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The Report of the
GAIN/LOSS ANALYSIS OF FINANCIAL EXPERIENCE
During calendar 1979 and 1980
CITY OF ALBERT LEA
POLICE RELIEF ASSOCIATION
Albert Lea, Minnesota

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GABRIEL, ROEDER, SMITH & COMPANY
CONSULTING ACTUARIES

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ACTUARIES & CONSULTANTS

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April 22, 1981

City of Albert Lea
Police Relief Association
Albert Lea, Minnesota

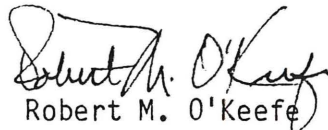
Submitted in this report are the results of the 1979-80 gain/loss analysis of the financial experiences of the City of Albert Lea Police Relief Association.

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.

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 casualty 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.

ALBERT LEA 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	Retirants &	Normal Cost	\$ Payment
	Members	Beneficiaries	% of Payroll	on UAL
	(\$ in 1,000)		(\$ in 1,000)	
<u>Age & Service Retirements</u>	\$ 0	\$ N/A	N.C.%	\$ 0
<u>Disability & Death-in-Service</u>				
a. <u>Disability</u>	162.0	N/A	N.C.	7.9
b. <u>Death-in Service</u>	(4.2)	N/A	N.C.	(0.2)
<u>Withdrawal</u>	(21.0)	N/A	N.C.	(1.0)
<u>Salary Increases</u>	69.4	54.1	N.C.	6.0
<u>Investment Income</u>	(3.3)	(13.5)	N.C.	(0.8)
<u>Post Retirement Mortality</u>	N/A	(7.3)	N/A	(0.4)
<u>Contributions</u>	(0.8)	(0.9)		(0.1)
<u>Miscellaneous</u>	<u>2.0</u>	<u>(117.0)</u>	<u>N.C.</u>	<u>(5.6)</u>
EXPERIENCE RELATED (GAIN)/LOSS & CORRESPONDING CHANGE IN CONTRIBUTION REQUIREMENTS	\$204.1	\$(84.6)	N.C.%	\$5.8
<u>Changes due to plan amendments</u>	<u>0</u>	<u>0</u>	<u>N.C.</u>	<u>0</u>
TOTAL (GAIN)/LOSS DURING YEAR	<u>\$204.1</u>	<u>\$(84.6)</u>	<u>N.C.%</u>	<u>\$5.8</u>

ALBERT LEA 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	Retirants &	Normal Cost	\$ Payment
	Members	Beneficiaries	% of Payroll	on UAL
	(\$ in 1,000)		(\$ in 1,000)	
<u>Age & Service Retirements</u>	\$ 0	\$ N/A	(0.06)%	\$ 0
<u>Disability & Death-in-Service</u>				
a. <u>Disability</u>	(8.6)	N/A	(0.25)	(0.4)
b. <u>Death-in Service</u>	(4.2)	N/A	0.40	(0.2)
<u>Withdrawal</u>	9.4	N/A	0.14	0.5
<u>Salary Increases</u>	103.9	57.0	--	7.8
<u>Investment Income</u>	(9.2)	(46.7)	--	(2.7)
<u>Post Retirement Mortality</u>	N/A	7.9	N/A	0.4
<u>Contributions</u>	29.2	30.3	--	2.9
<u>Miscellaneous</u>	<u>0.4</u>	<u>16.7</u>	<u>0.00</u>	<u>0.8</u>
EXPERIENCE RELATED (GAIN)/LOSS & CORRESPONDING CHANGE IN CONTRIBUTION REQUIREMENTS	\$120.9	\$65.2	0.23	\$ 9.1
<u>Conversion to UAL Amortization</u>	--	--	N/A	29.2
<u>Change in Funding Method For Death & Disability</u>	118.8	N/A	0.15	5.8
<u>Changes due to plan amendments</u>	<u>29.1</u>	<u>0</u>	<u>0.79</u>	<u>1.4</u>
TOTAL (GAIN)/LOSS DURING YEAR	<u>\$268.8</u>	<u>\$65.2</u>	<u>1.17%</u>	<u>\$45.5</u>

ALBERT LEA POLICE RELIEF ASSOCIATION

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>
20-24	2	\$ 32,614	\$ 35,568	9.1%
25-29	2	32,614	35,568	9.1
30-34	7	116,035	124,696	7.5
35-39	5	88,456	99,755	12.8
40-44	5	85,314	90,334	5.9
45-49	2	32,607	35,568	9.1
50-54	<u>2</u>	<u>34,486</u>	<u>36,774</u>	6.6
TOTALS	25	\$422,126	\$458,263	8.6%

Employees Active at Either Beginning or End of 1979

<u>Years Service</u>	<u>Beginning of Year</u>	<u>End of Year</u>
0	1	
1	1	3
2	2	1
3	1	1
4	1	1
5 or more	22	21

Average Age: 37.0 years.

Average Service: 10.6 years.

ALBERT LEA 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>
20-24	2	\$ 35,568	\$ 38,772	9.0%
25-29	4	71,136	77,544	9.0
30-34	6	109,479	122,629	12.0
35-39	6	107,423	123,531	15.0
40-44	6	119,048	138,486	16.3
45-49	2	35,568	38,772	9.0
50-54	<u>2</u>	<u>36,774</u>	<u>41,995</u>	14.2
TOTALS	28	\$514,996	\$581,729	13.0%

Employees Active at Either Beginning or End of 1980

<u>Years Service</u>	<u>Beginning of Year</u>	<u>End of Year</u>
0	1	
1	3	2
2	1	3
3	2	1
4		2
5. or more	21	21

Average Age: 37.2 years.

Average Service: 10.9 years.

ALBERT LEA 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>
25-29	1	0.1		*		*
30-34		0.1		*		*
35-39	1	0.1		*		*
40-44	—	<u>0.1</u>	<u>1</u>	<u>*</u>	—	<u>0.1</u>
TOTALS	2	0.4	1	0.0	0	0.1

* Less than 0.1%

<u>Years Service at Termination</u>	<u>Actual</u>	<u>Expected</u>
0		0.1
1		
2		
3	1	
4		
5 of more	<u>1</u>	<u>0.3</u>
TOTALS	2	0.4

Average age at separation: 31.5 years.

Average service at separation: 5.5 years.

ALBERT LEA 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>
25-29		0.1		*		*
30-34		0.1		*		*
35-39		0.1		0.1		0.1
40-44	—	<u>0.1</u>	—	<u>*</u>	—	<u>*</u>
TOTALS	0	0.4	0	0.1	0	0.1

* Less than 0.1%

<u>Years Service at Termination</u>	<u>Actual</u>	<u>Expected</u>
0		0.1
1		0.1
2		
3		
4		
5 of more	—	<u>0.2</u>
TOTALS	0	0.4

Average age at separation: N/A

Average service at separation: N/A

ALBERT LEA 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

Average age at retirement during period examined: N/A

Average service at retirement during period examined: N/A

ALBERT LEA POLICE RELIEF ASSOCIATION

Schedule 5

- Death After Retirement
(Disability and Service Retirants)

<u>Age at Death</u>	<u>1979</u>		<u>1980</u>	
	<u>Actual</u>	<u>Expected</u>	<u>Actual</u>	<u>Expected</u>
35-39		0.0065		
40-44				0.0072
45-49		0.0059		0.0065
50-54		0.0242		0.0264
60-64		0.0734		0.0798
65-69	—	<u>0.0734</u>	—	<u>0.0790</u>
TOTALS	0	0.1834	0	0.1989

Average age at death: N/A

Comments

The miscellaneous gain shown in calendar year 1979 under Retirants and Beneficiaries was due to the valuation of benefits payable to five retirants who retired prior to December 31, 1970. The 1978 valuation treated these benefits as escalating benefits.

The miscellaneous loss shown for calendar year 1980 was due to a difference in the assets reported year end 1979 and the beginning of 1980. Assets were reported to be \$1,022,668 as of December 31, 1979 and \$1,005,956 for January 1, 1980.

APPENDICES

ALBERT LEA 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			
	For Life		3.5% Yearly			
	Men	Women	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 58, 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

Albert Lea 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 compensation.

Disability Retirement

Eligibility. Disabled to the extent that cannot perform duties of police officer for period exceeding 30 days, prior to being eligible for age and service retirement.

Amount. Same as regular retirement.

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

Eligibility.

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

Child. younger than age 18.

Amount.

Spouse. 30% of final compensation.

Child. 10% of final compensation per child. Children's maximum is 20% if spouse is receiving or 50% if no spouse is receiving.

Vested Deferred.

-20 or more years service and separated before age 50. Benefit beginning is deferred to attainment of age 50.

-10 or more years service but less than 20 years service and separated before age 57. Benefit of 2 1/2% of final compensation times years service is deferred to attainment of age 57.

Post Retirement Adjustment ("Escalator"). Percentage applied to final compensation to determine benefit (retirant, 50%; surviving spouse, 30%; child, 10%) is applied to changes in pay of top grade patrolman to determine amount of adjustment.

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