

The Report of the
GAIN/LOSS ANALYSIS OF FINANCIAL EXPERIENCE
During calendar 1979 and 1980
CITY OF NEW ULM
POLICE RELIEF ASSOCIATION
New Ulm, Minnesota

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GABRIEL, ROEDER, SMITH & COMPANY

ACTUARIES & CONSULTANTS

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June 5, 1981

City of New Ulm
Police Relief Association
New Ulm, Minnesota

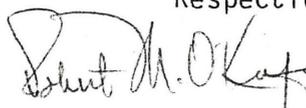
Submitted in this report are the results of the 1979-80 gain/loss analysis of the financial experiences of the New Ulm Police Relief Association.

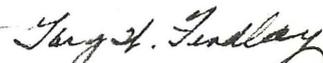
The composite results of this study are reported on Schedules 1(A) and 1(B) and comments regarding the results are on page 12.

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

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.

NEW ULM POLICE RELIEF ASSOCIATION

Schedule 1(A)

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

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>	\$ 0	\$ N/A	N/A	\$ 0
<u>Disability & Death-in-Service</u>				
a. <u>Disability</u>	(2.86)	N/A	N/A	(0.18)
b. <u>Death-in Service</u>	(12.09)	N/A	N/A	(0.77)
<u>Withdrawal</u>	4.90	N/A	N/A	0.31
<u>Salary Increases</u>	117.15	15.51	N/A	8.42
<u>Investment Income</u>	(4.78)	(14.55)	N/A	(1.23)
<u>Post Retirement Mortality</u>	N/A	24.97	N/A	1.59
<u>Contributions</u>	(0.75)	(0.88)	N/A	(0.10)
<u>Miscellaneous</u>	(63.26)	(15.60)	N/A	(5.01)
EXPERIENCE RELATED (GAIN)/LOSS & CORRESPONDING CHANGE IN CONTRIBUTION REQUIREMENTS	\$ 38.31	\$ 9.45	N/A	\$3.03
<u>Changes due to plan amendments</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
TOTAL (GAIN)/LOSS DURING YEAR	<u>\$ 38.31</u>	<u>\$ 9.45</u>	<u>N/A</u>	<u>\$3.03</u>

NEW ULM POLICE RELIEF ASSOCIATION

Schedule 1(B)

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

<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>	\$ 0	\$ N/A	0.89%	\$ 0
<u>Disability & Death-in-Service</u>				
a. <u>Disability</u>	(3.20)	N/A	0.01	(0.21)
b. <u>Death-in Service</u>	(3.04)	N/A	0.81	(0.20)
<u>Withdrawal</u>	5.93	N/A	0.03	0.38
<u>Salary Increases</u>	13.78	19.22	N/A	2.13
<u>Investment Income</u>	(3.79)	(16.72)	N/A	(1.32)
<u>Post Retirement Mortality</u>	N/A	(18.98)	N/A	(1.22)
<u>Contributions</u>	(3.33)	(3.68)	N/A	(0.45)
<u>Miscellaneous</u>	<u>18.72</u>	<u>0.60</u>	<u>N/A</u>	<u>1.25</u>
EXPERIENCE RELATED (GAIN)/LOSS & CORRESPONDING CHANGE IN CONTRIBUTION REQUIREMENTS	\$ 25.07	\$(19.56)	1.74%	\$0.36
<u>Conversion to UAL Amortization</u>	N/A	N/A	N/A	N/A
<u>Change in Funding Method For Death & Disability</u>	70.80	N/A	0.01	4.56
<u>Changes due to plan amendments</u>	<u>14.00</u>	<u>0</u>	<u>0.32</u>	<u>0.90</u>
TOTAL (GAIN)/LOSS DURING YEAR	<u>\$109.87</u>	<u>\$(19.56)</u>	<u>2.07%</u>	<u>\$5.82</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	3	\$ 43,934	\$ 49,104	11.8%
35-39	4	59,204	66,142	11.7
40-44	4	62,962	71,197	13.1
45-49	1	15,276	17,043	11.6
50-54	<u>1</u>	<u>14,143</u>	<u>15,831</u>	11.9
TOTALS	13	\$195,519	\$219,317	12.2%

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	13	13

Average Age: 40.5 years.

Average Service: 13.8 years.

NEW ULM 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	1	\$ 17,043	\$ 17,855	4.8%
35-39	6	98,203	103,272	5.2
40-44	4	71,197	74,455	4.6
45-49	1	17,043	17,855	4.8
50-54	<u>1</u>	<u>15,831</u>	<u>16,643</u>	5.1
TOTALS	13	\$219,317	\$230,080	4.9%

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	13	13

Average Age: 41.5 years.

Average Service: 14.8 years.

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Schedule 3(A)

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

Age at Termination	Withdrawal		Disability		Death	
	<u>Actual</u>	<u>Expected</u>	<u>Actual</u>	<u>Expected</u>	<u>Actual</u>	<u>Expected</u>
30-34						*
35-39		0.1				*
40-44						*
45-49						*
50-54						*
TOTALS	0	0.1	0	0.0	0	0.1

* Less than 0.1%

Years Service at Termination	<u>Actual</u>	<u>Expected</u>
0		
1		
2		
3		
4		
5 or more		0.1
TOTALS	0	0.1

Average age at separation: N/A.

Average service at separation: N/A.

NEW ULM POLICE RELIEF ASSOCIATION

Schedule 3(B)

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

Age at Termination	Withdrawal		Disability		Death	
	<u>Actual</u>	<u>Expected</u>	<u>Actual</u>	<u>Expected</u>	<u>Actual</u>	<u>Expected</u>
30-34						*
35-39		0.1				*
40-44						*
45-49						*
50-54						*
TOTALS	0	0.1	0	0.0	0	0.1

* Less than 0.1%

Years Service at Termination	<u>Actual</u>	<u>Expected</u>
0		
1		
2		
3		
4		
5 or more	—	<u>0.1</u>
TOTALS	0	0.1

Average age at separation: N/A.

Average service at separation: N/A.

NEW ULM POLICE RELIEF ASSOCIATION

Schedule 4

Separations From Active Service
For Age & Service Retirement

<u>Age at Termination</u>	<u>1979</u>		<u>1980</u>	
	<u>Actual</u>	<u>Expected</u>	<u>Actual</u>	<u>Expected</u>
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				
61				
62				
63				
64				
65 & Over	<u> </u>	<u> </u>	<u> </u>	<u> </u>
TOTALS	0	0.0	0	0.0

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>
50-54		0.0212		0.0232
60-64		0.0258		0.0280
70-74		0.0543		0.0584
75-79		0.1416		0.1530
80-84	—	<u>0.2367</u>	—	<u>0.2566</u>
TOTALS	0	0.4796	0	0.5192

Average age at death: N/A.

Comments

Miscellaneous Gains & Losses

The net miscellaneous gain or loss evolved from two sources. The normal flow of the fund from year to year could not be developed from the asset information provided. This produced a miscellaneous gain of approximately \$134,000 and \$6,000 in 1979 and 1980, respectively.

The other source for the miscellaneous losses under Active Members arises from the difficulty of calculating the gain and loss by source for the age and service benefits provided. The age and service benefits is the greater of 50% of final salary with a minimum of 40% of salary of the highest salaried patrolman.

APPENDICES

NEW ULM 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		Increasing		Men	Women
	For Life		3.5% Yearly			
	Men	Women	Men	Women		
45	\$169.61	\$186.84	\$263.23	\$304.86	27.33	32.52
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

New Ulm Police Relief Association

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

Age & Service Retirement

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

Amount. 50% of final years salary with minimum of 40% of salary of highest salaried patrolman. For each of the first 3 years beyond 20 years of service an additional 1/2% of final years salary is added to the benefit. (The additional benefit is not subject to the post retirement adjustment provisions.)

Disability Retirement

Eligibility. Disabled to the extent that no longer able to perform the duties of police officer before being eligible for age & service retirement.

Amount. Same as age & service retirement benefit.

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

Eligibility.

Spouse. Legally married at time of separation from service.

Benefits terminate upon remarriage.

Child. Younger than age 18.

Amount.

Spouse. 40% of salary of highest salaried patrolman.

Child. \$300 per year per child. If no spouse benefit is payable, children receive spouse benefit in lieu of \$300 each per year.

Vested Deferred. 20 years of service and separated before age 50. Payment beginning is deferred to attainment of age 50.

Post Retirement Adjustments ("Escalator"). Benefits which are based on a percentage of the prevailing pay of the highest salaried patrolmen are changed at the same time and by the same percent as changes in the salary of active

highest salaried patrolmen. (Children's benefits are not escalated unless spouse is not receiving benefits.)

Member Contributions. 8% of compensation. Total member contributions are refundable, without interest, if no monthly benefit is payable upon separation from service.