

The Report of the
GAIN/LOSS ANALYSIS OF FINANCIAL EXPERIENCE
During calendar 1979 and 1980
CITY OF ST. CLOUD
POLICE RELIEF ASSOCIATION
St. Cloud, Minnesota

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April 6, 1981

City of St. Cloud Police Relief Association
St. Cloud, Minnesota

Submitted in this report are the results of the 1979-80 gain/loss analysis of the financial experiences of the St. Cloud Police Relief Association.

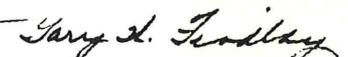
The composite results of this study are reported on Schedules 1(A) and 1(B) and comments regarding the results are on page 12.

The gain/loss analysis was based upon statistical data furnished by the Association regarding active and retired member changes and related financial transactions.

The actuarial assumptions used for regular valuation purposes and which produce "expected" experience data are shown in the appendix of this report.

Respectfully submitted,


Robert M. O'Keefe


Gary W. Findlay

RMO:mh

PURPOSE OF GAIN/LOSS ANALYSIS

Actual financial experience will not coincide exactly with assumed financial experience--differences are to be expected since the future cannot be predicted with absolute precision. The changes in computed liabilities resulting from differences between actual and assumed experiences are called actuarial gains if the experience was financially favorable and actuarial losses if the experience was financially unfavorable. Actuarial gains result in decreases in contribution rates and actuarial losses result in increases.

Regular actuarial valuations provide information about aggregate computed liabilities. However, regular valuations do not develop the information needed to explain the year to year changes in computed liabilities attributable to each activity within the retirement system financial mechanism. The purpose of a gain/loss analysis is to determine the change in computed liabilities and contribution rates attributable to variations between actual and assumed experience.

Once a difference between actual and assumed experience in a risk area has been observed to be sizeable and persistent, the assumed experience should be changed to reflect the observed reality. However, gains and losses over a relatively short period of time may not be indicative of long term trends which provide the basis for selection of actuarial assumptions.

ACTIVITY WHICH RESULTS IN GAINS OR LOSSES

Age & Service Retirement.

If members retire at older ages than assumed, there is a gain. If retirements occur at younger ages than assumed there is a loss.

Disability & Death-in-Service.

If casulaty claims are less than assumed, there is a gain. If there are more casualty losses than assumed, there is a loss.

Withdrawal.

If more liabilities are released by withdrawal than assumed, there is a gain.
If there are fewer withdrawals than assumed, there is a loss.

Salary Increases.

If there are smaller salary increases than assumed, there is a gain.
If salary increases are greater than assumed, there is a loss.

Investment Income.

If there is greater investment income than assumed, there is a gain.
If investment income is less than assumed, there is a loss.

Post Retirement Mortality.

If benefit recipients die at younger ages than assumed, there is a gain.
If they live longer than assumed, there is a loss.

Contribution.

Gains or losses arise due to the delay in implementing changes in the recommended contribution.

Miscellaneous.

Miscellaneous gains and losses include changes due to data adjustments, rounding and changes in the average age and service characteristics of the group.

ST. CLOUD POLICE RELIEF ASSOCIATION

Schedule 1(A)

Gains & Losses in Accrued Liabilities
and Changes in Contribution Requirements
During Calendar 1979

<u>Type of Activity</u>	<u>Accrued Liabilities (Gain) or Loss</u>		<u>Contribution Requirements (Gain) or Loss</u>	
	<u>Active Members</u> (\$ in 1,000)	<u>Retirants & Beneficiaries</u> (\$ in 1,000)	<u>Normal Cost % of Payroll</u> (\$ in 1,000)	<u>\$ Payment on UAL</u> (\$ in 1,000)
<u>Age & Service Retirements</u>	\$(10)	\$N/A	N/A%	\$(0.5)
<u>Disability & Death-in-Service</u>				
a. <u>Disability</u>	(7)	N/A	N/A	(0.3)
b. <u>Death-in Service</u>	(8)	N/A	N/A	(0.4)
<u>Withdrawal</u>	14	N/A	N/A	0.7
<u>Salary Increases</u>	441	494	N/A	45.6
<u>Investment Income</u>	(9)	(31)	N/A	(2.0)
<u>Post Retirement Mortality</u>	N/A	32	N/A	1.6
<u>Contribution</u>	(11)	(18)	N/A	(1.4)
<u>Miscellaneous</u>	<u>(25)</u>	<u>(29)</u>	<u>N/A</u>	<u>(2.6)</u>
EXPERIENCE RELATED (GAIN)/LOSS & CORRESPONDING CHANGE IN CONTRIBUTION REQUIREMENTS	\$385	\$448	N/A%	\$40.7
<u>Changes due to plan amendments</u>	<u>0</u>	<u>0</u>	<u>N/A</u>	<u>0</u>
TOTAL (GAIN)/LOSS DURING YEAR	<u>\$385</u>	<u>\$448</u>	<u>N/A%</u>	<u>\$40.7</u>

ST. CLOUD POLICE RELIEF ASSOCIATION

Schedule 1(B)

Gains & Losses in Accrued Liabilities
and Changes in Contribution Requirements
During Calendar 1980

Type of Activity	Accrued Liabilities (Gain) or Loss		Contribution Requirements (Gain) or Loss	
	Active Members	Retirants & Beneficiaries	Normal Cost % of Payroll	\$ Payment on UAL
	(\$ in 1,000)		(\$ in 1,000)	
<u>Age & Service Retirements</u>	\$(10)	\$N/A	0.04 %	\$ (0.5)
<u>Disability & Death-in-Service</u>				
a. <u>Disability</u>	(8)	N/A	(0.16)	(0.4)
b. <u>Death-in Service</u>	(15)	N/A	(0.03)	(0.7)
<u>Withdrawal</u>	(34)	N/A	0.10	(1.7)
<u>Salary Increases</u>	160	129	0	14.1
<u>Investment Income</u>	(19)	(71)	0	(4.4)
<u>Post Retirement Mortality</u>	N/A	41	N/A	2.0
<u>Contribution</u>	(27)	(33)	0	(2.9)
<u>Miscellaneous</u>	<u>21</u>	<u>30</u>	<u>0</u>	<u>2.5</u>
EXPERIENCE RELATED (GAIN)/LOSS & CORRESPONDING CHANGE IN CONTRIBUTION REQUIREMENTS	\$ 68	\$ 96	(0.05)%	\$ 8.0
<u>Conversion to UAL Amortization</u>	N/A	N/A	N/A	78.9
<u>Change in Funding Method For Death & Disability</u>	87	N/A	0.09	4.2
<u>Changes due to plan amendments</u>	<u>285</u>	<u>157</u>	<u>2.34</u>	<u>21.6</u>
TOTAL (GAIN)/LOSS DURING YEAR	<u>\$440</u>	<u>\$253</u>	<u>2.38%</u>	<u>\$112.7</u>

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Schedule 2(A)

Employees Active at Both Beginning & End of 1979

<u>Age Group Beg. Year</u>	<u>No.</u>	<u>Beginning Salary</u>	<u>Ending Salary</u>	<u>% Increase In Salary</u>
30-34	6	\$ 91,296	\$107,568	17.8%
35-39	12	182,592	215,136	17.8
40-44	8	121,728	143,424	17.8
45-49	4	60,864	71,712	17.8
50-54	1	15,216	17,928	17.8
55-59	<u>3</u>	<u>45,648</u>	<u>53,784</u>	17.8
TOTALS	34	\$517,344	\$609,552	17.8%

Employees Active at Either Beginning or End of 1979

<u>Years Service</u>	<u>Beginning of Year</u>	<u>End of Year</u>
0	0	0
1	0	0
2	0	0
3	0	0
4	0	0
5 or more	34	34

Average Age: 41.8 years.

Average Service: 16.6 years.

ST. CLOUD POLICE RELIEF ASSOCIATION

Schedule 2(B)

Employees Active at Both Beginning & End of 1980

<u>Age Group Beg. Year</u>	<u>No.</u>	<u>Beginning Salary</u>	<u>Ending Salary</u>	<u>% Increase In Salary</u>
30-34	4	\$ 71,712	\$ 77,472	8.0%
35-39	8	143,424	154,944	8.0
40-44	10	179,280	193,680	8.0
45-49	6	107,568	116,208	8.0
50-54	2	35,856	38,736	8.0
55-59	<u>3</u>	<u>53,784</u>	<u>58,104</u>	8.0
TOTALS	33	\$591,624	\$639,144	8.0%

Employees Active at Either Beginning or End of 1980

<u>Years Service</u>	<u>Beginning of Year</u>	<u>End of Year</u>
0	0	0
1	0	0
2	0	0
3	0	0
4	0	0
5 or more	34	33

Average Age: 43.0 years.

Average Service: 17.8 years.

ST. CLOUD POLICE RELIEF ASSOCIATION

Schedule 3(A)

Separations From Active Service (Other Than Age & Service Retirement)
During 1979

<u>Age at Termination</u>	<u>Withdrawal</u>		<u>Disability</u>		<u>Death</u>	
	<u>Actual</u>	<u>Expected</u>	<u>Actual</u>	<u>Expected</u>	<u>Actual</u>	<u>Expected</u>
30-34		0.1		*		*
35-39		0.1		*		*
40-44		0.1		*		*
45-49				*		*
TOTALS	0	0.3	0	0.1	0	0.2

* Less than 0.1%

<u>Years Service at Termination</u>	<u>Actual</u>	<u>Expected</u>
0		
1		
2		
3		
4		
5 of more		0.3
TOTALS	0	0.3

Average age at separation: N/A

Average service at separation: N/A

ST. CLOUD POLICE RELIEF ASSOCIATION

Schedule 3(B)

Separations From Active Service (Other Than Age & Service Retirement)
During 1980

<u>Age at Termination</u>	<u>Withdrawal</u>		<u>Disability</u>		<u>Death</u>	
	<u>Actual</u>	<u>Expected</u>	<u>Actual</u>	<u>Expected</u>	<u>Actual</u>	<u>Expected</u>
30-34	1	0.1		*		*
35-39		0.1		*		*
40-44		0.1		*		*
45-49				*		*
TOTALS	1	0.3	0	0.1	0	0.2

* Less than 0.1%

<u>Years Service at Termination</u>	<u>Actual</u>	<u>Expected</u>
0		
1		
2		
3		
4		
5 of more	<u>1</u>	<u>0.3</u>
TOTALS	1	0.3

Average age at separation: 35.0 years.

Average service at separation: 12.3 years.

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Schedule 4

Separations From Active Service
For Age & Service Retirement

<u>Age at Termination</u>	1979		1980	
	<u>Actual</u>	<u>Expected</u>	<u>Actual</u>	<u>Expected</u>
56				2.0
57		1.0		
58	—	—	—	<u>1.0</u>
TOTALS	0	1.0	0	3.0

Average age at retirement during period examined: N/A

Average service at retirement during period examined: N/A

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Schedule 5

Death After Retirement
(Disability and Service Retirants)

Age at Death	1979		1980	
	<u>Actual</u>	<u>Expected</u>	<u>Actual</u>	<u>Expected</u>
40-44		0.0039		0.0043
50-54		0.0253		0.0132
55-59		0.0656		0.0856
60-64		0.1556		0.1034
65-69		0.0652		0.1091
70-74		0.1606		0.1318
75-79	<u>—</u>	<u>0.0680</u>	<u>—</u>	<u>0.1416</u>
TOTALS	0	0.5442	0	0.5890

Average age at death: N/A

Comments

Miscellaneous Gain

A portion of the miscellaneous gain shown on pages 4 and 5 are due to medical insurance premiums. In 1979 the gain was approximately \$5,000 and in 1980, approximately \$7,000.

Salary Loss

State law requires the use of the salary amounts effective in the year following the valuation. The actuarial valuation as of December 31, 1978 did not use this amount since it was not available. The salary loss for 1979 reflects the increase in salary for two years.

Plan Amendments

The plan amendments reflected in the actuarial valuation as of December 31, 1980 are:

	<u>Normal Cost</u>	<u>Payment on UAL</u>
1. Lump sum benefit of \$5,000 upon retirement after 20 years of service and age 55 or \$6,000 after 25 years of service and age 50	0.40%	\$ 3,400
2. Change in benefit to spouses from 18 units to 24 units	1.94	18,200

The payment on the Unfunded Accrued Liability reflects interest only.

APPENDICES

ST. CLOUD POLICE RELIEF ASSOCIATION

Valuation Methods and Assumptions

The Entry Age Normal Cost method was used to determine the normal cost of all benefits. Disability and death before retirement benefits were valued in previous valuations on a terminal funding basis (one year term cost).

The rate of investment return (interest) used in making the valuation was 5.0 percent per annum, compounded annually.

The mortality table used was the United States Life Table, 1959-61, White Males and White Females.

Sample Ages	Single Life Values: Present Value of \$1 Monthly				Future Life Expectancy (Years)	
	Level For Life		Increasing 3.5% Yearly		Men	Women
	Men	Women	Men	Women		
	45	\$169.61	\$186.84	\$263.23	\$304.86	27.33
50	154.85	174.20	229.51	270.80	23.22	28.08
55	139.29	159.62	197.24	236.11	19.45	23.81
60	122.79	142.73	166.26	200.76	16.01	19.69
65	106.31	124.22	137.82	166.16	12.97	15.88
70	89.86	104.31	111.71	132.82	10.29	12.38
75	73.39	83.92	87.66	101.94	7.92	9.28
80	57.54	64.24	66.29	74.77	5.89	6.67

Age & service retirement was assumed to occur at age 56, or attained age if older.

Sample Rates of Separation From Active Employment Before Retirement, Death or Disability

Sample Ages	% of Active Members Separating Within Next Year
20	3.00%
25	2.50
30	2.00
35	1.50
40	1.00
45	0.50
50+	0.00

Sample Pay Adjustment Factors used to Project Current Pays

<u>Sample Ages</u>	<u>Present Pay Resulting in Pay of \$1,000 at Age 60</u>	<u>Percent Increase in Pay During Next Year</u>
20	\$ 253	3.5%
25	300	3.5
30	356	3.5
35	423	3.5
40	503	3.5
45	597	3.5
50	709	3.5
55	842	3.5
60	1,000	3.5

Disability retirements were assumed to occur as indicated below:

<u>Sample Ages</u>	<u>% of Active Members Becoming Disabled Within Next Year</u>
20	0.08%
25	0.08
30	0.08
35	0.08
40	0.20
45	0.26
50	0.49
55	0.89

St. Cloud Police Relief Association

Brief Summary (12/31/80) of Benefit Provisions Evaluated and/or Considered

Age & Service Benefits

Eligibility. 20 years of service and 50 years of age.

Amount. For first 20 years of service, 35/75 of base pay. For each year of service in excess of 20 an additional 1/75 is added up to a maximum of 42/75 of base pay for 27 or more years of service.

Pay Used For Plan Purposes. "Base pay" means the salary of a first class patrolman.

Disability

Eligibility. Permanently disabled to the extent that unable to perform duties of police officer before being eligible for age & service retirement.

Amount. 36/75 of base pay.

Member's Death While Active, Or In Deferred Status, Or Retired

Eligibility.

Spouse. Legally married to member at least one year before separation from service and residing with member at time of death. Benefits terminate upon remarriage.

Child. Younger than age 18.

Amount.

Spouse. 24/75 of base pay.

Child. 6/75 of base pay per child. Children's maximum is 12/75 if spouse is receiving or 36/75 if no spouse is receiving.

Vested Deferred. 20 years of service and separated before age 50. Maximum benefit of 40/75 of base pay. Payment beginning is deferred to attainment of age 50.

Post Retirement Adjustment. Each time base pay is changed, payments to all benefit recipients are simultaneously changed by the same percent that base pay is changed.

Member Contributions. 8.25% of base pay. 75% of total member contributions is refundable, without interest, if no monthly benefit is payable upon separation from service.

Medical Insurance Coverage. \$43.78 per month for retirants up to age 65 if they are single or \$138.12 per month if they require family coverage.

Lump Sum Payment At Retirement. \$5,000 after 20 years service and age 50 or \$6,000 after 25 years service and age 50.