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1981 ACTUARIAL REPORT

for

Notes
DETROIT FIRE DEPARTMENT
RELIEF ASSOCIATION



Hewitt Associates

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Section 1. A Brief Summary of the Census Data

The data on which this actuarial valuation is based is summarized below.

Members Not Yet Receiving Benefits

	<u>Number</u>	<u>Prospective Retirement Lump Sum Benefits</u>
Active Members	36	\$709,600
Deferred Annuitant Members	-	-

Members Currently Receiving Benefits

	<u>Number</u>	<u>Annual Annuity Payments</u>
Retired Members	17	\$20,400
Disabled Members	-	-
Widows of Deceased Members	5	\$ 2,400
Children of Deceased Members	1	\$ 180

Section 2. The Actuarial Valuation

The results of the valuation on January 1, 1981, are shown below.

1. Accrued Liability	\$418,011
2. Special Fund Assets	\$152,201
3. Unfunded Accrued Liability (Prior Service Deficit)	\$265,810
4. Normal Cost	\$ 15,695

The actuarial assumptions used in determining these results will be found in Appendix A.

Explanation of Actuarial Terminology

Accrued Liability: The present value of benefits earned for service prior to the valuation date under the actuarial method used. The actuarial method used spreads the cost of total expected benefits equally over each member's anticipated period of active membership. The dollar amount shown as the Accrued Liability represents the number of dollars that should be in the Special Fund to provide for benefits already earned.

Unfunded Accrued Liability (Prior Service Deficit): This amount is the difference between the Accrued Liability (the amount that should be in the Special Fund to fully provide for benefits already earned) and the actual amount of Special Fund assets.

Normal Cost: The amount necessary, according to the actuarial method used, to pay for benefits earned in 1981 (and each future year until another actuarial valuation is completed).

Section 3. Contributions

The Volunteer Firemen's Relief Association Guidelines Bill of 1971 (Chapter 261 of Minnesota Statutes 1971) specifies minimum support rates required on an annual basis. The minimum support rates from the municipality and state aid are determined as the amount required to meet the Normal Cost plus amortizing any existing prior service deficit over a 20-year period. This total contribution is shown below.

The contribution required by the municipality for any year is determined by taking Item 3 below, and subtracting one year's estimated state aid expected from the state pursuant to Minnesota Statutes, Chapter 69.

Contribution to Amortize Unfunded Accrued Liability (Prior Service Deficit) Over 20 Years

1. Normal Cost	\$15,695
2. Amortization Payment on Unfunded Accrued Liability (Prior Service Deficit)	<u>20,313</u>
3. Total Contribution Required, if made 1/1/81 (including State Aid)	\$36,008
4. Interest at 5% to 12/31/81	<u>1,800</u>
5. Total Contribution, if made 12/31/81	\$37,808



Section 4. Income of Fund During 1980

Members' Contributions	\$ 57.00
Contributions by Municipality	3,011.00
State Aid	17,091.70
Other	<u>0</u>
Total Contributions	\$20,159.70
Investment Income	\$ 8,682.79

Section 5. The Preparation of the Report

This report has been prepared in accordance with generally accepted actuarial principles and practices. This actuarial survey was made in accordance with our understanding of the requirements of the Volunteer Firemen's Relief Association Guidelines Act of 1971, as amended by Chapter 563, Laws of Minnesota 1978. The usual care has been exercised in making the calculations and presenting the results. The contents of this report are, therefore, believed to be a correct appraisal of the state of affairs of the Plan.

Respectfully submitted,

HEWITT ASSOCIATES

Eric R. Cerling

Eric R. Cerling
Fellow, Society of Actuaries



APPENDIX A

ACTUARIAL ASSUMPTIONS

Mortality Rates	The mortality rates used are based on the United States Life Table, 1959-61, White Males and White Females. These tables were used for active members, retired members and for survivors.
Withdrawal Rates	The rate of withdrawal of .060 at age 20 decreasing uniformly to zero at age 45 with no withdrawal after that age.
Disability Rates	The expected Normal Cost of any disability benefits has been determined using claim statistics based on rates developed by the New York State Employees' Retirement System, and the resulting cost has been included in the Normal Cost shown on page 2.
Retirement Age	Members are assumed to retire after attaining age 53 and 20 years of service.
Interest Rate	Five percent compounded annually.
Actuarial Method	The Entry Age Normal Cost Method has been used with the Normal Cost determined as a level amount each year from the date of joining the Department to the assumed retirement age.



APPENDIX B

SUMMARY OF PLAN PROVISIONS

Retirement Benefit

Requirements	Twenty years of service and 50 years of age.
Amount	<u>Benefit When Minimum Requirements Are Met:</u> Lump sum benefit of \$800 per year of service.

Vesting Benefit

Requirements	60% vested after 10 years of service plus 4% per year to 100% after 20 years of service.
Amount	Same as Retirement Benefit deferred to age 50.

Disability Benefit

Requirements	None.
Amount	<u>Short Term Disability:</u> \$50 per week for up to 24 weeks after the 14th day of disability. <u>Total Disability:</u> Lump sum benefit of \$800 per year of service.

Lump Sum Death Benefit

Requirements	None.
Amount	\$800 per year of service.

APPENDIX C

CENSUS DATA



DETROIT FIRE DEPARTMENT

RELIEF ASSOCIATION

Active Members

<u>Number</u>	<u>Age Nearest Birthday</u>	<u>Completed Years of Service</u>	<u>Projected Lump Sum Benefit</u>
1	43	13	18,400
2	51	20	17,600
3	43	8	16,000
4	22	0	24,800
5	36	13	24,000
6	39	16	24,000
7	41	10	17,600
8	29	1	20,000
9	27	6	25,600
10	34	4	18,400
11	48	22	21,600
12	42	12	18,400
13	47	15	16,800
14	47	13	15,200
15	51	15	16,000
16	32	15	28,800
17	50	19	17,600
18	53	13	16,000
19	34	0	16,000
20	53	17	16,000
21	28	5	24,000
22	40	8	16,800
23	27	5	24,800
24	37	1	16,000
25	31	4	20,800
26	55	18	16,000
27	37	8	19,200
28	33	6	20,800
29	30	2	20,000
30	42	15	20,800
31	30	6	23,200
32	27	6	25,600
33	46	16	18,400
34	36	3	16,000
35	44	13	17,600
36	46	19	20,800



DETROIT FIRE DEPARTMENT

RELIEF ASSOCIATION

RETIRED MEMBERS

<u>Number</u>	<u>Age Nearest Birthday</u>	<u>Type of Annuity</u>	<u>Annual Annuity</u>
1	73	No Escalator	\$1,200
2	72	No Escalator	\$1,200
3	71	No Escalator	\$1,200
4	71	No Escalator	\$1,200
5	71	No Escalator	\$1,200
6	70	No Escalator	\$1,200
7	70	No Escalator	\$1,200
8	69	No Escalator	\$1,200
9	67	No Escalator	\$1,200
10	67	No Escalator	\$1,200
11	66	No Escalator	\$1,200
12	66	No Escalator	\$1,200
13	64	No Escalator	\$1,200
14	62	No Escalator	\$1,200
15	60	No Escalator	\$1,200
16	59	No Escalator	\$1,200
17	58	No Escalator	\$1,200

WIDOWS OF DECEASED MEMBERS

1	86	No Escalator	\$480
2	80	No Escalator	\$480
3	73	No Escalator	\$480
4	65	No Escalator	\$480
5	59	No Escalator	\$480

ORPHANS OF DECEASED MEMBERS

1	13	No Escalator	\$180
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