Eligibility:** Upon death before retirement but after having satisfied the requirements for retirement.
- (b) **Benefit:** The surviving spouse or contingent dependent beneficiary will receive 50% of the benefit that the deceased member would have been entitled to had he retired on the day of his death under the 50% Joint & Survivor annuity form.

**10. Member Contributions:** 10% of salary.

**11. Pension Increases for Certain Retirants:** Commencing January 1, 1974, the pensions of persons who retired between July 1, 1968 and June 30, 1971 will be increased by \$2.00 per month times the number of years on retirement as of June 30, 1973.

Effective January 1, 1977, annual pensions (except those arising from volunteer or part-time service, or early vested service) shall be increased as follows:



Table 3  
(continued)

(i) if the annual pension was less than \$2,700, then the pension shall be increased to \$3,000; (ii) if the annual pension was \$2,700 or more, the increase shall be \$300 per year. These increases do not apply to benefits being paid under pre-1947 plans with an automatic escalating provision.

Effective July 1, 1979, retirees (excluding those with escalating benefits) who retired prior to January 1, 1974 have pension increases of 5% of the first \$5,000 of annual pension.

Effective January 1, 1982, retirees (excluding those with escalating benefits) who retired prior to February 28, 1980, have pension increases of \$46 per month.

Effective August 1, 1988, members who retired prior to February 28, 1984 and who were receiving an annual benefit of less than \$13,000 have pension increases of \$50 per month, or if larger, the amount needed to increase the current annual pension to \$4,200.

Effective July 1, 1989, the minimum annual pension for current retirees with 25 or more years of service is \$5,000, the annual pension of a surviving spouse is increased to \$4,920, and the annual benefit of a dependent surviving child is increased to \$1,416.

Retirees prior to July 24, 1986 whose annual straight life pension is less than \$18,000 will receive an increase in their annual pension of \$360, actuarially adjusted to reflect optional annuity forms of benefits. The increase is paid only if the annual increase in the Consumer Price Index, plus unused prior increases, equals or exceeds 3%. The first increase is paid July 1, 1988. Beginning in 1989, the \$18,000 limit is increased by \$500 each year.

12. Group Health Insurance and Medicare:

Commencing January 1, 1974, the Board may contract for group health insurance on the basis of part or all of the cost of the premium for the coverage to be paid by the Fund.

Effective January 1, 1977, the Fund will pay the premium for supplemental Medicare (Part B).



Table 3  
(continued)

Effective July 1, 1992 pensioners and survivors make monthly medical benefit contributions, which are credited to the Health Care Stabilization Fund. Monthly contributions range from \$0 to \$50 depending on the type and amount of the participant's pension.

13. COLA or Terminal Pay:

Members retiring after July 24, 1986 and who have 15 or more years of service as of January 1, 1989, are allowed to select between (1) a pension calculated on the basis of average salary which is increased to reflect terminal pay adjustments, or (2) a pension based on average salary excluding the terminal pay adjustment, but increasing by 3% of the initial pension each retirement anniversary after July 1, 1989. The 3% addition is paid only if the annual increase in the Consumer Price Index, plus unused prior increases, equals or exceeds 3%. This additive 3% COLA annuity without terminal pay adjustment is the automatic form for active members with less than 15 years of service as of January 1, 1989.

14. Optional Forms of Payment:

Effective February 28, 1980, retiring members may elect to have actuarially reduced benefits payable under certain and continuous and joint and survivor annuity forms. The maximum certain period is 20 years, and the continuation percentage under the joint and survivor form is limited to 100%.

Effective September 26, 1984, members who retired before February 28, 1980 may make a one-time election to have their benefits reduced and paid under the joint and survivor annuity form with the surviving spouse as survivor annuitant.

Effective September 9, 1989, elected options may be cancelled within one year after benefits commence.

15. Lump Sum Death Benefit:

Effective November 2, 1989, a \$1,000 lump sum payment will be made on account of death of a retired member.





Table 4

POLICE AND FIREMEN'S DISABILITY AND PENSION FUND OF OHIO

Summary of Actuarial Assumptions and Actuarial Cost Method

A. Interest: A rate of 8.25% per annum, compounded annually.

B. Rates and Other Assumptions  
Among Active Members:

1. Before Retirement -

(a) Mortality: Mortality is based on the 1951 Group Annuity Mortality Table projected to 1980 using Scale C, with a one-year set-forward in age. The projected values are multiplied by 0.5 at all ages to obtain the assumed mortality rates. The following rates at selected ages are illustrative:

<u>Age</u>	<u>Rate of Mortality</u>	
	<u>Police</u>	<u>Firemen</u>
25	.000307	.000307
30	.000406	.000406
35	.000569	.000569
40	.000845	.000845
45	.001568	.001568
50	.002773	.002773
55	.004377	.004377

(b) Termination: The rates of termination are based upon the results of the 1987-1991 Quinquennial Evaluation. The following rates at selected ages are illustrative:

<u>Age</u>	<u>Rate of Termination</u>	
	<u>Police</u>	<u>Firemen</u>
25	.047001	.016655
30	.031525	.015071
35	.022161	.012432
40	.014759	.007482
45	.009658	.004385
50	.012847	.004884

Note: The present values of future benefits for active members resulting from the use of these withdrawal rates are actuarially adjusted to include provision for prospective terminated employees eligible for vested termination benefits arising from the vesting provisions of the 1971 Amended Substitute Senate Bill No. 137.



Table 4  
(continued)

(c) Disability:

The rates of disability are based upon the results of the 1987-1991 Quinquennial Evaluation and upon the disability experience for 1992-1993. The following rates at selected ages are illustrative:

<u>Age</u>	<u>Rate of Disability</u>	
	<u>Police</u>	<u>Firemen</u>
25	.001175	.000236
30	.002370	.001254
35	.005326	.002934
40	.011544	.007136
45	.021970	.015119
50	.033918	.028520
55	.051672	.046271

Note: The present values of future benefits for active members resulting from the use of these disability rates reflect the fact that the occurrence of disability by type approximates the following:

	<u>Police</u>	<u>Firemen</u>
On duty permanent and total	22%	27%
On duty partial	75	70
Off duty ordinary	3	3

(d) Salary Increase Rate:

The per annum rates of future salary increase can be divided into two component parts: (i) inflationary increase of 4% per year and (ii) age-graded promotional increases as follows:

<u>Age(s)</u>	<u>Promotional Increase</u>	<u>Total Increase</u>
under 30	3.00%	7.00%
30 - 34	1.75	5.75%
over 34	1.00	5.00%

(e) Retirement:

The rates of retirement are based upon the experience during the periods 1990 through 1993. These rates are applicable after the member has satisfied the conditions for retirement. The rates are as follows:

<u>Police</u>		<u>Firemen</u>	
<u>Age(s)</u>	<u>Rate</u>	<u>Age(s)</u>	<u>Rate</u>
48	0.35	48	0.35
49 - 53	0.25	49 - 59	0.25
54 - 60	0.20	60 - 64	0.35
61 - 64	0.25	65	1.00
65	1.00		



2. After Retirement -

(a) On Service Retirement Pension:

The mortality, after retirement of active members expected to go on service retirement, is based on the 1951 Group Annuity Mortality Table projected to 1980 using Scale C, with a one-year set-forward in age. The following probabilities at selected ages are illustrative:

<u>Age</u>	<u>Probability of Mortality</u>
50	.005545
55	.008753
60	.013012
65	.020979
70	.033316
75	.056741
80	.099390
85	.158333
90	.236172
95	.316061

(b) On Disability Retirement Pension:

The mortality, after retirement of active members expected to go on disability retirement, is based on the results of the 1987-1991 Quinquennial Evaluation. The rates are based on the 1951 Group Annuity Mortality Table projected to 1980 using Scale C and include loads for disability. These rates are then set-back by two years in age to reflect the greater percentage of partial disabilities. The following probabilities at selected ages are illustrative:

<u>Age</u>	<u>Probability of Mortality</u>
35	.008424
45	.009636
55	.016736
65	.035482
75	.060183
85	.136516
95	.265027



C. Probabilities of Mortality  
Among Pensioners

1. Nondisabled Pensioners: The mortality among all nondisabled retirants is equal to the 1951 Group Annuity Mortality Table rates projected to 1980 using Scale C, with a one-year set-forward in age. The following probabilities at selected ages are illustrative:

<u>Age</u>	<u>Probability of Mortality</u>
50	.005545
55	.008753
60	.013012
65	.020979
70	.033316
75	.056741
80	.099390
85	.158333
90	.236172
95	.316061

2. Disabled Pensioners: The mortality among all disabled retirants is based on the 1951 Group Annuity Mortality Table projected to 1980 using Scale C and includes loads for disability. The following probabilities at selected ages are illustrative:

<u>Age</u>	<u>Probability of Mortality</u>
35	.008560
40	.009043
45	.010262
50	.012495
55	.018051
60	.022001
65	.038838
70	.050322
75	.071826
80	.111137
85	.168254
90	.222882
95	.297806



Table 4  
(continued)

D. Probabilities Among Survivors:

1. Probabilities of Mortality Among Surviving Spouses -

The mortality among all present surviving spouses is based on the Projected Annuity Mortality Table rates, decreased by 15% at all ages. The following probabilities at selected ages are illustrative:

<u>Age</u>	<u>Probability of Mortality</u>
35	.001326
40	.001938
45	.002950
50	.004471
55	.006775
60	.010464
65	.016448
70	.026121
75	.042560
80	.067465
85	.102527
90	.151530
95	.219657

2. Probability of Remarriage Among Surviving Spouses -

The probabilities of remarriage of surviving spouses are based upon the results of the 1987-1991 Quinquennial Evaluation. The following probabilities at selected ages are illustrative:

<u>Age</u>	<u>Probability of Remarriage</u>
35	.030686
40	.025594
45	.017015
50	.008101
55	.006225
60	.005491
65	.002442
70	.001092
75	.000491

3. Dependent Children -

No specific allowance has been made, in the evaluation of this benefit, for the probability of mortality prior to age 18, or the probability of disability at age 18 and thereafter. In valuing the benefit beyond age 18, it is assumed that 1/3 of the dependent children will be students and eligible for payments to age 22.



4. Dependent Parents - Costs based upon allowance for mortality (the Projected Annuity Mortality Table rates), but no specific allowance for change in dependency status.
- E. COLA Annuities: It has been assumed that, where an election is possible, all members will elect the COLA annuity. It has also been assumed that the Consumer Price Index will increase each year at a rate equal to or greater than 3%.
- F. Expense Loading: The net costs were loaded by 3/4 of 1% to allow for future administrative expenses of the Fund.
- G. Actuarial Cost Method: The "frozen initial liability" method has been used in developing the required contributions to the Fund. Under this approach, the present value of future benefits is reduced by valuation assets and the present value of the employer accrued liability. This net amount is then expressed as a percentage of the present value of active member future compensation and that percentage is applied to current payroll to determine the actual contribution.
- The employer accrued liability was determined for each separate police and firemen's fund as of April 1, 1966. Each employer with an existing liability is presently making payments at the rate of 5% of the original liability (adjusted for any excess payments) pursuant to the schedule set forth in Section 742.30 of the Ohio Revised Code.



Table 4  
(continued)

H. Valuation Assets:

Valuation assets equal the net cost (book) value of all Fund assets, except common and preferred stocks are included in valuation assets with a value equal to that developed under the 4-Year Market Adjustment Method, with an initial value equal to market value. Under this method realized and unrealized gains are recognized in the assets over a 4-year period: valuation assets equal market value less 75% of the previous year's realized and unrealized gains, 50% of the second previous year's realized and unrealized gains, and 25% of the third previous year's realized and unrealized gains. Full implementation of the phase-in is to occur on January 1, 1996. The balance in the Health Care Stabilization Fund is excluded from total assets to arrive at valuation assets for pension and disability benefits. Contributions due to be refunded to terminated members are also excluded from valuation assets.



Table 5

## POLICE AND FIREMEN'S DISABILITY AND PENSION FUND OF OHIO

Comparison of Evaluation Results for 1995 and 1996

	<u>1996</u>		<u>1995</u>	
	<u>Police</u>	<u>Firemen</u>	<u>Police</u>	<u>Firemen</u>
<b>A. <u>MEMBERSHIP</u></b>				
1. Number of Active Members	14,558	10,728	14,072	10,511
2. Number of Retirants and Beneficiary-Survivors	11,128	8,966	10,686	8,746
3. Total Membership	25,686	19,694	24,758	19,257
<b>B. <u>ACTUARIAL PRESENT VALUE AND ASSETS (000,000 omitted)</u></b>				
1. Present Value of Future Benefits	\$4,640.7	\$3,604.7	\$4,348.2	\$3,409.2
2. Valuation Assets	2,746.0	2,204.2	2,571.3	2,054.2
3. Present Value of Employer Accrued Liability	103.4	105.7	105.6	107.7
4. Present Value of Active Member Future Compensation	6,060.2	4,910.1	5,657.9	4,645.2
<b>C. <u>CURRENT RATE PER CENT</u></b>				
1. Disability and Pension Benefits	29.78%	26.57%	29.76%	27.05%
2. Health Care Plan and Medicare <u>1/</u>	6.50	6.50	6.50	6.50
3. Total	36.28	33.07	36.26	33.55





Table 6

POLICE AND FIREMEN'S DISABILITY AND PENSION FUND OF OHIO

Asset Allocation for 1996

The following table presents a development of the allocation of assets between police and firemen as of January 1, 1996.

	<u>Police</u>	<u>Firemen</u>	<u>Total</u>
(1) 1/1/95 Valuation Assets			
a. Pension Valuation Assets	\$2,571,286,077	\$2,054,257,963	\$4,625,544,040
b. Health Care Stabilization Accounts	108,890,966	75,674,620	184,565,586
c. Total Valuation Assets	2,680,177,043	2,129,932,583	4,810,109,626
(2) Transactions during 1995			
a. Employer contributions	116,282,557	106,923,823	223,206,380
b. Net employee contributions	59,011,938	44,435,179	103,447,117
c. Retiree medical contributions	2,636,275	2,328,784	4,965,059
d. Local Funds receipts	6,395,484	6,529,424	12,924,908
e. Benefit payments and expenses	<u>(221,046,207)</u>	<u>(184,287,678)</u>	<u>(405,333,885)</u>
f. Total transactions	(36,719,953)	(24,070,468)	(60,790,421)
(3) Item 1(c) plus Item 2(f)	2,643,457,090	2,105,862,115	4,749,319,205
(4) Expected Investment Growth	219,599,908	174,726,531	394,326,439
(5) Valuation Assets, Total			
a. Book Value Excluding Stocks			2,927,131,773
b. Market Adjusted Stock Value <u>1/</u>			2,230,137,600
c. Contribution Refunds Due			<u>(3,583,647)</u>
d. Total			5,153,685,726
(6) Actual Investment Growth (Item 5 less Item 3)			404,366,521
(7) Allocation of Item 6 in proportion to Item 4	225,191,217	179,175,304	404,366,521
(8) Health Care Stabilization Fund	122,609,822	80,857,382	203,467,204
(9) 1/1/96 Pension Valuation Assets (Item 3 plus Item 7 less Item 8)	2,746,038,485	2,204,180,037	4,950,218,522

See footnote on next page.





Table 6  
(continued)

1/ The Market Adjusted Stock Value is developed as follows:	<u>12/31/92</u>	<u>12/31/93</u>	<u>12/31/94</u>	<u>12/31/95</u>
1. Unrealized Gain/(Loss)				
a. Market Value of Stocks	\$1,468,043,276	\$1,620,250,036	\$1,831,246,036	\$2,688,991,450
b. Book Value of Stocks	1,175,107,740	1,284,053,979	1,611,504,222	2,035,502,034
c. Cumulative Unrealized Gain/(Loss) (1.a - 1.b)	292,935,536	336,196,057	219,741,814	653,489,416
d. Annual Unrealized Gain/(Loss)		43,260,521	(116,454,243)	433,747,602
2. Annual Realized Gain/(Loss) Reported by Fund		81,997,436	64,612,268	170,866,196
3. Total Gain/(Loss)		125,257,957	(51,841,975)	604,613,798
4. Gain/(Loss) Excluded from 1996 Market Value				453,460,349
a. For 1995 (.75 x Item 3)				(25,920,988)
b. For 1994 (.50 x Item 3)				31,314,489
c. For 1993 (.25 x Item 3)				458,853,850
d. Total				
5. Market Adjusted Stock Value (1.a - 4.d)				2,230,137,600