

86-0543

MINNEAPOLIS TEACHERS' RETIREMENT FUND

ACTUARIAL VALUATION REPORT

JULY 1, 1985

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.MSF
1985

THE *Wyatt* COMPANY

ACTUARIES AND CONSULTANTS

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December 20, 1985

Legislative Commission on
Pensions and Retirement
55 State Office Building
St. Paul, Minnesota 55155

RE: MINNEAPOLIS TEACHERS' RETIREMENT FUND

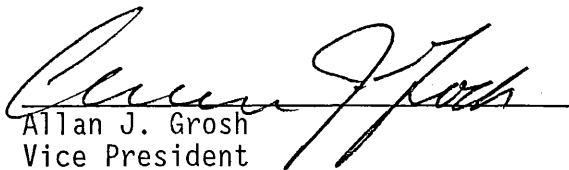
Gentlemen:

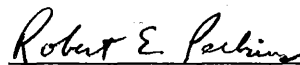
We have prepared an actuarial valuation of the Fund as of July 1, 1985 based on membership and financial data supplied by the Fund.

We certify that to the best of our knowledge and belief this actuarial valuation was performed in accordance with the requirements of Section 356.215, Minnesota Statutes, and the requirements of the Standards for Actuarial Work, adopted by the Commission on June 11, 1985.

Respectfully submitted,

THE WYATT COMPANY


Allan J. Grosh
Vice President


Robert E. Perkins
Consulting Actuary

MINNEAPOLIS TEACHERS' RETIREMENT FUND

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MINNEAPOLIS TEACHERS' RETIREMENT FUND

REPORT HIGHLIGHTS (DOLLARS IN THOUSANDS)

	<u>12/31/84</u> <u>VALUATION</u>	<u>07/01/85</u> <u>VALUATION</u>
A. CONTRIBUTIONS (TABLE 11)		
1. Statutory Contributions - Chapter 354A % of Payroll	20.30%	19.99%
2. Required Contributions - Chapter 356 % of Payroll	31.68%	31.78%
3. Sufficiency (Deficiency) (A1-A2)	-11.38%	-11.79%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	NA	\$239,072
b. Current Benefit Obligations (Table 8)	NA	\$459,380
c. Funding Ratio (a/b)	NA	52.04%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	\$223,334	\$239,072
b. Actuarial Accrued Liability (Table 9)	\$492,478	\$484,578
c. Funding Ratio (a/b)	45.35%	49.34%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	\$399,525	\$454,677
b. Current and Expected Future Benefit Obligations	\$621,512	\$658,153
c. Funding Ratio (a/b)	64.28%	69.08%
C. PLAN PARTICIPANTS		
1. Active Members (Table 3)		
a. Number	3,099	2,758
b. Projected Annual Earnings	\$82,035	\$87,643
c. Average Annual Earnings (Actual \$)	\$26,471	\$31,778
d. Average Age	NA	44.0
e. Average Service	NA	14.4
f. Additional Members on Leave	NA	234
2. Others		
a. Service Retirements (Table 4)	NA	2,153
b. Disability Retirements (Table 5)	56	47
c. Survivors (Table 6)	NA	140
d. Deferred Retirements (Table 7)	NA	562
e. Terminated Other Non-vested (Table 7)	NA	60
f. Total	NA	2,962

MINNEAPOLIS TEACHERS' RETIREMENT FUND

COMMENTARY

Purpose

The purpose of this valuation is to determine the financial status of the Fund. In order to achieve this purpose, an actuarial valuation is made at the beginning of each fiscal year as required by Section 356.215 of Minnesota Statutes.

Report Highlights

The statutory contributions for the Minneapolis Teachers' Retirement Fund are not sufficient for 1985 by an amount of 11.79% of payroll. According to this valuation a contribution rate of 31.78% is required to comply with Minnesota Law.

The financial status of the Fund can be measured by three different funding ratios:

- o The Accrued Benefit Funding Ratio is a measure of current funding status, and when viewed over a period of years, presents a view of the funding progress. This ratio is based on recently published Governmental Accounting Standards Board proposals. This year's ratio is 52.04%. The corresponding ratio for the prior year was not calculated.
- o The Accrued Liability Funding Ratio is also a measure of funding status and funding progress. It is based on the actuarial cost method that

has historically been used. For 1985 the ratio is 49.34%, which is an increase from the 1984 value of 45.35%.

- o The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This ratio which is less than 100%, verifies that the current statutory contributions are inadequate.

The following table summarizes the impact of the benefit changes since the 1984 valuation:

	<u>July 1, 1985 valuation</u>	
	<u>Before Changes</u>	<u>After Changes</u>
Required Contributions	28.70%	31.78%
Accrued Benefit Funding Ratio	55.15%	52.04%
Accrued Liability Funding Ratio	53.00%	49.34%
Projected Benefit Funding Ratio	74.50%	69.08%

Asset Information

Beginning in 1984, changes in Section 356.215 of Minnesota Statutes require that the asset value used for actuarial purposes reflect a portion of the unrealized gains and losses. Only a portion of these gains and losses are considered because market values are typically volatile and could produce erratic changes in the contribution requirements from year to year.

The calculation of assets for actuarial purposes begins with the reporting of Total Assets by the Fund (Table 1, line B). These Total Assets, reduced by any Amounts Currently Payable (line C), produce the Assets Available for Benefits (line D5), which is the starting value for determining the Actuarial Value of Assets.

The calculation of the Actuarial Value of Assets is shown in Table 1 on lines F1 to F6. It combines the cost value and one-third of the difference between market value and cost value.

The term "Actuarial Value of Assets" is used to indicate that the value was determined for use in this actuarial valuation. Since Minnesota Statutes refer to this value as "Current Assets", the latter phrase will be used in the remainder of this report.

The term MPRIF appears on some of the tables with a corresponding value of zero. MPRIF stands for Minnesota Post Retirement Investment Fund, which is used by many of the public funds. For purposes of consistency all of the actuarial reports follow the same format.

Membership Data

Tables 3 through 6 summarize statistical information on members by category. Active members are grouped by age and completed years of service in Table 3. The earnings shown for these members are approximated earnings for the prior fiscal year based on the W-2 earnings from January 1 to June 30.

The service retirements are shown in Table 4 and disabled members are shown in Table 5. The survivors category (Table 6) includes spouses and children of deceased members.

The reconciliation of active members in Tables 7 and 15 include members on leave of absence.

Actuarial Balance Sheet

An actuarial balance sheet is required by Section 356.215, Subdivision 4f of Minnesota Law. This balance sheet (Table 8) establishes a method for evaluating both current and future levels of funding.

Current funding levels are evaluated by comparing Current Assets on line A to Current Benefit Obligations on line D5. The difference between the obligations and the assets is shown as Current Unfunded Liability on line G.

The measurement of the Current Benefit Obligation is based on the Proposed Statement of Governmental Accounting Standards published by the Governmental Accounting Standards Board (GASB) in August 1985. This value is known as the Actuarial Present Value of Credited Projected Benefits.

The first step in the GASB calculation for active members involves projecting salaries and service to determine future benefits payable under the plan and then discounting those projected benefits to the date of the valuation. The second step is to determine the discounted value of benefits for the non-active members. The result of the first two steps is shown on line F, Total Current and Expected Future Benefit Obligations.

The third step is to determine the portion that represents Current Benefit Obligations. In the case of active members the Current Benefit Obligation is computed by attributing an equal benefit amount to each year of credited and expected future employee service. For all others, their entire liability is considered a Current Benefit Obligation.

Current and future funding levels are evaluated by comparing Current and Future Expected Assets on line C to Current and Expected Future Benefit Obligations on line F. The difference between the obligations and the assets is shown as the Current and Future Unfunded Liability on line H.

Since line F has already been calculated, the remaining step is to determine the Expected Future Assets . The statutory contribution rate in excess of the combined normal cost rate and expense rate is first calculated. The amount of assets for line B1 can be determined by projecting from the valuation date to the amortization date (the date for paying off all unfunded liabilities) on the assumption that total payroll is increasing at 6.5% annually and then discounted to the date of the valuation.

The Current Unfunded Liability, line G, is a measurement of the status of the funding to the date of the valuation. The Current and Future Unfunded Liability is a measurement of the adequacy of the current statutory contribution level.

Contribution Sufficiency

The approach used by the State of Minnesota to determine contribution sufficiency is the Entry Age Normal Cost Method. The primary characteristic of this method is that it allocates costs as a level percentage of payroll.

A comparison of this actuarial method (Table 9) to the actuarial balance sheet (Table 8) shows similarities and differences. The similarity is that both approaches calculate the value of all future benefits the same way. This can be verified by comparing line F of Table 8 to line A6, column 1, of Table 9. The

difference arises from the technique for allocating liabilities between past and future. As noted in the prior section, the balance sheet allocates benefits and the corresponding liabilities, on the basis of service. The method used in Table 9 allocates liabilities so that the cost each year will be a constant percentage of payroll.

An Unfunded Actuarial Accrued Liability is computed under the Entry Age Normal Cost Method by comparing the liabilities allocated to past service (Actuarial Accrued Liability) to the Current Assets. This amount, line B3, is funded over the remaining years to the amortization date by a series of payments. Prior to 1984 these payments were calculated to be a level dollar amount similar to a fixed interest rate mortgage. The method of funding was changed in 1984 to produce a series of payments that remain a constant percentage of payroll each year.

Under this new approach the payments will increase 6.5% each year since that is the assumed rate of increase in payroll. Although the payment schedule will be adequate to amortize the existing unfunded, the lower payments in the earlier years will not be sufficient to cover the interest on the unfunded liability. After a few years the annual payment will begin to cover not only the interest but also repay a portion of the unfunded.

Projected Cash Flow

Table 12 illustrates the anticipated cash flow over the amortization period. The cash flow begins with the Current Assets. Contributions are then added based on the present statutory rates for employers and employees. As members become eligible for payments, disbursements are made from the Fund.

This projected cash flow assumes that future payrolls increase by 6.5%. For purposes of this table only, new members are assumed to be hired in order to replace those who terminate from the active group. This open group method provides a more realistic picture of future cash flow. The statutory interest rate of 8% is used to project future investment return. The assumed bonus payment of 1% has been taken out of year end assets and added to the disbursements in the following year.

Plan Provisions

Plan changes since the last valuation have increased the Unfunded Actuarial Accrued Liability by \$33,746,000.

The major plan change eliminated the maximum of 30 years of service on the Basic formula. Minor benefit changes included the increase from 3.5% to 5.0% in the interest for refunds upon death and a change in the commencement date for the 1.5% annual post-retirement benefit increase.

Basic and Coordinated

Table 2 allocates the Current Assets between the Basic and Coordinated Programs based on information provided by the Fund except for expenses and other disbursements which were allocated in proportion to the Current Assets at the beginning of the year. Additional tables at the end of this report provide information required by Section 354A.41 of Minnesota Statutes.

The Statutes also require the disclosure of the contribution required to meet the interest at the assumed rate on the Actuarial Unfunded Accrued Liability.

The following table compares the required contribution which funds the Unfunded by the year 2009 as a level percentage of payroll to the contribution which provides for interest on the Unfunded. As noted in the section on Contribution Sufficiency, the amount of the Unfunded will increase under the amortization approach because payments for the next several years will not be sufficient to cover interest.

	<u>Required Contribution Rate</u>	
	<u>Amortization of Unfunded</u>	<u>Interest on Unfunded</u>
Basic	35.25%	42.84%
Coordinated	11.24%	11.48%
Combined	31.78%	38.31%

TABLE 1

MINNEAPOLIS TEACHERS' RETIREMENT FUND

ACCOUNTING BALANCE SHEET
(DOLLARS IN THOUSANDS)

July 1, 1985

	<u>MARKET VALUE</u>	<u>COST VALUE</u>
A. ASSETS		
1. Cash and Cash Equivalents	\$38,253	\$38,253
2. Investments		
a. Fixed Income	23,051	24,534
b. Equity	134,003	74,087
c. Real Estate	82,924	82,924
3. Equity in Minnesota Post-Retirement Investment Fund (MPRIF)	0	0
4. Other	2,506	2,506
	-----	-----
B. TOTAL ASSETS	\$280,737	\$222,304
	=====	=====
C. AMOUNTS CURRENTLY PAYABLE	\$2,710	\$2,710
D. ASSETS AVAILABLE FOR BENEFITS		
1. Member Reserves	\$145,389	\$145,389
2. Employer Reserves	65,286	6,853
3. MPRIF Reserves	67,352	67,352
4. Non-MPRIF Reserves	0	0
	-----	-----
5. Total Assets Available for Benefits	\$278,027	\$219,594
	-----	-----
E. TOTAL AMOUNTS CURRENTLY PAYABLE AND ASSETS AVAILABLE FOR BENEFITS	\$280,737	\$222,304
	=====	=====
<hr/>		
F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Cost Value of Assets Available for Benefits (D5)		\$219,594
2. Market Value (D5)	\$278,027	
3. Cost Value (D5)	219,594	

4. Market Over Cost (F2-F3)	\$58,433	
5. 1/3 of Market Over Cost(F4)/3		19,478

6. Actuarial Value of Assets (F1+F5) (Same as "Current Assets")		\$239,072
		=====

TABLE 2

MINNEAPOLIS TEACHERS' RETIREMENT FUND

CHANGES IN ASSETS AVAILABLE FOR BENEFITS AND ASSET ALLOCATION
(DOLLARS IN THOUSANDS)

SIX MONTH PERIOD ENDING JUNE 30, 1985

	<u>MARKET VALUE</u>	<u>COST VALUE</u>
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$249,358	\$210,323
B. OPERATING REVENUES		
1. Member Contributions	\$3,821	\$3,821
2. Employer Contributions	6,049	6,049
3. Investment Income	11,438	11,438
4. MPRIF Income	0	0
5. Net Realized Gain (Loss)	(192)	(192)
6. Other	0	0
7. Net Change in Unrealized Gain (Loss)	19,398	0
	-----	-----
8. Total Revenue	\$40,514	\$21,116
	-----	-----
C. OPERATING EXPENSES		
1. Service Retirements	\$9,271	\$9,271
2. Disability Benefits	118	118
3. Survivor Benefits	131	131
4. Refunds	375	375
5. Expenses	615	615
6. Other	1,335	1,335
	-----	-----
7. Total Disbursements	\$11,845	\$11,845
	-----	-----
D. CHANGES IN ACCOUNTING METHOD	0	0
E. ASSETS AVAILABLE AT END OF PERIOD	\$278,027	\$219,594
	=====	=====

TABLE 2
(cont)

MINNEAPOLIS TEACHERS' RETIREMENT FUND

CHANGES IN ASSETS AVAILABLE FOR BENEFITS AND ASSET ALLOCATION
(DOLLARS IN THOUSANDS)

SIX MONTH PERIOD ENDING JUNE 30, 1985

	<u>BASIC</u>	<u>COORDINATED</u>	<u>TOTAL</u>
F. BEGINNING OF PERIOD			
1. Current Assets	\$219,895	\$3,439	\$223,334
2. MPRIF Reserves	0	0	0
3. Allocable Assets(F1-F2)	219,895	3,439	223,334
G. RECEIPTS			
1. Member Contributions	3,512	309	3,821
2. Employer Contributions	5,740	309	6,049
3. Other	0	0	0
	-----	-----	-----
4. Total	9,252	618	9,870
H. DISBURSEMENTS			
1. MPRIF New Annuitants	0	0	0
2. Non-MPRIF Benefits	9,520	0	9,520
3. Refunds	237	138	375
4. Expenses	606 *	9 *	615
5. Other	1,314 *	21 *	1,335
	-----	-----	-----
6. Total	11,677	168	11,845
I. EXPECTED INVESTMENT RETURN 4% OF (F3+.5XG4-.5XH6)	8,747	147	8,894
J. ALLOCATION OF REMAINING ASSETS IN PROPORTION TO LINE I	8,673	146	8,819
K. END OF PERIOD			
1. Allocable Assets	234,890	4,182	239,072
2. MPRIF Reserves	0	0	0
3. Current Assets	234,890	4,182	239,072

* Allocated by Wyatt

TABLE 3

MINNEAPOLIS TEACHERS' RETIREMENT FUND

ACTIVE MEMBERS AS OF JUNE 30, 1985

AGE	YEARS OF SERVICE								TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	10	29							39
25-29	20	79	30						129
30-34	25	71	85	36					217
35-39	20	73	77	170	230				570
40-44	16	47	64	81	289	70			567
45-49	9	26	37	60	133	123	40		428
50-54	1	7	26	48	106	77	102	11	378
55-59	4	6	11	39	64	57	60	49	290
60-64	1	2	7	12	31	16	21	23	113
65+			1	3	5	7	6	5	27
TOTAL	106	340	338	449	858	350	229	88	2,758

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	10,946	15,355							14,224
25-29	14,327	18,098	17,999						17,490
30-34	17,195	21,976	22,302	21,949					21,549
35-39	18,863	23,060	23,939	28,487	31,506				28,058
40-44	19,514	22,188	24,579	31,820	33,433	34,723			31,037
45-49	14,864	19,605	26,246	30,877	35,125	36,256	36,167		32,816
50-54	26,661	20,085	23,597	29,813	33,997	36,969	38,432	36,142	34,338
55-59	7,073	23,097	23,253	28,589	33,272	34,883	36,467	35,631	33,067
60-64	1,822	9,722	15,603	26,567	34,626	35,204	35,363	37,772	32,720
65+			36,145	18,393	30,613	35,437	33,980	41,503	33,476
ALL	16,094	20,500	23,188	28,915	33,263	35,818	37,123	36,588	29,838

PRIOR FISCAL YEAR EARNINGS (IN THOUSANDS) BY YEARS OF SERVICE

<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	TOTAL
1,706	6,970	7,838	12,983	28,540	12,536	8,501	3,220	82,294

TABLE 4

MINNEAPOLIS TEACHERS' RETIREMENT FUND

SERVICE RETIREMENTS AS OF JUNE 30, 1985

AGE	YEARS RETIRED							TOTAL
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	3	1						4
50-54	13	22	1					36
55-59	53	82	11					146
60-64	59	201	41	8				309
65-69	30	134	128	17	2			311
70-74	3	17	191	99	17	2	1	330
75-79	1		72	208	103	10	8	402
80-84			1	82	137	52	40	312
85+					54	102	147	303
TOTAL	162	457	445	414	313	166	196	2,153

AVERAGE ANNUAL ANNUITY

AGE	YEARS RETIRED							ALL
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	8,294	14,732						9,903
50-54	14,407	7,533	4,911					9,942
55-59	15,357	14,236	5,001					13,947
60-64	12,064	11,702	9,020	2,374				11,174
65-69	10,534	9,052	8,854	3,120	4,193			8,758
70-74	8,240	11,417	8,049	4,172	5,506	1,345	720	6,868
75-79	4,440		7,192	5,192	4,352	4,700	2,971	5,276
80-84			1,402	5,421	5,194	4,082	3,328	4,817
85+					5,443	5,251	3,866	4,613
ALL	12,858	11,175	8,134	4,854	4,970	4,805	3,703	7,384

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS OF RETIREMENT

<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
2,083	5,106	3,620	2,009	1,556	798	726	15,898

TABLE 5

MINNEAPOLIS TEACHERS' RETIREMENT FUND

DISABILITY RETIREMENTS AS OF JUNE 30, 1985

AGE	YEARS DISABLED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	2		1					3
50-54		1	1					2
55-59		2	1	1				4
60-64		1	8	3	2			14
65-69			4	5	2	1	1	13
70-74			1	2	2			5
75-79					1		2	3
80-84							2	2
85+							1	1
TOTAL	2	4	16	11	7	1	6	47

AVERAGE ANNUAL BENEFIT

AGE	YEARS DISABLED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	13,372		5,418					10,720
50-54		19,173	12,865					16,019
55-59		11,508	17,067	5,604				11,422
60-64		10,834	7,970	9,234	6,042			8,170
65-69			4,170	7,026	6,729	4,427	3,370	5,621
70-74			5,469	6,034	6,779			6,219
75-79					2,045		3,424	2,964
80-84							4,128	4,128
85+							3,932	3,932
TOTAL	13,372	13,256	7,579	7,319	5,878	4,427	3,734	7,436

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS OF DISABILITY

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
27	53	122	81	41	4	22	350

TABLE 6

MINNEAPOLIS TEACHERS' RETIREMENT FUND

SURVIVORS AS OF JUNE 30, 1985

AGE	YEARS SINCE DEATH							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50		1	2	1				4
50-54	1	1	1	1				4
55-59		5	4	2				11
60-64	1	5	7	1	1			15
65-69		3	8	2				13
70-74		1	11	8	1			21
75-79			5	21	3	4	1	34
80-84				12	6	6	1	25
85+					4	2	7	13
TOTAL	2	16	38	48	15	12	9	140

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50		10,173	3,441	2,980				5,009
50-54	9,878	9,011	3,538	4,076				6,626
55-59		14,364	9,117	7,330				11,177
60-64	8,408	7,012	7,034	2,499	1,692			6,460
65-69		7,483	8,291	4,233				7,480
70-74		262	5,771	4,612	2,306			4,902
75-79			3,723	6,861	3,990	2,915	1,073	5,512
80-84				5,106	7,406	4,609	2,315	5,427
85+					5,797	2,013	2,494	3,436
ALL	9,143	9,298	6,436	5,727	5,572	3,612	2,316	5,959

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
18	149	245	274	84	43	21	834

TABLE 7

MINNEAPOLIS TEACHERS' RETIREMENT FUND
RECONCILIATION OF MEMBERS

	<u>ACTIVES</u>	<u>TERMINATED</u>	
		<u>DEFERRED RETIREMENT</u>	<u>OTHER NON-VESTED</u>
A. On December 31, 1984	3,099	NA	NA
B. Additions	126	NA	NA
C. Deletions:			
1. Service Retirement	(162)	NA	
2. Disability	(2)		
3. Death	(2)	NA	
4. Terminated-Deferred	NA		
5. Terminated-Refund	NA	NA	NA
6. Terminated-Other Non-vested	NA		NA
7. Returned as Active		NA	NA
D. Data Adjustments	(67)	NA	NA
	Vested		
	Non-Vested		
	2,094		
	898		
E. Total on June 30, 1985	2,992	562	60

	<u>RECIPIENTS</u>		
	<u>RETIREMENT ANNUITANTS</u>	<u>DISABLED</u>	<u>SURVIVORS</u>
A. On December 31, 1984	NA	56	NA
B. Additions	162	2	2
C. Deletions:			
1. Service Retirement			
2. Death	NA	NA	NA
3. Annuity Expired	NA		NA
4. Returned as Active	NA	NA	
D. Data Adjustments	NA	(11)	NA
E. Total on June 30, 1985	2,153	47	140

TABLE 8

MINNEAPOLIS TEACHERS' RETIREMENT FUND

ACTUARIAL BALANCE SHEET
(DOLLARS IN THOUSANDS)

JULY 1, 1985

A. CURRENT ASSETS (TABLE 1, F6)				\$239,072
B. EXPECTED FUTURE ASSETS				
1. Present Value of Expected Future Supplemental Contributions				42,030
2. Present Value of Future Normal Costs				173,575
3. Total Expected Future Assets				215,605
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS				\$454,677
D. CURRENT BENEFIT OBLIGATIONS	<u>Non-Vested</u>	<u>Vested</u>	<u>Total</u>	
1. Benefit Recipients				
a. Retirement Annuities		\$156,181		\$156,181
b. Disability Benefits		4,075		4,075
c. Surviving Spouse's Benefits		7,160		7,160
d. Surviving Children's Benefits		0		0
2. Deferred Retirements		15,065		15,065
3. Former Members without Vested Rights		36		36
4. Active Members				
a. Retirement Annuities	7,688	226,122		233,810
b. Disability Benefits	863	16,296		17,159
c. Survivors' Benefits	217	6,705		6,922
d. Deferred Retirements	848	15,803		16,651
e. Refund Liability Due to Death or Withdrawal	549	1,772		2,321
5. Total Current Benefit Obligations	\$10,165	\$449,215		\$459,380
E. EXPECTED FUTURE BENEFIT OBLIGATIONS				\$198,773
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS				\$658,153
G. CURRENT UNFUNDED LIABILITY (D5-A)				\$220,308
H. CURRENT AND FUTURE UNFUNDED LIABILITY (F-C)				\$203,476

TABLE 9

MINNEAPOLIS TEACHERS' RETIREMENT FUND

DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
AND SUPPLEMENTAL CONTRIBUTION RATE
(DOLLARS IN THOUSANDS)

JULY 1, 1985

	ACTUARIAL PRESENT VALUE OF PROJECTED BENEFITS <u>(1)</u>	ACTUARIAL PRESENT VALUE OF FUTURE NORMAL COSTS <u>(2)</u>	ACTUARIAL ACCRUED LIABILITY <u>(3)=(1)-(2)</u>
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	\$410,715	\$133,349	\$277,366
b. Disability Benefits	26,997	12,858	14,139
c. Survivors Benefits	10,481	4,717	5,764
d. Deferred Retirements	23,386	13,601	9,785
e. Refunds Due to Death or Withdrawal	4,057	9,050	(4,993)
	-----	-----	-----
f. Total	\$475,636	\$173,575	\$302,061
	-----	-----	-----
2. Deferred Retirements	\$15,065		\$15,065
3. Former Members Without Vested Rights	36		36
4. Annuitants in MPRIF	0		0
5. Recipients Not in MPRIF	167,416		167,416
	-----	-----	-----
6. Total AAL	\$658,153	\$173,575	\$484,578
	=====	=====	=====
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL (A6)			\$484,578
2. Current Assets (Table 1,F6)			239,072

3. UAAL (B1-B2)			\$245,506
			=====
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2009			\$1,726,561
2. Supplemental Contribution Rate (B3/C1)			14.22%

TABLE 10

MINNEAPOLIS TEACHERS' RETIREMENT FUND
CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)
(DOLLARS IN THOUSANDS)

SIX MONTH PERIOD ENDING JUNE 30, 1985

A. UAAL AT BEGINNING OF PERIOD	\$269,144
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$7,481
2. Contribution	(9,870)
3. Interest on A, B1, and B2	10,718

4. Total (B1+B2+B3)	\$8,329

C. EXPECTED UAAL AT END OF PERIOD (A+B4)	\$277,473
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	\$7,591
2. Investment Return	(8,819)
3. MPRIF Mortality	0
4. Mortality of Other Benefit Recipients	(111)
5. Active Members' Turnover, Retirement, Mortality and Disability	(2,165)
6. Other Items	(62,209)

7. Total	(\$65,713)

E. UAAL AT END OF PERIOD BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C+D7)	\$211,760
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	\$33,746
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	\$0

H. UAAL AT END OF PERIOD (E+F+G)	\$245,506
	=====

TABLE 11

MINNEAPOLIS TEACHERS' RETIREMENT FUND
DETERMINATION OF CONTRIBUTION SUFFICIENCY
(DOLLARS IN THOUSANDS)

JULY 1, 1985

	<u>% OF PAYROLL</u>	<u>\$ AMOUNT</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	7.93%	\$6,942
2. Employer Contributions	12.06%	10,578
3. Total	19.99%	\$17,520
	=====	=====
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	12.45%	\$10,914
b. Disability Benefits	1.22%	1,067
c. Survivors	0.45%	391
d. Deferred Retirement Benefits	1.31%	1,152
e. Refunds Due to Death or Withdrawal	0.84%	738
f. Total	16.27%	\$14,262
	-----	-----
2. Supplemental Contribution Amortization by July 1, 2009 of UAAL of \$245,506	14.22%	\$12,465
3. Allowance for Expenses	1.28%	\$1,122
4. Total	31.78%	\$27,849
	-----	-----
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) (A3-B4)	-11.79%	(\$10,329)

Note: Projected Annual Payroll for Fiscal Year Beginning
on July 1, 1985 is \$87,643

TABLE 12

MINNEAPOLIS TEACHERS' RETIREMENT FUND

PROJECTED CASH FLOW
(DOLLARS IN THOUSANDS)

<u>FISCAL YEAR</u>	<u>STATUTORY CONTRIBUTIONS</u>	<u>TRANSFERS TO MPRIF</u>	<u>OTHER DISBURSEMENTS</u>	<u>INVESTMENT RETURN</u>	<u>CURRENT ASSETS YEAR END</u>
1985					\$239,072
1986	\$17,520	\$0	\$17,780	\$19,116	255,351
1987	17,689	0	22,652	20,229	267,911
1988	18,456	0	23,052	21,249	281,718
1989	19,280	0	23,891	22,353	296,465
1990	20,127	0	24,676	23,536	312,298
1991	20,834	0	26,399	24,761	328,179
1992	21,561	0	28,330	25,984	343,920
1993	22,325	0	30,267	27,196	359,542
1994	23,098	0	32,575	28,384	374,665
1995	23,919	0	34,798	29,538	389,390
1996	24,689	0	37,828	30,626	402,809
1997	25,541	0	40,757	31,616	415,017
1998	26,475	0	43,728	32,511	425,972
1999	27,450	0	46,855	33,302	435,470
2000	28,334	0	50,980	33,931	442,288
2001	29,233	0	55,382	34,337	445,971
2002	30,187	0	60,118	34,480	446,015
2003	31,081	0	65,828	34,292	441,104
2004	32,105	0	71,281	33,721	431,293
2005	32,767	0	79,114	32,650	413,420
2006	33,645	0	86,190	30,972	387,928
2007	34,697	0	92,977	28,703	354,768
2008	35,662	0	101,356	25,754	311,679
2009	36,268	0	111,828	21,912	255,451
2010	37,603	0	118,457	17,202	189,881

January 28, 1986

TABLE 13

MINNEAPOLIS TEACHERS' RETIREMENT FUND
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Interest:	Pre-Retirement: 8% per annum Post-Retirement: 8% per annum
Salary Increases:	W-2 pay for 1/1/85-6/30/85 annualized to approximate pay for fiscal year ended 6/30/85 increased 6.5% to current fiscal year and 6.5% annually for each future year.
Mortality:	Pre-Retirement: Male - 1971 GAM projected to 1975 by Scale D set back two years Female - 1971 GAM projected to 1975 by Scale D set back eight years Post-Retirement: Male - Same as above Female - Same as above Post-Disability: Male - Same as above Female - Same as above
Retirement Age:	Greater of one year from valuation date and either Age 61 for the Basic Plan or Age 63 for the Coordinated Plan. 100% of the employees with less than 30 years of service are assumed to retire under the Rule of 85 at the later of age 58 and when first eligible.
Separation:	Rates shown in table based on 1979-83 experience study.
Disability:	Male-1955 UAW Table Female-1955 UAW Table
Expenses:	Prior year expenses expressed as percentage of prior year payroll. (1.28% of payroll)
Return of Contributions:	All employees withdrawing for reasons other than retirement, disability or death were assumed to receive a refund of their employee contributions.
Family Composition:	80% of male members and 60% of female members are assumed to be married. Female is three years younger than male.
Social Security:	NA

TABLE 13
(cont)

Benefit Increases After Retirement:	1.5% per annum.
Special Consideration:	Annual bonus payment totaling 1% of the year end assets is accounted for by using a 7% post and pre-retirement interest rate. In determining deferred benefits, Basic members were assumed to receive an annuity at age 61 purchased by their accumulated member and City/State contributions. Coordinated members were assumed to receive a refund of their accumulated member contributions.
Actuarial Cost Method:	Entry Age Normal Cost Method with normal costs expressed as a level percentage of earnings. Under this method Actuarial Gains(Losses) reduce(increase) the Unfunded Actuarial Accrued Liability.
Asset Valuation Method:	Cost Value plus one-third Unrealized Gains or Losses.
Payment on the Unfunded Actuarial Accrued Liability:	A level percentage of payroll each year to the statutory amortization date assuming payroll increases of 6.5% per annum.
Projected Cash Flow Method:	Cash flows from the Fund were projected based on the current plan benefits, participant data, and actuarial assumptions. In addition, new entrants were assumed so that the total payroll would increase by 6.5% per annum.

TABLE 13
(cont)SEPARATIONS EXPRESSED AS THE
NUMBER OF OCCURRENCES PER 10,000

Age	Death		Withdrawal		Disability		Retirement	
	Male	Female	Male	Female	Male	Female	Male	Female
20	5	4	1,200	1,200	3	4	0	0
21	5	4	1,150	1,150	3	4	0	0
22	5	4	1,100	1,100	3	4	0	0
23	5	4	1,050	1,050	3	5	0	0
24	5	4	1,000	1,000	3	5	0	0
25	6	4	950	950	3	5	0	0
26	6	5	900	900	4	5	0	0
27	6	5	850	850	4	5	0	0
28	6	5	800	800	4	6	0	0
29	7	5	750	750	4	6	0	0
30	7	5	700	700	4	6	0	0
31	7	6	650	650	4	6	0	0
32	8	6	600	600	4	7	0	0
33	8	6	550	550	5	7	0	0
34	9	6	500	500	5	8	0	0
35	10	7	450	450	5	8	0	0
36	10	7	400	400	6	8	0	0
37	11	7	350	350	6	9	0	0
38	12	8	300	300	6	9	0	0
39	13	8	250	250	6	10	0	0
40	14	9	200	200	7	10	0	0
41	15	10	190	190	7	11	0	0
42	16	10	180	180	8	12	0	0
43	17	11	170	170	8	13	0	0
44	19	12	160	160	9	14	0	0
45	22	13	150	150	10	15	0	0
46	25	14	140	140	11	16	0	0
47	28	15	130	130	12	18	0	0
48	32	16	120	120	14	20	0	0
49	37	17	110	110	16	23	0	0
50	41	19	100	100	18	26	0	0
51	46	22	90	90	20	29	0	0
52	51	25	80	80	23	33	0	0
53	57	28	70	70	26	37	0	0
54	63	32	60	60	30	42	0	0

TABLE 13
(cont)

Age	Death		Withdrawal		Disability		Retirement	
	Male	Female	Male	Female	Male	Female	Male	Female
55	69	37	50	50	36	49	0	0
56	76	41	40	40	42	58	0	0
57	83	46	30	30	50	68	0	0
58	90	51	20	20	59	80	0	0
59	98	57	10	10	69	94	0	0
60	106	63	0	0	90	121	0	0
61	116	69	0	0	116	154	0	0
62	128	76	0	0	146	193	0	0
63	141	83	0	0	0	0	10,000	10,000
64	155	90	0	0	0	0	0	0
65	170	98	0	0	0	0	0	0
66	187	106	0	0	0	0	0	0
67	207	116	0	0	0	0	0	0
68	231	128	0	0	0	0	0	0
69	257	141	0	0	0	0	0	0
70	285	155	0	0	0	0	0	0

TABLE 15

MINNEAPOLIS TEACHERS' RETIREMENT FUND

MEMBERSHIP CHANGES
(DOLLARS IN THOUSANDS)

JUNE 30, 1985

		<u>NUMBER</u>	<u>PAYROLL</u>
A. ACTIVE MEMBERS			
1. As of the Last Valuation Date		3,099	\$82,035
2. New Entrants		126	NA
3. Total		3,225	NA
4. Separations from Active Service			
a. Refund of Contributions		NA	NA
b. Separation with Deferred Annuity		NA	NA
c. Separation with neither Refund nor Deferred Annuity		NA	NA
d. Disability		(2)	NA
e. Death		(2)	NA
f. Retirement with Service Annuity		(162)	NA
5. Total Separations		NA	NA
6. Data Adjustments		(67)	NA
7. As of Current Valuation Date		2,992	\$82,294
B. SERVICE RETIREMENT ANNUITANTS			
		<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date		NA	NA
2. New Entrants		162	NA
3. Total		NA	NA
4. Terminations			
a. Deaths		NA	NA
b. Others		NA	NA
5. Total Terminations		NA	NA
6. Data Adjustments		NA	NA
7. As of Current Valuation Date		2,153	\$15,898
C. DISABLED ANNUITANTS			
		<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date		56	\$410
2. New Entrants		2	NA
3. Total		58	NA
4. Terminations			
a. Deaths		NA	NA
b. Others		NA	NA
5. Total Terminations		NA	NA
6. Data Adjustments		(11)	NA
7. As of Current Valuation Date		47	\$350

TABLE 15

(cont)

D. SURVIVING SPOUSE ANNUITANTS		
	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	NA	NA
2. New Entrants	2	NA
3. Total	NA	NA
4. Terminations		
a. Deaths	NA	NA
b. Others	NA	NA
5. Total Terminations	NA	NA
6. Data Adjustments	NA	NA
7. As of Current Valuation Date	140	\$834
E. SURVIVING CHILDREN ANNUITANTS		
	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	NA	NA
2. New Entrants	NA	NA
3. Total	NA	NA
4. Terminations		
a. Deaths	NA	NA
b. Others	NA	NA
5. Total Terminations	NA	NA
6. Data Adjustments	NA	NA
7. As of Current Valuation Date	0	\$0
F. DEFERRED ANNUITANTS		
	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	NA	NA
2. New Entrants	NA	NA
3. Total	NA	NA
4. Terminations		
a. Deaths	NA	NA
b. Others	NA	NA
5. Total Terminations	NA	NA
6. Data Adjustments	NA	NA
7. As of Current Valuation Date	562	\$3,564

MINNEAPOLIS TEACHERS' RETIREMENT FUND

BASIC

REPORT HIGHLIGHTS (DOLLARS IN THOUSANDS)

	<u>12/31/84 VALUATION</u>	<u>07/01/85 VALUATION</u>
A. CONTRIBUTIONS (TABLE 11A)		
1. Statutory Contributions - Chapter 354A % of Payroll	21.85%	21.85%
2. Required Contributions - Chapter 356 % of Payroll	34.40%	35.25%
3. Sufficiency (Deficiency) (A1-A2)	-12.55%	-13.40%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 2)	NA	\$234,890
b. Current Benefit Obligations (Table 8A)	NA	\$455,284
c. Funding Ratio (a/b)	NA	51.59%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 2)	\$219,895	\$234,890
b. Actuarial Accrued Liability (Table 9A)	\$488,102	\$479,119
c. Funding Ratio (a/b)	45.05%	49.03%
3. Projected Benefit Funding Ratio (Table 8A)		
a. Current and Expected Future Assets	\$382,978	\$434,559
b. Current and Expected Future Benefit Obligations	\$599,799	\$632,428
c. Funding Ratio (a/b)	63.85%	68.71%
C. PLAN PARTICIPANTS		
1. Active Members (Table 3A)		
a. Number	2,450	2,168
b. Projected Annual Earnings	\$72,171	\$74,969
c. Average Annual Earnings (Actual \$)	\$29,458	\$34,580
d. Average Age	NA	46.3
e. Average Service	NA	17.4
f. Additional Members on Leave	NA	172
2. Others		
a. Service Retirements (Table 4A)	NA	2,153
b. Disability Retirements (Table 5A)	56	47
c. Survivors (Table 6A)	NA	140
d. Deferred Retirements (Table 7A)	NA	562
e. Terminated Other Non-vested (Table 7A)	NA	35
f. Total	NA	2,937

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 3A
BASIC

ACTIVE MEMBERS AS OF JUNE 30, 1985

AGE	YEARS OF SERVICE								TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25									0
25-29			4						4
30-34	5	1	36	36					78
35-39	3	10	35	166	230				444
40-44	10	6	37	77	288	70			488
45-49	6	6	19	58	133	123	40		385
50-54	1	2	18	47	105	77	102	11	363
55-59	2		5	38	63	57	60	47	272
60-64		1	4	12	31	16	20	23	107
65+			1	3	5	7	6	5	27
TOTAL	27	26	159	437	855	350	228	86	2,168

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25									0
25-29			20,277						20,277
30-34	19,627	26,674	23,008	21,949					22,349
35-39	18,035	25,436	24,359	28,626	31,506				29,638
40-44	19,430	27,213	27,205	31,984	33,421	34,723			32,547
45-49	14,951	15,458	26,239	31,264	35,125	36,256	36,167		33,954
50-54	26,661	14,634	25,854	30,170	34,186	36,969	38,432	36,142	34,967
55-59	667		21,750	28,889	33,310	34,883	36,467	36,615	33,837
60-64		18,694	17,946	26,567	34,626	35,204	37,004	37,772	34,157
65+			36,145	18,393	30,613	35,437	33,980	41,503	33,476
ALL	17,194	22,501	24,837	29,080	33,284	35,818	37,275	37,148	32,470

PRIOR FISCAL YEAR EARNINGS (IN THOUSANDS) BY YEARS OF SERVICE

<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	TOTAL
464	585	3,949	12,708	28,458	12,536	8,499	3,195	70,394

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 4A
BASIC

SERVICE RETIREMENTS AS OF JUNE 30, 1985

AGE	YEARS RETIRED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	3	1						4
50-54	13	22	1					36
55-59	53	82	11					146
60-64	59	201	41	8				309
65-69	30	134	128	17	2			311
70-74	3	17	191	99	17	2	1	330
75-79	1		72	208	103	10	8	402
80-84			1	82	137	52	40	312
85+					54	102	147	303
TOTAL	162	457	445	414	313	166	196	2,153

AVERAGE ANNUAL ANNUITY

AGE	YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	8,294	14,732						9,903
50-54	14,407	7,533	4,911					9,942
55-59	15,357	14,236	5,001					13,947
60-64	12,064	11,702	9,020	2,374				11,174
65-69	10,534	9,052	8,854	3,120	4,193			8,758
70-74	8,240	11,417	8,049	4,172	5,506	1,345	720	6,868
75-79	4,440		7,192	5,192	4,352	4,700	2,971	5,276
80-84			1,402	5,421	5,194	4,082	3,328	4,817
85+					5,443	5,251	3,866	4,613
ALL	12,858	11,175	8,134	4,854	4,970	4,805	3,703	7,384

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS OF RETIREMENT

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
2,083	5,106	3,620	2,009	1,556	798	726	15,898

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 5A
BASIC

DISABILITY RETIREMENTS AS OF JUNE 30, 1985

AGE	YEARS DISABLED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	2		1					3
50-54		1	1					2
55-59		2	1	1				4
60-64		1	8	3	2			14
65-69			4	5	2	1	1	13
70-74			1	2	2			5
75-79					1		2	3
80-84							2	2
85+							1	1
TOTAL	2	4	16	11	7	1	6	47

AVERAGE ANNUAL BENEFIT

AGE	YEARS DISABLED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	13,372		5,418					10,720
50-54		19,173	12,865					16,019
55-59		11,508	17,067	5,604				11,422
60-64		10,834	7,970	9,234	6,042			8,170
65-69			4,170	7,026	6,729	4,427	3,370	5,621
70-74			5,469	6,034	6,779			6,219
75-79					2,045		3,424	2,964
80-84							4,128	4,128
85+							3,932	3,932
TOTAL	13,372	13,256	7,579	7,319	5,878	4,427	3,734	7,436

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS OF DISABILITY

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
27	53	122	81	41	4	22	350

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 6A
BASIC

SURVIVORS AS OF JUNE 30, 1985

AGE	YEARS SINCE DEATH							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50		1	2	1				4
50-54	1	1	1	1				4
55-59		5	4	2				11
60-64	1	5	7	1	1			15
65-69		3	8	2				13
70-74		1	11	8	1			21
75-79			5	21	3	4	1	34
80-84				12	6	6	1	25
85+					4	2	7	13
TOTAL	2	16	38	48	15	12	9	140

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50		10,173	3,441	2,980				5,009
50-54	9,878	9,011	3,538	4,076				6,626
55-59		14,364	9,117	7,330				11,177
60-64	8,408	7,012	7,034	2,499	1,692			6,460
65-69		7,483	8,291	4,233				7,480
70-74		262	5,771	4,612	2,306			4,902
75-79			3,723	6,861	3,990	2,915	1,073	5,512
80-84				5,106	7,406	4,609	2,315	5,427
85+					5,797	2,013	2,494	3,436
ALL	9,143	9,298	6,436	5,727	5,572	3,612	2,316	5,959

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH								TOTAL
<1	1-4	5-9	10-14	15-19	20-24	25+		
18	149	245	274	84	43	21		834

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 7A
BASIC

RECONCILIATION OF MEMBERS

	<u>ACTIVES</u>	<u>TERMINATED</u>	
		<u>DEFERRED RETIREMENT</u>	<u>OTHER NON-VESTED</u>
A. On December 31, 1984	2,450	NA	NA
B. Additions	45	NA	NA
C. Deletions:			
1. Service Retirement	(162)	NA	
2. Disability	(2)		
3. Death	(2)	NA	
4. Terminated-Deferred	NA		
5. Terminated-Refund	NA	NA	NA
6. Terminated-Other Non-vested	NA		
7. Returned as Active		NA	NA
D. Data Adjustments	11	NA	NA
	Vested 2,073		
	Non-Vested 267		
E. Total on June 30, 1985	2,340	562	35

	<u>RECIPIENTS</u>		
	<u>RETIREMENT ANNUITANTS</u>	<u>DISABLED</u>	<u>SURVIVORS</u>
A. On December 31, 1984	NA	56	NA
B. Additions	162	2	2
C. Deletions:			
1. Service Retirement			
2. Death	NA	NA	NA
3. Annuity Expired	NA		NA
4. Returned as Active	NA	NA	
D. Data Adjustments	NA	(11)	NA
E. Total on June 30, 1985	2,153	47	140

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 8A
BASIC

ACTUARIAL BALANCE SHEET
(DOLLARS IN THOUSANDS)

JULY 1, 1985

A. CURRENT ASSETS (TABLE 2, K3)				\$234,890
B. EXPECTED FUTURE ASSETS				
1. Present Value of Expected Future Supplemental Contributions				46,360
2. Present Value of Future Normal Costs				153,309

3. Total Expected Future Assets				199,669

C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS				\$434,559
				=====
D. CURRENT BENEFIT OBLIGATIONS	<u>Non-Vested</u>	<u>Vested</u>		<u>Total</u>
1. Benefit Recipients				
a. Retirement Annuities		\$156,181		\$156,181
b. Disability Benefits		4,075		4,075
c. Surviving Spouse's Benefits		7,160		7,160
d. Surviving Children's Benefits		0		0
2. Deferred Retirements		15,065		15,065
3. Former Members without Vested Rights		0		0
4. Active Members				
a. Retirement Annuities	5,094	225,546		230,640
b. Disability Benefits	641	16,262		16,903
c. Survivors' Benefits	154	6,687		6,841
d. Deferred Retirements	759	15,781		16,540
e. Refund Liability Due to Death or Withdrawal	120	1,759		1,879

5. Total Current Benefit Obligations	\$6,768	\$448,516		\$455,284

E. EXPECTED FUTURE BENEFIT OBLIGATIONS				\$177,144

F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS				\$632,428
				=====
G. CURRENT UNFUNDED LIABILITY (D5-A)				\$220,394
H. CURRENT AND FUTURE UNFUNDED LIABILITY (F-C)				\$197,869

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 9A
BASIC

DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
AND SUPPLEMENTAL CONTRIBUTION RATE
(DOLLARS IN THOUSANDS)

JULY 1, 1985

	ACTUARIAL PRESENT VALUE OF PROJECTED BENEFITS (1)	ACTUARIAL PRESENT VALUE OF FUTURE NORMAL COSTS (2)	ACTUARIAL ACCRUED LIABILITY (3)=(1)-(2)
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	\$388,846	\$116,191	\$272,655
b. Disability Benefits	25,633	11,786	13,847
c. Survivors Benefits	9,936	4,310	5,626
d. Deferred Retirements	22,852	13,194	9,658
e. Refunds Due to Death or Withdrawal	2,680	7,828	(5,148)
	-----	-----	-----
f. Total	\$449,947	\$153,309	\$296,638
	-----	-----	-----
2. Deferred Retirements	\$15,065		\$15,065
3. Former Members Without Vested Rights	0		0
4. Annuitants in MPRIF	0		0
5. Recipients Not in MPRIF	167,416		167,416
	-----	-----	-----
6. Total AAL	\$632,428	\$153,309	\$479,119
	=====	=====	=====
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL (A6)			\$479,119
2. Current Assets (Table 2, K3)			234,890

3. UAAL (B1-B2)			\$244,229
			=====
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls to the Amortization Date of July 1, 2009			\$1,476,899
2. Supplemental Contribution Rate (B3/C1)			16.54%

MINNEAPOLIS TEACHERS' RETIREMENT FUND

CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)
(DOLLARS IN THOUSANDS)

TABLE 10A
BASIC

SIX MONTH PERIOD ENDING JUNE 30, 1985

A. UAAL AT BEGINNING OF PERIOD	\$268,207
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$6,702
2. Contribution	(9,252)
3. Interest on A, B1, and B2	10,677

4. Total (B1+B2+B3)	\$8,127

C. EXPECTED UAAL AT END OF PERIOD (A+B4)	\$276,334
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	\$7,452
2. Investment Return	(8,673)
3. MPRIF Mortality	0
4. Mortality of Other Benefit Recipients	(111)
5. Active Members' Turnover, Retirement, Mortality and Disability	(1,765)
6. Other Items	(62,697)

7. Total	(\$65,794)

E. UAAL AT END OF PERIOD BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C+D7)	\$210,540
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	\$33,689
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	\$0

H. UAAL AT END OF PERIOD (E+F+G)	\$244,229
	=====

MINNEAPOLIS TEACHERS' RETIREMENT FUND
DETERMINATION OF CONTRIBUTION SUFFICIENCY
(DOLLARS IN THOUSANDS)

TABLE 11A
BASIC

JULY 1, 1985

	<u>% OF PAYROLL</u>	<u>\$ AMOUNT</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	8.50%	\$6,372
2. Employer Contributions	13.35%	10,008
3. Total	----- 21.85% =====	----- \$16,380 =====
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	13.21%	\$9,900
b. Disability Benefits	1.34%	1,004
c. Survivors	0.49%	367
d. Deferred Retirement Benefits	1.50%	1,128
e. Refunds Due to Death or Withdrawal	0.89%	666
f. Total	----- 17.43% -----	----- \$13,065 -----
2. Supplemental Contribution Amortization by July 1, 2009 of UAAL of \$244,229	16.54%	\$12,400
3. Allowance for Expenses	1.28%	\$960
4. Total	----- 35.25%	----- \$26,425
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) (A3-B4)	-13.40%	(\$10,045)

Note: Projected Annual Payroll for Fiscal Year Beginning
on July 1, 1985 is \$74,969

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 12A
BASIC

PROJECTED CASH FLOW
JULY 1, 1985

<u>FISCAL YEAR</u>	<u>STATUTORY CONTRIBUTIONS</u>	<u>TRANSFERS TO MPRIF</u>	<u>OTHER DISBURSEMENTS</u>	<u>INVESTMENT RETURN</u>	<u>CURRENT ASSETS YEAR END</u>
1985					\$234,890
1986	\$16,380	\$0	\$17,717	\$18,738	249,768
1987	15,794	0	22,498	19,713	260,149
1988	16,170	0	22,837	20,545	271,287
1989	16,582	0	23,605	21,422	282,829
1990	16,969	0	24,312	22,333	294,841
1991	17,050	0	25,928	23,232	306,103
1992	17,092	0	27,737	24,062	316,325
1993	17,119	0	29,526	24,810	325,441
1994	17,078	0	31,684	25,451	332,923
1995	17,031	0	33,741	25,965	338,756
1996	16,804	0	36,570	26,310	341,847
1997	16,616	0	39,274	26,441	342,174
1998	16,461	0	41,980	26,353	339,578
1999	16,263	0	44,810	26,024	333,684
2000	15,789	0	48,608	25,382	322,985
2001	15,213	0	52,646	24,341	306,794
2002	14,593	0	56,887	22,852	284,478
2003	13,726	0	61,877	20,832	254,588
2004	12,923	0	66,680	18,217	216,857
2005	11,341	0	73,694	14,854	167,664
2006	9,949	0	79,850	10,617	107,297
2007	8,666	0	85,645	5,505	35,464
2008	7,035	0	92,580	(585)	(50,159)
2009	4,581	0	101,630	(7,895)	(153,552)
2010	3,140	0	106,710	(16,427)	(270,813)

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 14A
BASIC

SUMMARY OF PLAN PROVISIONS

Eligibility	A teacher who is employed by the Board of Education of Special School District No. 1 and who is not covered by the Social Security Act. Certain part-time licensed employees are covered as well as employees of the Minneapolis Teachers Retirement Fund (unless they belong to the Minneapolis Employees Retirement Fund).
Contributions	
Member	8.5% of Salary.
Employer	6.5% of Salary to the Retirement Fund (city contributions). 6.85% of Salary to the Contingent Fund.
Teaching Service	A year is earned during a calendar year if the member is employed in a covered position and employee contributions are deducted. May also include certain part-time service and military service.
Salary	All compensation received as service as a teacher.
Average Annual Compensation	Average of the 5 highest consecutive years of compensation.
RETIREMENT	
Normal Retirement Benefit	
Eligibility	Age 60. Any age if 30 years of Teaching Service, if hired before 7/1/77. Rule of 85: Age 55 and age plus Allowable Service totals 85 and retirement prior to 1/1/87.
Amount	2.25% of Average Annual Compensation for each year of Teaching Service.
Early Retirement Benefit	
Eligibility	Under age 60 with 30 years of Teaching Service, if hired after 7/1/77.
Amount	Normal Retirement Benefit based on Teaching Service and Average Annual Compensation at retirement date with reduction of 0.25% for each month the member is under age 60 at time of retirement.

TABLE 14A
BASIC
(cont)

An alternative benefit is available to members who are at least age 50 and have 7 years of Teaching Service. The benefit is based on the accumulation of the 6.5% "city deposits" to the Retirement Fund. Other benefits are also provided under this alternative depending on the member's age and Teaching Service.

Form of Payment

Life annuity.
Actuarially equivalent options are:
3 or 15 year certain and life
50%, 75% or 100% joint and survivor

Benefit Increases

Benefits are increased 1.5% annually beginning on the January 1 or July 1 following age 65 if the member has been receiving benefits for at least 24 months. Beneficiaries are entitled to the same increase the member would have received.

In addition, if the investment income of the fund was at least 6% of the asset value of the fund at the end of the year, the Board of Trustees may declare a bonus of up to 1% of the asset value of the fund at the end of the previous fiscal year. This bonus is allocated to those eligible on a prorated basis if receiving an annuity for at least 3 to 5 years.

DISABILITY

Disability Benefit
Eligibility

Total and permanent disability with 3 years of Teaching Service.

Amount

An annuity based on the continued accumulation of member and city contributions at the current rate for a period of 15 years (but not beyond age 65) plus an additional benefit equal to the smaller of 100% of the annuity provided by city contributions only or \$150 per month. A member with 20 years of Teaching Service also receives an additional \$7.50 per month.

Payments stop at age 65, or earlier if disability ceases or death occurs. Benefits may be reduced on resumption of partial employment.

Form of Payment

Same as for retirement.

Benefit Increases

Benefits are increased 1.5% annually beginning on the January 1 or July 1 following nine years of disability or upon reaching age 60, if earlier.

TABLE 14A
BASIC
(cont)

DEATH	
A choice of A, B, or C.	
Benefit A	
Eligibility	Death before retirement.
Amount	The accumulation of Member and city contributions plus interest. Paid as a life annuity, 15 year certain and life, or lump sum. If an annuity is chosen the beneficiary also receives additional benefits.
Benefit B	
Eligibility	An active Member with 7 years of Teaching Service. A former Member age 60 with 7 years of Teaching Service who dies before retirement or disability benefits begin.
Amount	The actuarial equivalent of any benefits the Member could have received if he had resigned on the date of death. Paid to the beneficiary in the form of a life annuity or a 15 year certain and life annuity.
Benefit C	
Eligibility	An active Member who dies and leaves surviving children.
Amount	A monthly benefit of \$248.30 to the surviving widow while caring for a child and an additional \$248.30 per month for each surviving dependent child. The maximum family benefit is \$579.30 per month. These benefits may be increased by the Board of Trustees.
	Benefits to the widow cease upon remarriage or death or when no longer caring for an eligible child. Benefits for dependent children cease upon marriage or age 18 (age 22 if full time student).
Benefit Increases	Eligible for the lump sum post retirement adjustment.
TERMINATION	
Refund of Contributions	
Eligibility	Termination from teaching service.
Amount	Member's contributions with interest as determined by the Board of Trustees. A deferred annuity may be elected in lieu of a refund.
Deferred Annuity	
Eligibility	7 years of Teaching Service.
Amount	Benefit computed under law in effect at termination becomes payable at age 60. In addition, the interest earned on the Member and city contributions between termination and age 60 can be applied to provide an additional annuity.

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 15A
BASIC

MEMBERSHIP CHANGES
(DOLLARS IN THOUSANDS)

JUNE 30, 1985

A. ACTIVE MEMBERS		
	<u>NUMBER</u>	<u>PAYROLL</u>
1. As of the Last Valuation Date	2,450	\$72,171
2. New Entrants	45	NA
3. Total	2,495	NA
4. Separations from Active Service		
a. Refund of Contributions	0	NA
b. Separation with Deferred Annuity	0	NA
c. Separation with neither Refund nor Deferred Annuity	0	NA
d. Disability	(2)	NA
e. Death	(2)	NA
f. Retirement with Service Annuity	(162)	NA
5. Total Separations	(166)	NA
6. Data Adjustments	11	NA
7. As of Current Valuation Date	2,340	\$70,394
B. SERVICE RETIREMENT ANNUITANTS		
	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	NA	NA
2. New Entrants	162	NA
3. Total	NA	NA
4. Terminations		
a. Deaths	NA	NA
b. Others	NA	NA
5. Total Terminations	NA	NA
6. Data Adjustments	NA	NA
7. As of Current Valuation Date	2,153	\$15,898
C. DISABLED ANNUITANTS		
	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	56	\$410
2. New Entrants	2	NA
3. Total	58	NA
4. Terminations		
a. Deaths	NA	NA
b. Others	NA	NA
5. Total Terminations	NA	NA
6. Data Adjustments	(11)	NA
7. As of Current Valuation Date	47	\$350

TABLE 15A
BASIC
(cont)

D. SURVIVING SPOUSE ANNUITANTS		
	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	NA	NA
2. New Entrants	2	NA
3. Total	NA	NA
4. Terminations		
a. Deaths	NA	NA
b. Others	NA	NA
5. Total Terminations	NA	NA
6. Data Adjustments	NA	NA
7. As of Current Valuation Date	140	\$834
E. SURVIVING CHILDREN ANNUITANTS		
	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	0	\$0
2. New Entrants	NA	NA
3. Total	NA	NA
4. Terminations		
a. Deaths	NA	NA
b. Others	NA	NA
5. Total Terminations	NA	NA
6. Data Adjustments	NA	NA
7. As of Current Valuation Date	0	\$0
F. DEFERRED ANNUITANTS		
	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	NA	NA
2. New Entrants	NA	NA
3. Total	NA	NA
4. Terminations		
a. Deaths	NA	NA
b. Others	NA	NA
5. Total Terminations	NA	NA
6. Data Adjustments	NA	NA
7. As of Current Valuation Date	562	\$3,564

MINNEAPOLIS TEACHERS' RETIREMENT FUND

COORDINATED

REPORT HIGHLIGHTS
(DOLLARS IN THOUSANDS)

	12/31/84 <u>VALUATION</u>	07/01/85 <u>VALUATION</u>
A. CONTRIBUTIONS (TABLE 11B)		
1. Statutory Contributions - Chapter 354A % of Payroll	9.00%	9.00%
2. Required Contributions - Chapter 356 % of Payroll	11.79%	11.24%
3. Sufficiency (Deficiency) (A1-A2)	-2.79%	-2.24%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 2)	NA	\$4,182
b. Current Benefit Obligations (Table 8B)	NA	\$4,096
c. Funding Ratio (a/b)	NA	102.10%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 2)	\$3,439	\$4,182
b. Actuarial Accrued Liability (Table 9B)	\$4,376	\$5,459
c. Funding Ratio (a/b)	78.59%	76.61%
3. Projected Benefit Funding Ratio (Table 8B)		
a. Current and Expected Future Assets	\$16,547	\$20,118
b. Current and Expected Future Benefit Obligations	\$21,713	\$25,725
c. Funding Ratio (a/b)	76.21%	78.20%
C. PLAN PARTICIPANTS		
1. Active Members (Table 3B)		
a. Number	649	590
b. Projected Annual Earnings	\$9,864	\$12,673
c. Average Annual Earnings (Actual \$)	\$15,199	\$21,480
d. Average Age	NA	35.4
e. Average Service	NA	3.5
f. Additional Members on Leave	NA	62
2. Others		
a. Service Retirements (Table 4B)	0	0
b. Disability Retirements (Table 5B)	0	0
c. Survivors (Table 6B)	0	0
d. Deferred Retirements (Table 7B)	NA	0
e. Terminated Other Non-vested (Table 7B)	NA	25
f. Total	NA	25

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 3B
COORDINATED

ACTIVE MEMBERS AS OF JUNE 30, 1985

AGE	YEARS OF SERVICE								TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	10	29							39
25-29	20	79	26						125
30-34	20	70	49						139
35-39	17	63	42	4					126
40-44	6	41	27	4	1				79
45-49	3	20	18	2					43
50-54		5	8	1	1				15
55-59	2	6	6	1	1			2	18
60-64	1	1	3				1		6
65+									0
TOTAL	79	314	179	12	3	0	1	2	590

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	10,946	15,355							14,224
25-29	14,327	18,098	17,648						17,401
30-34	16,587	21,909	21,783						21,099
35-39	19,010	22,683	23,588	22,707					22,490
40-44	19,653	21,452	20,980	28,660	36,801				21,713
45-49	14,690	20,849	26,253	19,654					22,626
50-54		22,265	18,517	13,027	14,245				19,116
55-59	13,479	23,097	24,505	17,218	30,893			12,512	21,428
60-64	1,822	749	12,480				2,529		7,090
65+									0
ALL	15,717	20,334	21,724	22,918	27,313	0	2,529	12,512	20,169

PRIOR FISCAL YEAR EARNINGS (IN THOUSANDS) BY YEARS OF SERVICE

	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	TOTAL
	1,242	6,384	3,889	275	82	0	3	25	11,900

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 7B
COORDINATED

RECONCILIATION OF MEMBERS

	<u>ACTIVES</u>	<u>TERMINATED</u>	
		<u>DEFERRED RETIREMENT</u>	<u>OTHER NON-VESTED</u>
A. On December 31, 1984	649	NA	NA
B. Additions	81	NA	NA
C. Deletions:			
1. Service Retirement	0	NA	
2. Disability	0		
3. Death	0	NA	
4. Terminated-Deferred	0		
5. Terminated-Refund	NA	NA	NA
6. Terminated-Other Non-vested	NA		
7. Returned as Active		NA	NA
D. Data Adjustments	(78)	NA	NA
		NA	
Vested	21		
Non-Vested	631		
E. Total on June 30, 1985	652	0	25

	<u>RECIPIENTS</u>		
	<u>RETIREMENT ANNUITANTS</u>	<u>DISABLED</u>	<u>SURVIVORS</u>
A. On December 31, 1984	0	0	0
B. Additions	0	0	0
C. Deletions:			
1. Service Retirement		0	
2. Death	0	0	0
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	
D. Data Adjustments	0	0	0
E. Total on June 30, 1985	0	0	0

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 8B
COORDINATED

ACTUARIAL BALANCE SHEET (DOLLARS IN THOUSANDS)

JULY 1, 1985

A. CURRENT ASSETS (TABLE 2, K3)				\$4,182
B. EXPECTED FUTURE ASSETS				
1. Present Value of Expected Future Supplemental Contributions				(4,330)
2. Present Value of Future Normal Costs				20,266

3. Total Expected Future Assets				15,936

C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS				\$20,118
				=====
D. CURRENT BENEFIT OBLIGATIONS	<u>Non-Vested</u>	<u>Vested</u>		<u>Total</u>
1. Benefit Recipients				
a. Retirement Annuities		\$0		\$0
b. Disability Benefits		0		0
c. Surviving Spouse's Benefits		0		0
d. Surviving Children's Benefits		0		0
2. Deferred Retirements		0		0
3. Former Members without Vested Rights		36		36
4. Active Members				
a. Retirement Annuities	2,594	576		3,170
b. Disability Benefits	222	34		256
c. Survivors' Benefits	63	18		81
d. Deferred Retirements	89	22		111
e. Refund Liability Due to Death or Withdrawal	429	13		442

5. Total Current Benefit Obligations	\$3,397	\$699		\$4,096

E. EXPECTED FUTURE BENEFIT OBLIGATIONS				\$21,629

F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS				\$25,725
				=====
G. CURRENT UNFUNDED LIABILITY (D5-A)				(\$86)
H. CURRENT AND FUTURE UNFUNDED LIABILITY (F-C)				\$5,607

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 9B
COORDINATED

DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
AND SUPPLEMENTAL CONTRIBUTION RATE
(DOLLARS IN THOUSANDS)

JULY 1, 1985

	ACTUARIAL PRESENT VALUE OF PROJECTED BENEFITS (1)	ACTUARIAL PRESENT VALUE OF FUTURE NORMAL COSTS (2)	ACTUARIAL ACCRUED LIABILITY (3)=(1)-(2)
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	\$21,869	\$17,158	\$4,711
b. Disability Benefits	1,364	1,072	292
c. Survivors Benefits	545	407	138
d. Deferred Retirements	534	407	127
e. Refunds Due to Death or Withdrawal	1,377	1,222	155
f. Total	<u>\$25,689</u>	<u>\$20,266</u>	<u>\$5,423</u>
2. Deferred Retirements	\$0		\$0
3. Former Members Without Vested Rights	36		36
4. Annuitants in MPRIF	0		0
5. Recipients Not in MPRIF	0		0
6. Total AAL	<u>\$25,725</u>	<u>\$20,266</u>	<u>\$5,459</u>
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL (A6)			\$5,459
2. Current Assets (Table 2, K3)			4,182
3. UAAL (B1-B2)			<u>\$1,277</u>
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls to the Amortization Date of July 1, 2009			\$249,662
2. Supplemental Contribution Rate (B3/C1)			0.51%

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 10B
COORDINATEDCHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)
(DOLLARS IN THOUSANDS)

SIX MONTH PERIOD ENDING JUNE 30, 1985

A. UAAL AT BEGINNING OF PERIOD	\$937
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$779
2. Contribution	(618)
3. Interest on A, B1, and B2	41

4. Total (B1+B2+B3)	\$202

C. EXPECTED UAAL AT END OF PERIOD (A+B4)	\$1,139
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	\$139
2. Investment Return	(146)
3. MPRIF Mortality	0
4. Mortality of Other Benefit Recipients	0
5. Active Members' Turnover, Retirement, Mortality and Disability	(400)
6. Other Items	488

7. Total	\$81

E. UAAL AT END OF PERIOD BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C+D7)	\$1,220
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	\$57
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	\$0

H. UAAL AT END OF PERIOD (E+F+G)	\$1,277
	=====

MINNEAPOLIS TEACHERS' RETIREMENT FUND
DETERMINATION OF CONTRIBUTION SUFFICIENCY
(DOLLARS IN THOUSANDS)

TABLE 11B
COORDINATED

JULY 1, 1985

	<u>% OF PAYROLL</u>	<u>\$ AMOUNT</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	4.50%	\$570
2. Employer Contributions	4.50%	570
	-----	-----
3. Total	9.00%	\$1,140
	=====	=====
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	8.00%	\$1,014
b. Disability Benefits	0.50%	63
c. Survivors	0.19%	24
d. Deferred Retirement Benefits	0.19%	24
e. Refunds Due to Death or Withdrawal	0.57%	72
	-----	-----
f. Total	9.45%	\$1,197
	-----	-----
2. Supplemental Contribution Amortization by July 1, 2009 of UAAL of \$1,277	0.51%	\$65
3. Allowance for Expenses	1.28%	\$162
	-----	-----
4. Total	11.24%	\$1,424
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) (A3-B4)		
	-2.24%	(\$284)

Note: Projected Annual Payroll for Fiscal Year Beginning
on July 1, 1985 is \$12,673

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 12B
COORDINATEDPROJECTED CASH FLOW
JULY 1, 1985

<u>FISCAL YEAR</u>	<u>STATUTORY CONTRIBUTIONS</u>	<u>TRANSFERS TO MPRIF</u>	<u>OTHER DISBURSEMENTS</u>	<u>INVESTMENT RETURN</u>	<u>CURRENT ASSETS YEAR END</u>
1985					\$4,182
1986	\$1,140	\$0	\$63	\$378	5,581
1987	1,895	0	154	516	7,759
1988	2,286	0	215	704	10,429
1989	2,698	0	286	931	13,634
1990	3,158	0	364	1,202	17,454
1991	3,784	0	471	1,529	22,073
1992	4,469	0	593	1,921	27,591
1993	5,206	0	741	2,386	34,098
1994	6,020	0	891	2,933	41,738
1995	6,888	0	1,057	3,572	50,630
1996	7,885	0	1,258	4,315	60,956
1997	8,925	0	1,483	5,174	72,836
1998	10,014	0	1,748	6,158	86,388
1999	11,187	0	2,045	7,277	101,779
2000	12,545	0	2,372	8,549	119,296
2001	14,020	0	2,736	9,995	139,169
2002	15,594	0	3,231	11,628	161,528
2003	17,355	0	3,950	13,458	186,507
2004	19,182	0	4,601	15,504	214,426
2005	21,426	0	5,420	17,794	245,744
2006	23,696	0	6,340	20,354	280,620
2007	26,031	0	7,332	23,198	319,292
2008	28,627	0	8,776	26,337	361,825
2009	31,687	0	10,198	29,806	408,989
2010	34,463	0	11,747	33,628	460,679

MINNEAPOLIS TEACHERS' RETIREMENT FUND**TABLE 14B
COORDINATED****SUMMARY OF PLAN PROVISIONS**

Eligibility	A teacher who is employed by the Board of Education of Special School District No. 1 and who is covered by the Social Security Act. Certain part-time licensed employees are covered as well as employees of the Minneapolis Teachers Retirement Fund (unless they belong to the Minneapolis Employees Retirement Fund).
Contributions	
Member	4.5% of Salary.
Employer	4.5% of Salary.
Allowable Service	A year is earned during a school year if the member is employed in a covered position and employee contributions are deducted. May also include certain part-time service, extended leaves of absence, sabbatical leaves, and military service.
Salary	Total compensation. Excludes any sick leave payments or lump sum payments for annual leave or at separation.
Average Salary	Average of the 5 highest successive years of Salary.

RETIREMENT**Normal Retirement Benefit**

Eligibility	Age 65 and 10 years of Allowable Service. Age 62 and 30 years of Allowable Service. Rule of 85: Age 55 and age plus Allowable Service totals 85 and retirement prior to 1/1/87.
Amount	1% of Average Salary for the first 10 years of Allowable Service and 1.5% of Average Salary for each subsequent year.

Early Retirement Benefit

Eligibility	Age 55 and 10 years of Allowable Service. Any age with 30 years of Allowable Service.
Amount	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with reduction for benefits commencing prior to the normal retirement age 65 (age 62 if 30 years of Allowable Service). The monthly reduction factor is 0.50% from normal retirement to age 60 and 0.25% from age 60 to the date benefits begin.

TABLE 14B
COORDINATED
(cont)

Form of Payment	<p>Life annuity. Actuarially equivalent options are: 3 or 15 year certain and life 50%, 75% or 100% bounce back joint and survivor (option is cancelled if member is pre-deceased by beneficiary). Guaranteed refund A larger life annuity before age 62 and reduced thereafter.</p>
Benefit Increases	<p>Benefits are increased 1.5% annually beginning on the January 1 or July 1 following age 65 if the member has been receiving benefits for at least 24 months. Beneficiaries are entitled to the same increase the member would have received.</p> <p>In addition, if the investment income of the fund was at least 6% of the asset value of the fund at the end of the year, the Board of Trustees may declare a bonus of up to 1% of the asset value of the fund at the end of the previous fiscal year. This bonus is allocated to those eligible on a prorated basis if receiving an annuity for at least 3 to 5 years.</p>
DISABILITY Disability Benefit Eligibility	<p>Total and permanent disability before age 65 with 5 years of Allowable Service if age 50 or older, or with 10 years of Allowable Service if younger than age 50. Also, the last 5 years must have been uninterrupted.</p>
Amount	<p>Normal Retirement Benefit based on Allowable Service and Average Salary at disability without reduction for commencement before age 65. Benefit is reduced by Workers' Compensation.</p> <p>Payments stop at age 65, or earlier if disability ceases or death occurs. Benefits may be reduced on resumption of partial employment.</p>
Form of Payment	Same as for retirement.
Benefit Increases	<p>Benefits are increased 1.5% annually beginning on the January 1 or July 1 following nine years of disability or upon reaching age 60, if earlier.</p>

TABLE 14B
COORDINATED
(cont)

**Retirement After
Disability
Eligibility**

Age 65 with continued disability.

Amount

Any optional annuity continues. Otherwise the larger of the disability benefit paid before age 65 or the normal retirement benefit available at age 65, or an actuarially equivalent optional annuity.

Benefit Increases

Same as for retirement.

DEATH
**Surviving Spouse
Annuity
Eligibility**

Member who dies before retirement benefits commence if age 55 with 10 years of Allowable Service or any age with 30 years of Allowable Service.

Amount

Survivor's payment of the 100% joint and survivor benefit the member could have elected if terminated.

Benefit Increases

Same as retirement based on the age on the member as if he were alive.

**Refund of Contributions
Eligibility**

Member dies before receiving any retirement benefits and survivor benefits are not payable.

Amount

Member's contributions with 5% interest.

TERMINATION
**Refund of Contributions
Eligibility**

Termination of teaching service.

Amount

Member's contributions with 5% interest. A deferred annuity may be elected in lieu of a refund.

**Deferred Annuity
Eligibility**

10 years of Allowable Service.

Amount

Benefit computed under law in effect at termination. Amount is payable as a normal or early retirement.

MINNEAPOLIS TEACHERS' RETIREMENT FUND

TABLE 15B
COORDINATED

MEMBERSHIP CHANGES (DOLLARS IN THOUSANDS)

JUNE 30, 1985

A. ACTIVE MEMBERS		<u>NUMBER</u>	<u>PAYROLL</u>
1. As of the Last Valuation Date		649	\$9,864
2. New Entrants		81	NA
3. Total		730	NA
4. Separations from Active Service			
a. Refund of Contributions		NA	NA
b. Separation with Deferred Annuity		NA	NA
c. Separation with neither Refund nor Deferred Annuity		NA	NA
d. Disability		NA	NA
e. Death		NA	NA
f. Retirement with Service Annuity		NA	NA
5. Total Separations		NA	NA
6. Data Adjustments		(78)	NA
7. As of Current Valuation Date		652	\$11,900
B. SERVICE RETIREMENT ANNUITANTS		<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date		0	\$0
2. New Entrants		0	0
3. Total		0	0
4. Terminations			
a. Deaths		0	0
b. Others		0	0
5. Total Terminations		0	0
6. Data Adjustments		0	0
7. As of Current Valuation Date		0	\$0
C. DISABLED ANNUITANTS		<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date		0	\$0
2. New Entrants		0	0
3. Total		0	0
4. Terminations			
a. Deaths		0	0
b. Others		0	0
5. Total Terminations		0	0
6. Data Adjustments		0	0
7. As of Current Valuation Date		0	\$0

TABLE 15B
COORDINATED
(cont)

D. SURVIVING SPOUSE ANNUITANTS		
	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	0	\$0
2. New Entrants	0	0
3. Total	0	0
4. Terminations		
a. Deaths	0	0
b. Others	0	0
5. Total Terminations	0	0
6. Data Adjustments	0	0
7. As of Current Valuation Date	0	\$0
E. SURVIVING CHILDREN ANNUITANTS		
	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	0	\$0
2. New Entrants	0	0
3. Total	0	0
4. Terminations		
a. Deaths	0	0
b. Others	0	0
5. Total Terminations	0	0
6. Data Adjustments	0	0
7. As of Current Valuation Date	0	\$0
F. DEFERRED ANNUITANTS		
	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	NA	NA
2. New Entrants	0	0
3. Total	NA	NA
4. Terminations		
a. Deaths	0	0
b. Others	0	0
5. Total Terminations	0	0
6. Data Adjustments	0	0
7. As of Current Valuation Date	0	\$0