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MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION

Final Report of Actuarial Valuation as of December 31, 1977

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March 27, 1978

Board of Trustees
Minneapolis Teachers Retirement
Fund Association
Northwestern Bank Building
Minneapolis, Minnesota 55402

Gentlemen:

We are pleased to submit the final results of our actuarial valuation of the Minneapolis Teachers Retirement Fund as of December 31, 1977. The valuation was performed on the basis of employee data which was not audited by us and of data and financial information provided by the Executive Secretary of the Fund.

Objectives

The principal objectives of the valuation may be summarized as follows:

- 1. Prepare information in accordance with Minnesota Statutes, Section 356.21 (refer to page No. 1 of this Report for additional detail of methods used).
- 2. Summarize the actuarial status of the Fund.
- 3. Analyze the experience of the Fund.

Summary of Findings

The results of our valuation may be summarized as follows:

- 1. Contribution levels have been computed under 5% interest and 3½% salary increase assumptions, as required by statute.
- 2. The employer's normal cost for the year is 5.35% of payrol1.
- 3. The necessary contribution to meet normal cost, and prevent the unfunded accrued liability (deficit) from increasing is 17.77% of payroll, compared to 16.30% shown in the December 31, 1976 valuation.
- 4. Assets of the Fund are in excess of the present value of benefits for current retirees.

These results reflect the effect of using the Entry Age Normal Cost Method for valuation of disability, death and withdrawal benefits instead of the One Year Term Cost Method which was used in prior years.

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Based on the above mentioned data and information, our interpretation of plan provisions and the valuation method and assumptions set forth in this report, we hereby certify that the summaries on the following pages represent the results of the valuation.

We look forward to discussing our valuation in detail with you.

PEAT, MARWICK, MITCHELL & CO.

Avner Haya, F.S.A., M.A.A.A.

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PART I.

VALUATION METHODS AND ASSUMPTIONS

METHODS USED IN VALUATION

GENERAL

Actuarial liabilities for retirement and other benefits are shown in Exhibit I. Employer contribution levels are presented in Exhibit II.

ANNUITIES IN FORCE

Annuities in force as of December 31, 1977 were summarized by the Association, showing for each type of annuity, the option chosen, attained age of annuitant or beneficiary, and the annual amount of annuity payable. The present value of these annuities was determined according to the 1971 Group Annuity Mortality Table with projection to 1975. For males, the male rates with age setback of one year were used. For females, the male rates with an age setback of seven years were used.

DEFERRED ANNUITANTS

Summaries of all deferred annuitants were prepared by the Association showing, by attained age, the years of service and accumulated deposits for each such annuitant. It was assumed that future benefits would be the amount purchased by 200% of member's deposits, plus a life annuity starting at age 64 equal to the greater of:

- 1. \$4 per month per year of service; or
- 2. 200% of the accumulated City/State deposits.

ACCRUED LIABILITY -- ACTIVE TEACHERS

In the valuation performed as of December 31, 1977, the Entry Age Normal Cost Method was used for valuation of age pension benefits as well as ancillary benefits. In the prior valuations, the Entry Age Normal Method was used for age pension benefits but the One Year Term Cost Method was used to value disability, death and withdrawal benefits. The effect of this change is illustrated in Exhibits I, II and VI of this report.

For purposes of this survey, it was assumed that all retirements take place at age 64 under the formula Plan. The plan provides a life annuity of 2.25% of the highest consecutive 5-year average salary, times years of teaching service to a maximum of 30 years.

SUMMARY OF ACTUARIAL ASSUMPTIONS

	December 31, 1977	
Interest	5%	
Turnover	2/3 of the 1970 experien for smoothness:	ce, graduated
	Attained Age	Turnover Rate
	20 30 40 50 60	.200 .133 .028 .017 .002
Retirement Age	The later of age 64 or a the valuation date	ttained age on
Salary Scale Annual Increase	3½%	
Mortality	The 1971 Group Annuity M projection to 1975 by So male rates were used wit year. For females, the with age setback seven y	ale D. For males the h age setback one male rates were used
Valuation Assets	For valuation purposes a at cost and include effe write-up of \$1,911,326 a Article IX Subsection (1 of Incorporation with am 1975.	ect of cumulative as provided in 5), of the Articles
Disabl e ment	1955 UAW rates of disabl	

ANALYSIS OF ACTUARIAL ASSUMPTIONS

Shown below is the description of the basis for each principal assumption summarized on the previous page.

INTEREST

In 1977, the Fund's earning rates were as follows:

- 1. Excluding realized and unrealized capital gains and losses: 6.386%
- 2. Including realized capital gains and losses: 6.878%

Over the last five years, the averages of the Fund's annual earning rates were as follows:

- 1. Excluding realized and unrealized capital gains and losses: 5.478%
- 2. Including realized capital gains and
 losses: 5.651%

RETIREMENT AGE

Over the last several years, the average retirement age has approximated age 64, with the exception of 1975 and 1976 when the average retirement age was 63 and 1977 when the average was 62. If this trend continues for an additional year the assumed retirement age may have to be lowered in next year's valuation. This year's costs were calculated with an assumed retirement age of 64.

TURNOVER

Turnover rates corresponding to 2/3 of the turnover rates experienced by the Fund in 1970 were used in this year's valuation. During 1977, actual turnover rates were approximately 35% lower than the assumed rates.

UNREALIZED APPRECIATION

Cost plus a cumulative write-up of \$1,911,326 was used for purposes of the actuarial valuation.

Over the last nine years, unrealized appreciation on stocks has decreased from \$15,750,295 on December 31, 1968 to \$8,510,195 on December 31, 1977.

SALARY SCALE

A $3\frac{1}{2}\%$ annual salary scale assumption was used. At the end of 1977, the overall average salary was \$17,661 compared to \$15,361 at the end of 1976 representing a 15.0% increase. Average salaries have increased approximately 9.775% a year since 1973, and approximately 8.0% a year since 1972.

MORTALITY

For active and retired lives, the 1971 Group Annuity Mortality Table with projection to 1975 was used. (Male Table for males; the mortality rates for females are equal to those for males six years younger.) To account for teacher mortality which is expected to be less than the average group mortality, an additional one year setback was used.

DEFINITIONS OF TERMS

NORMAL COST

Level cost, to provide for all benefits, expressed as a percentage of payroll, payable from each member's entry age to date of retirement or termination.

ACCRUED LIABILITY

The accumulation of prior Normal Costs which became due each year (theoretically) for each member since his entry date.

UNFUNDED ACCRUED LIABILITY

The portion of the Accrued Liability not covered by assets of the Fund.

ENTRY AGE NORMAL

A method for funding future benefits, using the Normal Cost and Accrued Liability defined above.

SUMMARY OF COSTS AS OF DECEMBER 31, 1977

		Basi		Basis B*		
		5% Inter		5% Inter		
		2/3 of 197	Accrued	2/3 of 197	Accrued	
		Normal Cost	<u>Liability</u>	Normal Cost	Liability	
1.	Active Members					
	Retirement benefits Disability benefits	\$5,865,660 863,133	\$140,457,876 13,512,105	\$ 5,865,660 743,102	\$140,457,876 0	
Refunds due to death or withdrawal		2,213,139	15,889,868	3,520,182	0	
2.	Deferred Annuitants and Former Members Without					
	Vested Rights	0	1,361,005	0	1,361,005	
3.	Annuitants	0	102,525,982	0	102,525,982	
4.	Total	\$8,941,932	\$273,746,836	\$10,128,944	\$244,344,863	
5.	Member deposits $(8\frac{1}{2}\%)$ of					
	Compensation)	5,486,831		5,486,831		
6.	Employer normal cost	\$ 3, 455,101		\$ 4,642,113		
7.	Valuation assets		\$116,851,087		\$116,851,087	
8.	Unfunded accrued liability		\$156,895,749		<u>\$127,493,776</u>	
	Total Payroll		\$ 64,550,950		\$ 64,550,950	

^{*}Basis A: Entry Age Normal Cost Method for disability, death and withdrawal benefits.

Basis B: One Year Term Cost Method for disability, death and withdrawal benefits, and was determined in a manner consistent with the prior valuation.

MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION SUMMARY OF CONTRIBUTION LEVELS FOR TWO YEARS

	Basis A*	Basis B*		
	December 31, 1977	December 31, 1976	December 31, 1977	
Employer normal cost Percentage of payroll Unfunded accrued liability	\$ 3,455,101	\$ 3,611,222	\$ 4,642,113	
	5.35%	6.55%	7.19%	
	156,895,749	103,944,165	127,493,776	
Employer contribution required to meet normal cost and amortize unfunded accrued liability by December 31, 1997 assuming payment at the beginning of the plan year Percentage of payroll	15,109,632	11,131,880	14,112,607	
	23.41%	20.19%	21.86%	
Employer contribution required to meet normal cost and prevent unfunded accrued liability from increasing, assuming payment at the end of the plan year Percentage of payroll	11,472,644	8,988,991	11,248,907	
	17.77%	16.30%	17.43%	
Administrative expense	334,989	306,776	334,989	
Percentage of payroll	.52%	.5 6 %	.52%	
Employer contribution required to meet normal cost and administrative expense and amortize unfunded accrued liability by December 31, 1997 assuming payment at the beginning of the plan year Percentage of payroll	15,444,621	11,438,656	14,447,596	
	23.93%	20.75%	22.38%	
Employer contribution required to meet normal cost and administrative expense and prevent unfunded accrued liability from increasing, assuming payment at the end of the plan year Percentage of payroll	11,807,633 18.29%	9,295,767 16.86%	11,583,896 17.95%	

^{*}Basis A: Entry Age Normal Cost Method for disability, death and withdrawal benefits for 1977 benefits only.

Basis B: One Year Term Cost Method for disability, death and withdrawal benefits, determined in a consistent manner for both years.

EXHIBIT III

MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION

COMPARISON OF CONTRIBUTIONS WITH TOTAL INCOME FROM GOVERNMENTAL UNITS

Employer contribution as of December 31, 1977 to meet normal cost and administrative expense and prevent unfunded accrued liability from increasing	\$11,807,633				
Percentage of payroll on December 31, 1977					
Contributions to Fund other than employee contributions during 1977					
State and City contributionsapproximately 6½% of payroll	\$ 4,375,122				
Required tax revenue, net of \$419,339 applied to certain retirement benefit increases under Sections 8, 9, and 14					
granted after retirement	<u>\$ 1,981,860</u>				
Total contribution during 1977	\$ 6,356,982				
Percentage of payroll on December 31, 1977					

SUMMARY OF ANNUITIES IN FORCE ON DECEMBER 31, 1977

				serve Fund		Reserve Fund	Tot	tal
Option	Annuity Plan	Number of Annuitants	Annual <u>Amount</u>	Reserve	Annua 1 <u>Amoun t</u>	Reserve	Annual <u>Amount</u>	Reserve
1	Life	1,279	\$1,542,003	\$13,488,961	\$3,949,284	\$37,830,782	\$5,491,287	\$51,319,743
2	Life, 15 year guarantee	497	712,269	7,996,631	1,519,441	18,684,116	2,231,710	.26,680,747
3	Survivorship (50%)	85	179,036	1,978,854	450,819	5,408,241	629,855	7,387,095
4	Annuities Certain	72	99,502	913,115	238,542	2,433,559	338,044	3,346,674
5	Life, 3 year guarantee	85	196,690	2,399,301	371,925	5,080,096	568,615	7,479,397
6	Survivorship (75%)	36	99,232	1,252,082	258,954	3,540,851	358,186	4,792,933
7	Survivorship (100%)	45	85 , 945	1,165,623	190,049	2,801,665	275,994	3,967,288
8	Death Benefit	13	12,127	169,828	44,647	672,934	56,774	842,762
9	Disability	43	43,986	572,018	186,715	2,534,966	230,701	3,106,984
Totals		2,155	\$2,970,790	\$29,936,413	\$7,210,376	\$78,987,210	\$10,181,166	\$108,923,623
increase as-you-	ction 8, 9 and 14 es (financed on a pay go basis)	· -			419,339	4,486,315*	419,339	4,486,315*
	cti on 15 increa ses ed on a pay-a s-you-go				178,653*	1,911,326	178,653*	1,911,326
Grand To	otal	<u>2,155</u>	\$2,970,790	\$29,936,413	\$6,612,384	\$72,589,569	\$ 9,583,174	\$102,525,982

^{*}Approximate figure

ASSETS AND CURRENT LIABILITIES AS OF DECEMBER 31, 1976 AND 1977

ASSETS (COST BASIS)	12/31/76	12/31/77
Cash Stock dividends receivable Accrued interest on investments Bonds, mortgages and equities	\$ 2,525,963 250,844 829,941	\$ 1,526,068 366,988 953,056
(including real estate) Due from affiliate Accounts receivable - state tax	103,894,568* 1,982,492	112,990,877** 2,482,492
revenues Miscellaneous receivables	341,996 <u>425</u>	672,743 425
TOTAL	\$109,826,229	\$118,992,649
CURRENT LIABILITIES		
Claims payable Accounts payable Deferred premiums on written options	\$ 53,154 17,228	\$ 74,406 34,370 121,460
SUB-TOTAL	70,382	230,236
Reserve for Section 15 increases	1,911,326	1,911,326
Balance available for future funding	107,844,521	116,851,087
TOTAL	\$109,826,229	<u>\$118,992,649</u>

^{*} Includes effect of a cumulative write-up of \$1,911,326.

^{**} Includes effect of a cumulative write-up of \$1,911,326 and a write-down of \$230,000 in 1977.

SUMMARY OF ACTUARIAL GAINS AND LOSSES AS OF DECEMBER 31, 1977

(a)	Actual unfunded accrued liability as	
` '	of December 31, 1976	\$103,944,165
(b)	Normal cost as of December 31, 1976	8,297,481
(c)	Interest at 5% on (a) and (b)	5,612,082
(d)	Employee contribution during 1977	5,685,677
(e)	Employer contribution during 1977	6,356,982
(f)	Estimated interest on (d) and (e)	301,066
(g)	Expected unfunded accrued liability as of December 31, 1977 (before the effect of changes in actuarial cost method) = (a) + (b) + (c) - (d) - (e) - (f)	\$105,510,003
(h)	Actual unfunded accrued liability as of December 31, 1977 (before the effect of changes in actuarial cost methods)	\$127,493,776
(i)	Actuarial gain (loss) before the effect of changes in actuarial cost method = (g) - (h)	(\$21,983,773)
(j)	Increase in accrued liability due to change in actuarial cost method for disability, death and withdrawal benefits	\$ 29,401,973
(k)	Unfunded accrued liability as of December 31, 1977 (h) + (j)	\$156,895,749

COVERED EARNINGS OF ACTIVE PARTICIPANTS INCLUDED IN DECEMBER 31, 1977 VALUATION. DISTRIBUTION BY SEX AND SERVICE GROUP*

	MA LE			FEMALE			TOTAL		
	Number	Total	Average	Number	Total	Average	Number	Total	Average
Service	of Par-	Annua1	Annua1	of Par-	Annua1	Annua1	of Par-	Annual	Annua1
Group	ticipants	Earnings	Earnings	ticipants	<u>Earnings</u>	<u>Earnings</u>	ticipants	<u>Earnings</u>	<u>Earnings</u>
0	1	\$ 5,172	\$ 5,172	1	\$ 339	\$ 339	2	\$ 5,511	\$ 2,756
1	98	903,456	9,219	344	2,755,287	8,010	442	3,658,743	8,278
2	26	342,352	13,167	98	1,143,286	11,666	124	1,485,638	11,981
3	30	451,048	15,035	88	1,042,721	11,849	118	1,493,769	12,659
4	40	638,952	15,974	91	1,138,632	12,512	131	1,777,584	13,569
0 - 4	195	2,340,980	12,005	622	6,080,265	9,775	817	8,421,245	10,308
5 - 9	383	6,999,769	18,276	760	10,891,791	14,331	1,143	17,891,560	15,653
10 - 14	330	7,440,515	22,547	346	6,163,282	17,813	676	13,603,797	20,124
15 - 19	192	4,924,370	25,648	195	4,066,906	20,856	387	8,991,276	23,233
20 - 24	240	6,316,172	26,317	145	3,026,010	20,869	385	9,342,182	24,265
25 - 29	134	3,717,954	27,746	7 9	1,769,381	22,397	213	5,487,335	25,762
30 - 34	8	196,552	24,569	22	525,005	23,864	30	721,557	24,052
35 - 39	1	29,987	29,987	0	0	0	1	29 , 987	29,987
40 +	0	0	0	3	62,011	20,670	3	62,011	20,670
Total	1,483	\$31,966,299	\$21,555	2,172	\$32,584,651	\$15,002	3,655	\$64,550,950	\$17,661

^{*}Excludes 162 participants, included in the valuation, but for whom data was incomplete.

COVERED EARNINGS OF ACTIVE PARTICIPANTS INCLUDED IN DECEMBER 31, 1977 VALUATION. DISTRIBUTION BY SEX AND AGE GROUPS*

		MALE		-	FEMA LE			TOTAL	
	Number	Total	Average	Number	Total	Average	Number	Total	Average
Age	of Par-	Annua 1	Annua1	of Par-	A nnual	Annua 1	of Par-	Annual	Annua1
Group	<u>ticipants</u>	<u>Earnings</u>	<u>Earnings</u>	<u>ticipants</u>	Earnings	<u>Earnings</u>	<u>ticipants</u>	<u>Earnings</u>	Earnings
0 - 19	0	\$ 0	\$ 0	0	\$ 0	\$ 0	0	\$ 0	\$ 0
20 - 24	11	58 , 714	5 , 338	63	397,129	6 , 304	74	455,843	6,160
25 - 29	119	1,312,881	11,033	365	3,797,696	10,405	484	5,110,577	10,559
30 - 34	275	4,401,598	16,006	510	6,531,747	12,807	785	10,933,345	13,928
35 - 39	240	4,999,161	20,830	279	4,360,723	15,630	519	9,359,884	18,034
40 - 44	213	5,172,134	24,282	214	3,377,987	15,785	427	8,550,121	20,024
45 - 49	223	5,746,478	25,769	239	4,194,732	17,551	462	9,941,210	21,518
50 - 54	226	5,919,285	26,192	190	3,657,693	19,251	416	9,576,978	23,022
55 - 59	135	3,359,867	24,888	172	3,400,875	19 ,77 3	307	6,760,742	22,022
60 - 64	40	977,181	24,430	130	2,689,229	20,686	170	3,666,410	21,567
65 - 69	0	0	0	9	169,339	18,815	9	169,339	18,815
70 - 74	1	19,000	19,000	0	0	0	1	19,000	19,000
75 - 79	0	0	0	1	7,501	7,501	1	7,501	7,501
80 - 84	0	. 0	0	0	0	0	0	0	0
85 +	0	0	0	0	0	0	0	0	0
Total	1,483	\$31,966,299	\$21,555	2,172	\$32,584,651	\$15,002	3,655	\$64,550,950	\$17,661

^{*}Excludes 162 participants, included in the valuation, but for whom data was incomplete.

EXHIBIT IX

MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION COMPARISON OF INCREASES IN AVERAGE SALARY

A	All Active Tea			New Annuitant	
Year	Average <u>Salary</u>	% Increase	<u>Year</u>	Average <u>Salary</u>	% <u>Increase</u>
1977	\$17,661	15.0%	1977	\$18,987	8.7%
1976	15,361	5 .3 %	1976	17,460	5.9%
1975	14,590	7.2%	1975	16,491	6.0%
1974	13,612	11.6%	1974	15,563	13.0%
1973	12,193	1.1%	1973	13,773	5.6%
1972	12,064	13.0%	1972	13,044	10.8%
1971	10,674	8.9%	1971	11,776	10.6%
1970	9,799		1970	10,643	5.0%
			1969	10,136	6.2%
			1968	9,544	4.8%
			1967	9,106	6.5%
			1966	8,552	3.0%
			1965	8,302	

COMPARISON OF AVERAGE AGES AT ENTRY

	Average* Employment Age for
Year	New Entrants
1977	30.1
1976	29.8
1975	30.1
1974	30.6
1973	29.4
1972	27.8
1971	27.1
1970	26.9
1969	27.0
1968	28.2
1967	30.9
1966	28.6
1965	27.8

*Arithmetic mean.

COMPARISON OF AVERAGE AGES AT RETIREMENT

<u>Year</u>	Average Age* at Retirement
1977	61.66
1976	63.36
1975	62.85
1974	64.41
1973	64.14
1972	64.69
1971	63.86
1970	64.38
1969	63.33
1968	64.77
1967	63.84
1966	64.28
1965	64.35

*Arithmetic mean.

SUMMARY OF ACTIVE MEMBERSHIP AND ANNUITANTS

ACTIVE MEMBERS

	Number	Annual Covered Payroll
As of December 31, 1976	3,711	\$ 57,005,500
New entrants and other adjustments	184*	1,840,000*
Salary increases		10,054,620*
Withdrawals from service	(157)	(2,773,000*)
Retirements (including deceased eligible for death benefits)	(83)	(1,576,170*)
As of December 31, 1977	3,655	\$ 64,550,950
ANNUITANTS		
	Number	Annual Amount
As of December 31, 1976	2,146	\$ 9,679,465
New entrants	83	677,726
Terminations	(15)	(61,009)
Deaths	(59)	(211,997)
Net of other increases	0	96,981*
As of December 31, 1977	2,155	<u>\$ 10,181,166</u>

^{*}Approximate figures.

APPROXIMATE BREAKDOWN OF THE CHANGE IN UNFUNDED ACCRUED LIABILITY AS OF DECEMBER 31, 1977

\$156,895,749			
103,944,165			
<u>\$ 52,951,584</u>			
Sources of Increase and (Decrease)			
\$(1,600,103)			
\$ (526,581)			
\$ 17,331,600			
\$ 2,714,900			
\$(251,200)			
\$ 113,500			
\$ 230,000			
\$ 2 9,401,973			
\$ 1,565,838			
\$ 3,971,657			
\$ 52,951,584			

*The portion of the 1977 contribution applied to an $\mathring{\text{o}}$ ortize the UAL is \$1,565,838. This is derived from Exhibit VI as the excess of item (a) over item (g) therein.

PART III.

SUMMARY OF THE PRINCIPAL PROVISIONS OF THE PLAN

MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION SUMMARY OF THE PRINCIPAL PROVISIONS OF THE PLAN

- I. <u>ELIGIBILITY</u>—Any teacher employed by the Board of Education of the City of Minneapolis shall be eligible for membership in the Association.
- II. <u>CITY CONTRIBUTIONS</u>—The City shall deposit in the Retirement Deposit Fund on behalf of each member 6½% of the compensation the member receives for service as a teacher.
- III. MEMBER CONTRIBUTIONS-("REQUIRED DEPOSITS")--Each member shall deposit in the Retirement Deposit Fund 8½% of all compensation the member received for service as a teacher.

IV. NORMAL RETIREMENT BENEFIT ("FORMULA ANNUITY") --

- 1. Eligibility—A member is eligible for the Formula Annuity if he has attained age 60 or has completed 30 years of teaching service regardless of age when he retires. Each member so eligible may elect to relinquish all other benefits from the required and City deposits and receive in lieu thereof the Formula Annuity.
- 2. Annual Amount--The annual Formula Annuity benefit is 2.25% (1-2/3% for participants who cease to be employed on or before May 1, 1974) of average annual compensation received by the member during any 5 consecutive years of teaching service, multiplied by his years of teaching service (maximum 30 years).
- Normal Form of Payment -- single life annuity. Specified optional forms are available.

V. WITHDRAWAL BENEFIT--

A. Benefit from Member Deposits --

- 1. <u>Eligibility</u>—the member ceases to be employed in teaching in the public schools of Minneapolis.
- 2. Amount--The accumulation from the member's deposits may be withdrawn in a single sum or in installments. However, if the member is not entitled to receive an annuity from City deposits, the accumulation from the member's deposits shall be returned. Alternatively, that accumulation may be applied by the member at rates published by the Board to purchase an annuity. The annuity shall commence according to the member's election.

3. Normal Form of Payment--single life annuity. Optional annuity forms are available.

B. Benefit from City Deposits--

- 1. Eligibility--the member ceases to be employed in teaching in the public schools of Minneapolis.
- 2. Amount--The accumulation from City deposits may be applied by the member at rates published by the Board to purchase an annuity to commence not before age 50 provided that:
 - (a) if the member ceases teaching after the completion of 20 years of service and the attainment of age 55, or if the member attains the age of 62 at the commencement of the annuity payments, such benefit shall not be less than \$2.00 per month for each year of teaching service;
 - (b) if the member ceases teaching with less than 10 years of teaching service, all City deposits credited before he attained age 45 are cancelled; and
 - (c) if a member hired after July 1, 1967 ceases teaching with less than 7 years of teaching service, all City deposits are cancelled.
- 3. Normal Form of Payment--single life annuity. Optional annuity forms are available.
- C. Additional Benefit--If an annuity is purchased for the member in accordance with either A or B above, or both, an additional annuity ("Subsection (9) annuity") equal to the lesser of \$1,800 or the aggregate annual annuity so purchased is also paid.
- D. A member who is vested in City deposits (see B above) and who terminates after May 1, 1974, prior to attainment of age 60, is entitled to elect to receive a formula annuity at age 60. In such event the member will be entitled to an additional annuity provided by:
 - (a) the interest accumulated from date of termination to age 60 on the City and the member's deposits.
 - (b) the rate published by the Board for the purchase of an additional annuity.

VI. DISABILITY BENEFITS--

1. Eligibility—A member must be totally disabled (which is the presumably permanent inability of the member by reason of physical or mental disability to render further satisfactory service as a teacher) and have completed 3 years of teaching service to be eligible for a disability benefit.

- 2. Annual Amount--The total disability annuity is equal to the annuity which would become available to the member on the valuation date (the date 15 years after the commencement of total disability but not later than June 30 next following the attainment of age 65) under the provisions of Sections (2) and (3) of Article IX (see V above) from the accumulation of City and required deposits upon assumed compensation continuing at the rate last received by the member to the valuation date.
- 3. Additional Benefit (Subsection (9) Annuity) -- An additional annuity equal to the lesser of \$1,800 or the annual benefit otherwise available is also paid.
- 4. Normal Form of Payment--A single life annuity, commencing after the Board has determined that the total disability exists, is paid during the continued existence of the disability.

VII. <u>DEATH BENEFITS</u>--

- 1. <u>General</u>--A member may elect one of the three death benefits as described below. If no election is made, the "C" Death Benefit or, if there is no individual eligible to receive that benefit, the death benefit of greatest value shall be paid.
- 2. "A" Death Benefit--The full amount of the accumulation to the credit of the member in the Retirement Deposit Fund may be paid to a beneficiary in a lump sum, in installments or as an annuity. In the later case, an additional annuity (Subsection (9) Annuity), equal to the lesser of \$1,800 or the annual annuity so provided, is also paid.

3. "B" Death Benefit--

- (a) Eligibility--The "B" death benefit is available to a member who dies while in the teaching service, on leave of absence or who is entitled to deferred benefit and who leaves a dependent survivor.
- (b) Amount--The death benefit shall be computed as the annuity purchased by the "amount" defined below applied as a net single premium at the rates published by the Board.

The "amount" to be applied shall be determined as the actuarial equivalent of any annuity benefit, including a deferred annuity, which would have been available to the member if he resigned from teaching at the time of death.

(c) Normal form of payment--Life annuity to dependent survivor.

4. "C" Death Benefit --

- (a) Eligibility--The "C" death benefit is available to a member who dies while in the teaching service of the City or on leave of absence and who leaves a beneficiary for whom benefits are provided.
- (b) Widow's Benefit--The dependent widow of the deceased member shall receive \$163.50 per month for each month during which she maintains a child who is under 18 and who is entitled to benefits as described below. The payments cease upon her death or remarriage or if she no longer maintains such a child, and payments are reduced if her earnings exceed \$1,680 for any 12 month period.
- (c) Child's Benefit--Each dependent child of the deceased member shall receive \$163.50 per month while he is under age 18 and \$163.50 per month while he is a full-time student between the ages of 18 and 22.
- (d) <u>Maximum Benefit</u>--The maximum total "C" Death Benefit paid to all beneficiaries is \$434.40 per month. Such maximum may be amended from time to time.

VIII. ANNUAL AUTOMATIC ANNUITY INCREASE --

- (a) Eligibility--Every member entitled to receive an annuity is entitled to an Annual Automatic Annuity Increase in his annuity. All beneficiaries (except "C" Death benefit beneficiaries) shall be entitled to the same Annual Automatic Annuity Increase as the member would have been entitled to receive if living and according to the age the member would have attained if living.
- (b) Amount--The amount of the Annual Automatic Annuity Increase in any year shall be equal to 1½% of the benefit the member was receiving as of the end of the preceding year, which increase shall first become payable on the July 1 of the calendar year in which the member becomes 72. If a member is entitled to a Total Disability Annuity, the Annual Automatic Annuity Increase of 1½% shall commence upon the earlier of attainment of age 60 or 9 years after the member becomes entitled to such annuity.

IX. STOCK APPRECIATION FUNDED ANNUITY INCREASES--

- (a) Eligible Employees—All members who have been retired and receiving an annuity for at least two full calendar years and who have attained age 65 are eligible for the Stock Appreciation Fund Annuity Increases. All beneficiaries of deceased members (except "C" Death Benefit beneficiaries) shall receive the same increases the member would have been entitled to receive if living and according to the age the member would have attained if living.
- (b) <u>Effective Date of Increases</u>—All increases in annuities shall commence as of July 1 of each year.

- (c) Amount of Increase--Each eligible member may (at the discretion of the Board) have his annuity increased by a percentage determined by dividing the total increase in book value which is in excess of the annual amount required to fund the Annual Automatic Annuity Increases granted during the year by the total reserve on annuities of all qualified members on the effective date.
 - (d) Minimum Annuities—The annuity payment to any member will never be less than the amount originally determined on the date of retirement or January 1, 1972, if later. No annuity increase granted under the Annual Automatic Annuity Increase provision shall be reduced nor shall such increase be denied pursuant to this provision.
 - (e) <u>Increases Granted</u>--A 3% increase was granted in 1972 and a 1% increase was granted in 1973.