

ST. PAUL TEACHERS' RETIREMENT

FUND ASSOCIATION

Actuarial Valuation Report

January 1, 1984

March 30, 1984

ST. PAUL TEACHERS' RETIREMENT FUND ASSOCIATION

BASIC AND COORDINATED PENSION PLANS

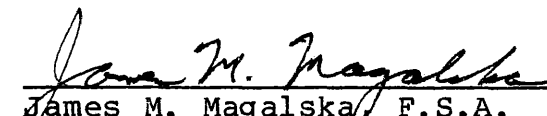
ACTUARIAL VALUATION CERTIFICATION

We present in this report the results of the actuarial valuation of the St. Paul Teachers' Retirement Fund Association Basic and Coordinated Pension Plans as of December 31, 1983.

The employee data and financial information used in this valuation were provided by the Association, and are assumed to be correct.

All costs, liabilities, and other factors under the Plans were determined in accordance with generally accepted actuarial principles and procedures, using the actuarial assumptions and methods described herein. In our opinion, the costs and actuarial exhibits presented in this report fully and fairly disclose the actuarial position of the Plans.

TOUCHE ROSS & CO.


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COMMENTS

This report describes the actuarial valuation of the St. Paul Teachers' Retirement Fund Association Pension Plans as of December 31, 1983.

This valuation has been completed in accordance with Minnesota Law under the supervision of an approved actuary. These laws require the use of the Entry Age Normal cost method, as well as assumed salary increases of 3-1/2% and an assumed investment return of 5% per year.

The first section of this report presents a summary of the members participating in the Plans, followed by a summary of the Financial Statements of Plan Assets. The third section presents our determination of the actuarial status of the Plans, and a summary of plan provisions and actuarial assumptions concludes the report.

The statutory employer contribution rate of 10.7398% of payroll (weighted average for Basic and Coordinated Plans) is significantly below the actuarial requirement of 19.2475% of payroll. The actuarial requirement is the contribution rate that would pay the current cost under the Entry Age Normal cost method (the Normal Cost), and fund the past service liability by the year 2009. This actuarial requirement increased significantly from 18.6881% last year, and this deficit continues to erode the financial stability and security of the St. Paul Teachers' Retirement Plans.

REPORT HIGHLIGHTS

	<u>12/31/83 Valuation</u>	<u>12/31/82 Valuation</u>	For details please see:
Section I. Plan Participation			Page 1
A. Active Members	2,384	2,401*	
B. Members on Leave	159	138*	
C. Substitutes and Part-time Currently Working	350	602	
D. Inactive Members	37	17	
E. Retired Members	944	899	
F. Beneficiaries	98	97	
	<u>3,972</u>	<u>4,154</u>	
Section II. Financial Exhibits			Page 13
A. Assets	\$132,517,579	\$117,983,021	
B. Members' Accumulated Contributions (without interest)	42,326,433	39,071,859	
C. Net Investment Return	12,033,520	9,661,880	
Section III. Actuarial Status of Plans			Page 17
A. Total Rate Requirement	26.4337%	26.0539%	
B. Teacher Contribution Rate (weighted average)	7.1862	7.3658	
C. Employer Statutory Contri- bution Rate (weighted average)	10.7398	11.1568	
D. Deficit	8.5077	7.5313	
Section IV. Summary of Principal Provisions of the Plans			Page 31
Section V. Statement of Actuarial Assumptions			Page 40

*Does not reconcile to last year's valuation due to data corrections

PLAN PARTICIPATION

I. PLAN PARTICIPATION

Employees are required to participate in the retirement program upon their appointment. The Association provided us with data for all participants as of December 31, 1983. Table 1 displays various data concerning the participant group.

Table 1 - Participant Data

	<u>12/31/83</u>	<u>12/31/82</u>
Active members	2,384	2,401*
Members on leave	159	138*
Substitutes and part-time currently working	350	602
Terminated members with vested deferred benefits	37	17
Retired members	944	899
Beneficiaries	98	97
Total	<u>3,972</u>	<u>4,154*</u>
<u>Basic Plan</u>		
Active members	1,787	1,867
Leave of absence	112	108
Payroll for all active members	\$50,874,389	\$50,515,993
Average salary	\$28,469	\$27,057
Average age	45.78	45.2
Average past service	16.7 years	16.1 years
Average future service	19.24 years	19.8 years
<u>Coordinated Plan</u>		
Active members, part-time, and substitutes	947	1,136
Leave of absence	47	30
Payroll for all active members	\$15,414,735	\$11,179,174
Average salary	\$16,277	\$ 9,841*
Average age	36.88	36.3
Average past service	2.47 years	1.9 years
Average future service	28.13 years	28.7 years

*Does not reconcile to last year's valuation due to data corrections

Table 2 presents a reconciliation of members from December 31, 1982 to December 31, 1983.

Table 2 - Reconciliation of Members

ACTIVE

Active (Including 138 on Leave) as of December 31, 1982	2,539*
------------------------------------------------------------	--------

Additions:

New Appointments 1983	50	
Reappointments	<u>71</u>	
TOTAL		121

Separations:

Deaths	4	
Terminations (including retirement)	<u>113</u>	
		(117)

Active (Including 159 On Leave) as of December 31, 1983	<u>2,543</u>
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Substitutes and Part-Time currently working	<u>350</u>
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Inactive Members	<u><u>1,569</u></u>
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Terminated Members with vested deferred benefits	<u>37</u>
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RETIRED

Retired Members as of December 31, 1982	907*
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Additions During 1983:

Retirement	66	
Disability	<u>6</u>	
TOTAL		72

Separations - Deaths	(35)
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Retired Members as of December 31, 1983	<u>944</u>
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Beneficiaries:

Reversionary	11	
Survivor	68	
Children	<u>19</u>	
TOTAL		<u><u>98</u></u>

*Does not reconcile to last year's valuation due to data corrections

The following tables indicate the distribution of members by age and, for actives, years of service. The total earnings are shown for each group of active members, while the annual pension benefits are shown for retired members and beneficiaries. The Basic Plan is displayed first in subsection A, followed by the Coordinated Plan in subsection B.

A. BASIC PLAN

CONSIDERED EARNINGS
(YEAR ENDED DECEMBER 31, 1983)

TABLE 3 - ACTIVE MALE MEMBERS
(AGE AND CREDITED SERVICE AS OF DECEMBER 31, 1983)

<u>AGE</u>	<u>YEARS OF SERVICE</u>							
	<u>UNDER 1</u>		<u>1</u>		<u>2 TO 4</u>		<u>5 TO 9</u>	
	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>
UNDER 25	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
25 TO 29	0	0	0	0	0	0	1	15803
30 TO 34	0	0	0	0	0	0	22	427692
35 TO 39	0	0	0	0	0	0	30	722576
40 TO 44	0	0	0	0	0	0	19	553552
45 TO 49	0	0	0	0	1	18682	8	205130
50 TO 54	0	0	0	0	0	0	2	49040
55 TO 59	0	0	0	0	0	0	3	89775
60 TO 64	0	0	0	0	0	0	0	0
65 & UP	0	0	0	0	0	0	1	32025
TOTAL	0	\$ 0	0	\$ 0	1	\$ 18682	86	\$ 2095593

<u>AGE</u>	<u>YEARS OF SERVICE</u>							
	<u>10 TO 14</u>		<u>15 TO 19</u>		<u>20 TO 24</u>		<u>25 TO 29</u>	
	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>
UNDER 25	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
25 TO 29	0	0	0	0	0	0	0	0
30 TO 34	23	480323	0	0	0	0	0	0
35 TO 39	91	2443191	25	739132	0	0	0	0
40 TO 44	61	1866364	72	2273312	14	446927	0	0
45 TO 49	29	937416	52	1646012	58	1925418	13	463945
50 TO 54	21	683004	28	877772	39	1271710	70	2362776
55 TO 59	8	272358	12	368149	15	445185	29	995281
60 TO 64	1	30659	7	207795	8	247905	4	132143
65 & UP	0	\$ 0	1	\$ 25200	1	\$ 32025	0	\$ 0
TOTAL	234	\$ 6713315	197	\$ 6137372	135	\$ 4369170	116	\$ 3954145

<u>AGE</u>	<u>YEARS OF SERVICE</u>							
	<u>30 TO 34</u>		<u>35 TO 39</u>		<u>40 & UP</u>		<u>ALL</u>	
	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>
UNDER 25	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
25 TO 29	0	0	0	0	0	0	1	15803
30 TO 34	0	0	0	0	0	0	45	908015
35 TO 39	0	0	0	0	0	0	146	3904899
40 TO 44	0	0	0	0	0	0	166	5140155
45 TO 49	0	0	0	0	0	0	161	5196603
50 TO 54	16	617401	0	0	0	0	176	5861703
55 TO 59	47	1572205	16	616093	0	0	130	4359046
60 TO 64	8	282515	9	309648	0	0	37	1210665
65 & UP	1	30660	2	94117	0	0	6	214027
TOTAL	72	\$ 2502781	27	\$ 1019858	0	\$ 0	868	\$ 26810916

A. BASIC PLAN (CONTINUED)

CONSIDERED EARNINGS
(YEAR ENDED DECEMBER 31, 1983)

TABLE 4 - ACTIVE FEMALE MEMBERS
(AGE AND CREDITED SERVICE AS OF DECEMBER 31, 1983)

AGE	YEARS OF SERVICE							
	UNDER 1		1		2 TO 4		5 TO 9	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
UNDER 25	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
25 TO 29	0	0	0	0	0	0	14	223046
30 TO 34	0	0	0	0	4	47502	81	1436788
35 TO 39	0	0	0	0	4	71716	45	935446
40 TO 44	0	0	0	0	1	8873	26	541605
45 TO 49	0	0	0	0	1	22890	23	565342
50 TO 54	1	32025	0	0	1	9608	11	265704
55 TO 59	0	0	0	0	0	0	9	179967
60 TO 64	0	0	0	0	0	0	2	44100
65 & UP	0	0	0	0	0	0	0	0
TOTAL	1	\$ 32025	0	\$ 0	11	\$ 160589	211	\$ 4191998

AGE	YEARS OF SERVICE							
	10 TO 14		15 TO 19		20 TO 24		25 TO 29	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
UNDER 25	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
25 TO 29	0	0	0	0	0	0	0	0
30 TO 34	36	780413	0	0	0	0	0	0
35 TO 39	143	3476667	28	821831	0	0	0	0
40 TO 44	56	1651494	48	1501381	8	278714	0	0
45 TO 49	46	1304760	43	1319443	34	1015665	5	160150
50 TO 54	30	815324	25	728036	19	568947	24	776379
55 TO 59	23	651071	19	581648	16	500760	15	441791
60 TO 64	3	76734	11	318675	15	425670	7	215093
65 & UP	2	57855	2	61005	2	61320	0	0
TOTAL	339	\$ 8814318	176	\$ 5332019	94	\$ 2851076	51	\$ 1593413

AGE	YEARS OF SERVICE							
	30 TO 34		35 TO 39		40 & UP		ALL	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
UNDER 25	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
25 TO 29	0	0	0	0	0	0	14	223046
30 TO 34	0	0	0	0	0	0	121	2264703
35 TO 39	0	0	0	0	0	0	220	5305660
40 TO 44	0	0	0	0	0	0	139	3982067
45 TO 49	1	30660	0	0	0	0	153	4418910
50 TO 54	9	277883	1	30660	0	0	121	3504566
55 TO 59	6	203059	4	120015	0	0	92	2678311
60 TO 64	2	64050	4	104370	1	38938	45	1287630
65 & UP	1	26880	3	87885	4	103635	14	398580
TOTAL	19	\$ 602532	12	\$ 342930	5	\$ 142573	919	\$24063473

A. BASIC PLAN (CONTINUED)TABLE 5 - RETIRED ON SERVICE PENSION

<u>AGE</u>	<u>MALE</u>		<u>FEMALE</u>	
	<u>NUMBER</u>	<u>ANNUAL PENSION</u>	<u>NUMBER</u>	<u>ANNUAL PENSION</u>
55	2	\$ 19104	1	\$ 1774
56	5	67056	1	5150
57	5	57963	4	30205
58	5	65514	3	27639
59	10	177160	4	43590
60	17	297383	5	45609
61	14	236887	6	73197
62	13	256480	11	122352
63	18	259606	11	134698
64	11	157368	16	222695
65	6	100213	10	122117
66	10	144543	10	75582
67	12	178564	17	156604
68	10	132129	18	157657
69	7	108432	20	176706
70	9	135758	17	143943
71	15	160982	20	134343
72	8	105566	14	123476
73	5	45417	22	155638
74	8	83762	19	144383
75	3	25416	20	135580
76	5	53153	21	154665
77	3	27384	31	205048
78	4	40223	24	142686
79	6	51053	25	144647
80	1	6072	31	159103
81	5	33568	33	161480
82	1	6274	16	72617
83	3	14650	21	86818
84	4	18598	18	74066
85	0	0	17	72463
86	2	9874	15	60104
87	0	0	13	47633
88	0	0	13	47072
89	2	8749	13	51619
90	1	4238	13	52975
91	1	4221	13	44762
92	0	0	7	26692
93	0	0	4	14880
94	0	0	7	26055
95	0	0	5	18282
96	0	0	2	6292
100	0	0	2	5948
TOTAL	231	\$ 3093360	593	\$ 3908845

A. BASIC PLAN (CONTINUED)TABLE 6 - RETIRED ON LIMITED PENSION

<u>AGE</u>	<u>NUMBER</u>	<u>MALE</u>	<u>FEMALE</u>	<u>ANNUAL PENSION</u>
		<u>ANNUAL PENSION</u>	<u>NUMBER</u>	
55	0	\$ 0	1	\$ 5938
56	0	0	2	6071
57	0	0	2	8219
59	0	0	3	14233
61	0	0	4	19240
62	0	0	2	6578
64	1	9266	3	22848
65	0	0	3	25838
66	2	21525	2	11591
67	0	0	5	49440
68	0	0	1	7984
70	2	16252	6	39179
71	2	7122	5	21220
72	1	3538	8	22345
73	1	470	3	8263
74	0	0	4	16662
75	0	0	1	2925
77	0	0	3	14328
78	1	3132	0	0
80	1	3180	3	11016
81	0	0	1	2460
83	0	0	1	2700
86	0	0	1	2738
87	1	2312	0	0
88	0	0	2	5055
90	0	0	1	2546
92	0	0	1	2294
96	0	0	1	2281
TOTAL	12	\$ 66797	69	\$ 333992

A. BASIC PLAN (CONTINUED)TABLE 7 - RETIRED ON DISABILITY PENSION

<u>AGE</u>	<u>NUMBER</u>	<u>MALE</u>	<u>FEMALE</u>	<u>ANNUAL PENSION</u>
		<u>ANNUAL PENSION</u>	<u>NUMBER</u>	
31	1	\$ 22789	0	\$ 0
42	0	0	1	9709
49	1	19785	0	0
50	0	0	2	37003
51	1	15216	0	0
53	0	0	1	5375
54	2	31248	0	0
55	2	41248	0	0
56	0	0	2	25053
59	1	17030	0	0
61	1	24504	2	41714
63	2	33001	1	14748
64	1	16949	3	43479
65	0	0	1	7759
67	0	0	1	10590
69	0	0	1	12951
TOTAL	12	\$ 221770	15	\$ 208381

TABLE 8 - RETIRED WITH REVERSIONARY PENSIONS

<u>AGE</u>	<u>NUMBER</u>	<u>MALE</u>	<u>FEMALE</u>	<u>ANNUAL PENSION</u>
		<u>ANNUAL PENSION</u>	<u>NUMBER</u>	
84	1	\$ 4403	1	\$ 3758
87	0	0	1	4129
TOTAL	1	\$ 4403	2	\$ 7887

A. BASIC PLAN (CONTINUED)

TABLE 9 - SURVIVOR ANNUITIES

<u>C H I L D R E N</u>				
		<u>ANNUAL</u>		
		<u>NUMBER</u>	<u>PENSION</u>	
		19	\$	81512
<u>REGULAR SURVIVORS</u>				
<u>AGE</u>	<u>NUMBER</u>	<u>MALE</u>	<u>ANNUAL</u>	<u>FEMALE</u>
			<u>PENSION</u>	<u>NUMBER</u>
				<u>PENSION</u>
45	0	\$	0	1 \$ 5155
46	0		0	2 18449
47	0		0	1 4291
53	0		0	2 13321
55	1		3477	0 0
57	0		0	3 24469
58	1		1248	2 15829
59	1		3900	3 25514
60	0		0	1 2520
61	0		0	2 16719
62	0		0	2 10555
64	0		0	4 30415
65	0		0	1 8192
66	2		8835	2 5541
67	3		22250	1 10659
68	0		0	3 38759
70	1		6395	2 10093
71	1		6219	2 15084
72	2		11821	2 8203
73	0		0	2 9888
74	0		0	2 11979
75	1		1839	0 0
76	1		960	2 5069
77	0		0	1 5208
78	2		7113	3 11627
79	1		3407	2 15280
81	0		0	1 3524
84	1		2610	1 4734
TOTAL	18	\$	80074	50 \$ 331077

REVERSIONARY SURVIVORS

<u>AGE</u>	<u>NUMBER</u>	<u>FEMALE</u>	<u>ANNUAL</u>
			<u>PENSION</u>
73	1	\$	1371
77	1		1441
79	1		1045
81	1		2685
83	4		9070
87	1		1814
88	1		1479
91	1		3228
TOTAL	11	\$	22133

A. COORDINATED PLAN

CONSIDERED EARNINGS
(YEAR ENDED DECEMBER 31, 1983)

TABLE 10 - ACTIVE MALE MEMBERS
(AGE AND CREDITED SERVICE AS OF DECEMBER 31, 1983)

AGE	<u>YEARS OF SERVICE</u>							
	<u>UNDER 1</u>		<u>1</u>		<u>2 TO 4</u>		<u>5 TO 9</u>	
	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>
UNDER 25	13	\$ 141960	1	\$ 10187	0	\$ 0	0	\$ 0
25 TO 29	20	252232	6	90746	9	143955	6	96233
30 TO 34	19	249708	7	120698	21	364893	20	373435
35 TO 39	14	197179	4	73941	13	246241	12	262834
40 TO 44	8	69808	3	70560	10	209641	15	431093
45 TO 49	8	104231	5	92931	7	160231	3	73448
50 TO 54	7	51364	1	9450	4	72082	3	95550
55 TO 59	3	21774	0	0	2	29239	2	63806
60 TO 64	3	20790	1	18060	1	20107	0	0
65 & UP	2	0	0	0	0	0	0	0
TOTAL	97	\$ 1109046	28	\$ 486573	67	\$ 1246389	61	\$ 1396399

AGE	<u>YEARS OF SERVICE</u>							
	<u>10 TO 14</u>		<u>15 TO 19</u>		<u>20 TO 24</u>		<u>25 TO 29</u>	
	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>
UNDER 25	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
25 TO 29	0	0	0	0	0	0	0	0
30 TO 34	0	0	0	0	0	0	0	0
35 TO 39	0	0	0	0	0	0	0	0
40 TO 44	0	0	0	0	0	0	0	0
45 TO 49	0	0	0	0	0	0	0	0
50 TO 54	0	0	0	0	0	0	0	0
55 TO 59	0	0	0	0	0	0	0	0
60 TO 64	0	0	0	0	0	0	0	0
65 & UP	0	0	0	0	0	0	0	0
TOTAL	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0

AGE	<u>YEARS OF SERVICE</u>							
	<u>30 TO 34</u>		<u>35 TO 39</u>		<u>40 & UP</u>		<u>ALL</u>	
	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>	<u>NO.</u>	<u>EARNINGS</u>
UNDER 25	0	\$ 0	0	\$ 0	0	\$ 0	14	\$ 152147
25 TO 29	0	0	0	0	0	0	41	583166
30 TO 34	0	0	0	0	0	0	67	1108734
35 TO 39	0	0	0	0	0	0	43	780195
40 TO 44	0	0	0	0	0	0	36	781102
45 TO 49	0	0	0	0	0	0	23	430841
50 TO 54	0	0	0	0	0	0	15	228446
55 TO 59	0	0	0	0	0	0	7	114819
60 TO 64	0	0	0	0	0	0	5	58957
65 & UP	0	0	0	0	0	0	2	0
TOTAL	0	\$ 0	0	\$ 0	0	\$ 0	253	\$ 4238407

A. COORDINATED PLAN (CONTINUED)

CONSIDERED EARNINGS
(YEAR ENDED DECEMBER 31, 1983)

TABLE 11 - ACTIVE FEMALE MEMBERS
(AGE AND CREDITED SERVICE AS OF DECEMBER 31, 1983)

AGE	YEARS OF SERVICE							
	UNDER 1		1		2 TO 4		5 TO 9	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
UNDER 25	35	\$ 400810	2	\$ 27101	1	\$ 15539	1	\$ 8786
25 TO 29	62	787266	17	223830	60	925711	22	349284
30 TO 34	34	374924	19	264443	54	966608	34	614988
35 TO 39	40	561019	4	66203	41	746293	28	664801
40 TO 44	22	275585	12	123360	33	635655	22	524811
45 TO 49	17	240635	9	90699	28	540339	17	414224
50 TO 54	11	151191	3	42883	15	254905	10	235058
55 TO 59	9	120242	3	39795	8	97657	6	132012
60 TO 64	0	0	1	9450	6	66610	3	72660
65 & UP	1	0	0	0	2	31740	0	0
TOTAL	231	\$ 2911672	70	\$ 887764	248	\$ 4281057	143	\$ 3016624

AGE	YEARS OF SERVICE							
	10 TO 14		15 TO 19		20 TO 24		25 TO 29	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
UNDER 25	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
25 TO 29	0	0	0	0	0	0	0	0
30 TO 34	0	0	0	0	0	0	0	0
35 TO 39	0	0	0	0	0	0	0	0
40 TO 44	0	0	0	0	0	0	0	0
45 TO 49	0	0	0	0	0	0	0	0
50 TO 54	1	30660	0	0	0	0	0	0
55 TO 59	0	0	1	48551	0	0	0	0
60 TO 64	0	0	0	0	0	0	0	0
65 & UP	0	0	0	0	0	0	0	0
TOTAL	1	\$ 30660	1	\$ 48551	0	\$ 0	0	\$ 0

AGE	YEARS OF SERVICE							
	30 TO 34		35 TO 39		40 & UP		ALL	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
UNDER 25	0	\$ 0	0	\$ 0	0	\$ 0	39	\$ 452236
25 TO 29	0	0	0	0	0	0	161	2286091
30 TO 34	0	0	0	0	0	0	141	2220963
35 TO 39	0	0	0	0	0	0	113	2038316
40 TO 44	0	0	0	0	0	0	89	1559411
45 TO 49	0	0	0	0	0	0	71	1285897
50 TO 54	0	0	0	0	0	0	40	714697
55 TO 59	0	0	0	0	0	0	27	438257
60 TO 64	0	0	0	0	0	0	10	148720
65 & UP	0	0	0	0	0	0	3	31740
TOTAL	0	\$ 0	0	\$ 0	0	\$ 0	694	\$11176328

A. COORDINATED PLAN (CONTINUED)

TABLE 12 - RETIRED ON SERVICE PENSION

<u>AGE</u>	<u>NUMBER</u>	<u>MALE</u>	<u>FEMALE</u>	<u>ANNUAL PENSION</u>
		<u>ANNUAL PENSION</u>	<u>NUMBER</u>	
60	0	\$ 0	1	\$ 4766
62	1	7592	0	0
64	0	0	1	12053
66	0	0	1	4901
67	0	0	1	932
68	0	0	2	11938
69	0	0	1	574
70	0	0	1	1322
TOTAL	1	\$ 7592	8	\$ 36486

FINANCIAL EXHIBITS

II. FINANCIAL EXHIBITS

Table 13 - Financial Balance Sheet
(December 31, 1983)

A s s e t s

Cash	\$ 32,512.42
Receivables:	
Interest	1,604,154.29
Dividends	177,884.78
Employer Contribution	805,240.87
Repaid Principal	26,920.65
Short-term Notes, at Discounted Value	10,027,878.58
Bonds at Amortized Cost	55,870,991.60
Mortgages at Amortized Cost	3,149,145.22
Real Estate at Amortized Cost	729,392.36
Stocks at Cost	54,642,472.31
Deferred Yield Adjustment Account	5,649,058.21
Equipment Less Depreciation	11,204.54
Stock Purchase and Withholding Tax Payable	(209,276.97)
TOTAL ASSETS	\$132,517,578.86
Members Accumulated Contributions (without interest)	\$ 42,326,432.99
Administration Expenses - 1983	\$ 249,834.07

Table 14 - Reconciliation of Asset Balances
(December 31, 1983)

Asset Balance - December 31, 1982		\$117,983,020.97
Additions:		
Employer Contributions	\$ 5,990,211.29	
Member Contributions	5,691,891.86	
Investment Income	10,188,141.16	
Gain on Sale of Stock	2,460,582.24	
Miscellaneous Income	<u>1,422.95</u>	<u>24,332,249.50</u>
Sub-Total		\$142,315,270.47
Deductions:		
Benefit Payments	\$ 8,553,706.78	
Refunds	377,524.45	
Administrative Expenses	249,834.07	
Loss on Sale of Stock	<u>616,626.31</u>	<u>9,797,691.61</u>
Asset Balance - December 31, 1983		<u>\$132,517,578.86</u>

Table 15 - Asset Allocation
(December 31, 1983)

	<u>Basic Division</u>	<u>Coordinated Division</u>	<u>Total</u>
Asset Balance, 12/31/82	\$114,261,656.44	\$3,721,364.53	\$117,983,020.97
(a) Employer Con- tributions	5,688,650.69	301,560.60	5,990,211.29
(b) Employee Con- tributions	4,949,966.19	741,925.67	5,691,891.86
(c) Benefits Paid	(8,509,630.06)	(44,076.72)	(8,553,706.78)
(d) Refunds	(277,224.58)	(100,299.87)	(377,524.45)
(e) Net	<u>1,851,762.24</u>	<u>899,109.68</u>	<u>2,750,871.92</u>
(f) Investment Income	11,613,014.92	420,505.12	12,033,520.04
(g) Adminis- trative Expenses	(191,738.18)	(58,095.89)	(249,834.07)
(h) Net: (f) + (g)	<u>11,421,276.74</u>	<u>362,409.23</u>	<u>11,783,685.97</u>
(i) Increase for Year	13,273,038.98	1,261,518.91	\$ 14,534,557.89
Asset Balance, 12/31/83	<u>\$127,534,695.42</u>	<u>\$4,982,883.44</u>	<u>\$132,517,578.86</u>

ACTUARIAL STATUS OF PLANS

III. ACTUARIAL STATUS OF PLANS

The actuarial cost method used to determine the funding pattern for these plans is called the "Entry Age Normal" cost method. Under this method, the Accrued Liability is determined by taking the excess of the present value of projected benefits over the present value of future normal costs. The Accrued Liability is a measure of the assets that would be accumulated in the Plans if all past contribution requirements had been fully funded and all actuarial assumptions had been realized. The Unfunded Liability is defined as the difference between the Accrued Liability and the assets at the valuation date.

We will determine the Present Value of Plan Benefits, the Accrued Liability, the Entry Age Normal level contribution requirement (Normal Cost), and the contribution required to amortize the Unfunded Liability by the year 2009. We will then compare those contribution requirements with the Statutory Contribution Rate to determine the sufficiency of current contributions. We will also analyze the change in the Unfunded Liability over the last year. These calculations will be presented for the Basic Plan and Coordinated Plan combined in subsection A, followed by computations for each Plan separately in subsections B and C.

A. BASIC AND COORDINATED PLANS COMBINED

Table 16 - Present Value of Future Benefits
(December 31, 1983)

Present Value of Benefits Expected to be Paid by Retirement Fund to:

(a) Active Teachers:

Retirement	\$223,261,217
Disability	17,142,026
Survivorship	17,960,072
Refund	<u>14,521,141</u>

Total	\$272,884,456
-------	---------------

(b) Vested Teachers	366,156
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(c) Teachers on Leave	3,387,424
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(d) Former Teachers without Vested Rights	371,277
----------------------------------------------	---------

(e) Teachers and Beneficiaries
Now Receiving Benefits:

Retirement	\$ 76,593,586
Disability	2,318,826
Survivorship	<u>4,603,335</u>

Total	<u>83,515,747</u>
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Total Present Value of Benefits	<u>\$360,525,060</u>
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Table 17 - Unfunded Liability

(a) Present Value of Benefits	\$360,525,060
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(b) Present Value of Future Normal Costs	74,108,280
---------------------------------------------	------------

(c) Accrued Liability (a) - (b)	286,416,780
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(d) Assets	132,517,578
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(e) Unfunded Liability (c) - (d)	153,899,202
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A. BASIC AND COORDINATED PLANS COMBINED (continued)

Table 18 - Rate Requirement for Amortization
of Unfunded Liability

Amount to be Amortized	\$153,899,202
Contribution Requirement for Amortization Period of 26 Years	10,705,893
Current Payroll	66,289,124
Amortization Rate Requirement	16.1503%

Table 19 - Level Contribution (Entry Age Normal)
Rate Requirement

Entry Age Normal Rate Requirement in Dollars	\$ 6,566,903
Current Payroll	66,289,124
Entry Age Normal Rate Requirement as a Percent of Pay	9.9065%
Teacher Contribution Rate*	<u>7.1862%</u>
Employer Entry Age Normal Rate Requirement	2.7203%

Table 20 - Actuarial Balance

Employer Statutory Contribution Rate**	10.7398%
Rate Requirements	
Amortization Rate Requirement	16.1503%
Entry Age Normal Rate Requirement	2.7203
Expenses Rate Requirement	<u>.3769</u>
Total Rate Requirement	<u>19.2475%</u>
Deficit of Statutory Rate over Rate Requirement	<u>8.5077%</u>

* Weighted by Current Payroll, 76.75% Basic and 23.25% Coordinated.

** Rate established by Minnesota Statute, 12.63% Basic and 4.5% Coordinated, weighted by Current Payroll.

A. BASIC AND COORDINATED PLANS COMBINED (continued)

Table 21 - Statement of Revenue, Expenditures, and
Changes in Unfunded Liability
(Year Ended December 31, 1983)

(a) Revenue:		
Employer Contributions	\$ 5,990,211.29	
Employee Contributions	5,691,891.86	
Net Investment Income	<u>12,033,520.04</u>	
Total Revenue		\$23,715,623.19
(b) Expenditures:		
Benefits	8,553,706.78	
Refund of Dues	377,524.45	
Administrative Expense	<u>249,834.07</u>	
Total Expenditures		<u>9,181,065.30</u>
(c) Increase in Assets (1983): (a) - (b)		14,534,557.89
(d) Increase in Accrued Liability		
(i) Accrued liability		
at 12/31/83	286,416,780.00	
(ii) Accrued liability		
at 12/31/82	<u>256,467,020.00</u>	
(iii) Increase		29,949,760.00
(e) Increase (Decrease) in Unfunded Liability		<u>\$15,415,202.11</u>

A. BASIC AND COORDINATED PLANS COMBINED (continued)

Table 22 - Analysis of Increase (Decrease) in
Unfunded Liability
(Year Ended December 31, 1983)

(a) Change in Earnings in Excess of 3.5%	\$ 3,528,409
(b) Principal of Unfunded Liability Anticipated in Total Rate Requirement	 (2,533,130)
(c) Difference between expected statutory and actual contributions	 591,461
(d) Deficiency in Total Rate Require- ment over Statutory Rate	 <u>4,754,384</u>
(e) Increase Due to Amortization	2,812,715
(f) Investment Income in Excess of 5%: Loss (Gain)	 (6,071,843)
(g) Revised Valuation of Death Benefits for Retirees	 10,677,770
(h) Experience Variation: Loss (Gain)	 <u>4,468,151</u>
(i) Total Increase (Decrease)	 <u><u>\$15,415,202</u></u>

B. BASIC PLAN

Table 23 - Present Value of Future Benefits
(December 31, 1983)

Present Value of Benefits Expected to be Paid by Retirement Fund to:

(a) Active Teachers:		
Retirement	\$211,133,906	
Disability	16,242,889	
Survivorship	17,321,317	
Refund	<u>12,447,485</u>	
Total		\$257,145,597
(b) Vested Teachers		366,156
(c) Teachers on Leave		3,289,075
(d) Former Teachers without Vested Rights		179,388
(e) Teachers and Beneficiaries Now Receiving Benefits:		
Retirement	76,105,576	
Disability	2,318,826	
Survivorship	<u>4,603,335</u>	
Total		<u>83,027,737</u>
Total Present Value of Benefits		\$344,007,953

Table 24 - Unfunded Liability

(a) Present Value of Benefits	\$344,007,953
(b) Present Value of Future Normal Costs	64,485,052
(c) Accrued Liability (a) - (b)	279,522,901
(d) Assets	127,534,695
(e) Unfunded Liability (c) - (d)	151,988,206

B. BASIC PLAN (continued)

Table 25 - Rate Requirement for Amortization
of Unfunded Liability

Amount to be Amortized	\$151,988,206
Contribution Requirement for Amortization Period of 26 Years	10,572,956
Current Payroll	50,874,389
Amortization Rate Requirement	20.7825%

Table 26 - Level Contribution (Entry Age Normal)
Rate Requirement

Entry Age Normal Rate Requirement in Dollars	\$ 5,757,732
Current Payroll	50,874,389
Entry Age Normal Rate Requirement as a Percent of Pay	11.3175%
Teacher Contribution Rate*	<u>8.0000</u>
Employer Entry Age Normal Rate Requirement	<u>3.3175%</u>

Table 27 - Actuarial Balance

Employer Statutory Contribution Rate*	12.6300%
Rate Requirements	
Amortization Rate Requirement	20.7825%
Entry Age Normal Rate Requirement	3.3175
Expenses Rate Requirement	<u>.3769</u>
Total Rate Requirement	24.4769%
Deficit of Statutory Rate over Rate Requirement	11.8469%

* Rate established by Minnesota Statute.

B. BASIC PLAN (continued)

Table 28 - Statement of Revenue, Expenditures, and
Changes in Unfunded Liability
 (Year Ended December 31, 1983)

(a) Revenue:		
(i) Employer Contributions	\$ 5,688,650.69	
(ii) Employee Contributions	4,949,966.19	
(iii) Net Investment Income	<u>11,613,014.92</u>	
(iv) Total Revenue		\$22,251,631.80
(b) Expenditures:		
(i) Benefits	\$ 8,509,630.06	
(ii) Refund of Dues	277,224.58	
(iii) Administrative Expense	<u>191,738.18</u>	
(iv) Total Expenditures		<u>8,978,592.82</u>
(c) Increase in Assets (1983)		13,273,038.98
(d) Increase in Accrued Liability		
(i) Accrued liability at 12/31/83	279,522,901.00	
(ii) Accrued liability at 12/31/82	<u>251,346,069.00</u>	
(iii) Increase		28,176,832.00
(e) Increase (Decrease) in Unfunded Liability		<u>\$14,903,793.02</u>

B. BASIC PLAN (continued)

Table 29 - Analysis of Increase (Decrease) in
Unfunded Liability
 (Year Ended December 31, 1983)

(a) Change in Earnings in Excess of 3.5%	\$ 2,941,528
(b) Principal of Unfunded Liability Anticipated in Total Rate Requirement	(2,507,529)
(c) Difference between expected statutory and actual contributions	389,959
(d) Deficiency in Total Rate Require- ment over Statutory Rate	<u>4,939,757</u>
(e) Increase Due to Amortization	2,822,187
(f) Investment Income in Excess of 5%: Loss (Gain)	(5,858,431)
(g) Revised Valuation of Death Benefits for Retirees	10,677,770
(h) Experience Variation: Loss (Gain)	<u>4,320,739</u>
(i) Total Increase (Decrease)	<u><u>\$14,903,793</u></u>

C. COORDINATED PLAN

Table 30 - Present Value of Future Benefits
(December 31, 1983)

Present Value of Benefits Expected to be Paid by Retirement Fund to:

(a) Active Teachers:

Retirement	\$12,127,311
Disability	899,137
Survivorship	638,755
Refund	<u>2,073,656</u>

Total \$15,738,859

(b) Vested Teachers 0

(c) Teachers on Leave 98,349

(d) Former Teachers without Vested Rights 191,889

(e) Teachers and Beneficiaries
Now Receiving Benefits:

Retirement	\$ 488,010
Disability	0
Survivorship	<u>0</u>

Total 488,010

Total Present Value of Benefits \$16,517,107

Table 31 - Unfunded Liability

(a) Present Value of Benefits \$16,517,107

(b) Present Value of Future Normal Costs 9,623,228

(c) Accrued Liability
(a) - (b) 6,893,879

(d) Assets 4,982,883

(e) Unfunded Liability
(c) - (d) 1,910,996

C. COORDINATED PLAN (continued)

Table 32 - Rate Requirement for Amortization
of Unfunded Liability

Amount to be Amortized	\$ 1,910,996
Contribution Requirement for Amortization Period of 26 Years	132,937
Current Payroll	15,414,735
Amortization Rate Requirement	.8624%

Table 33 - Level Contribution (Entry Age Normal)
Rate Requirement

Entry Age Normal Rate Requirement in Dollars	809,171	
Current Payroll	15,414,735	
Entry Age Normal Rate Requirement as a Percent of Pay	5.2493%	
Teacher Contribution Rate*	<u>4.5000%</u>	
Employer Entry Age Normal Rate Requirement		<u>.7493%</u>

Table 34 - Actuarial Balance

Employer Statutory Contribution Rate*	4.5000%
Rate Requirements	
Amortization Rate Requirement	.8624%
Entry Age Normal Rate Requirement	.7493
Expenses Rate Requirement	<u>.3769</u>
Total Rate Requirement	<u>1.9886%</u>
Deficit (Surplus) of Statutory Rate over Rate Requirement	(2.5114%)

* Rate established by Minnesota Statute.

C. COORDINATED PLAN (continued)

Table 35 - Statement of Revenue, Expenditures, and
Changes in Unfunded Liability
 (Year Ended December 31, 1983)

(a) Revenue:			
(i)	Employer Contributions	\$301,560.60	
(ii)	Employee Contributions	741,925.67	
(iii)	Net Investment Income	<u>420,505.12</u>	
(iv)	Total Revenue		\$1,463,991.39
(b) Expenditures:			
(i)	Benefits	44,076.72	
(ii)	Refund of Dues	100,299.87	
(iii)	Administrative Expense	<u>58,095.89</u>	
(iv)	Total Expenditures		<u>202,472.48</u>
(c) Increase in Assets (1983)			1,261,518.91
(d) Increase in Accrued Liability			
(i)	Accrued liability at		
	12/31/83	6,893,879.00	
(ii)	Accrued liability at		
	12/31/82	<u>5,120,951.00</u>	
(iii)	Increase		1,772,928.00
(e) Increase (Decrease) in Unfunded Liability			511,409.09

C. COORDINATED PLAN (continued)

Table 36 - Analysis of Increase (Decrease) in
Unfunded Liability

(Year Ended December 31, 1983)

(a) Change in Earnings in Excess of 3.5%	\$586,881
(b) Principal of Unfunded Liability Anticipated in Total Rate Requirement	(25,601)
(c) Difference between expected statutory and Actual Contributions	201,502
(d) Deficiency (Surplus) in Total Rate Requirement over Statutory Rate	(<u>185,373</u>)
(e) Increase (Decrease) Due to Amortization	(9,472)
(f) Investment Income in Excess of 5%: Loss (Gain)	(213,412)
(g) Experience Variation: Loss (Gain)	<u>147,412</u>
(h) Total Increase (Decrease)	<u>\$511,409</u>

SUMMARY OF PRINCIPAL PROVISIONS
OF THE PLANS

IV. SUMMARY OF PRINCIPAL PROVISIONS OF THE PLANS

BASIC DIVISION

(As Amended Effective February 1, 1983)

1. Name

St. Paul Teachers' Retirement Fund Association.

2. Type of Plan

Self-insured, managed by a Board of Trustees consisting of the Chairman of the Board of Education, Independent School District Number 625 and nine others elected by and from members of the Teachers' Association.

3. Employers Included

Board of Education - City of St. Paul.

4. Employees Included

All employees in the St. Paul Public Schools in a position covered by a certificate issued by the Minnesota State Department of Education and not covered under Section 218 of the Social Security Act.

5. Service Considered for Benefits

All periods of service for which salary deductions were made and service during sabbatical leave. After June 30, 1974, St. Paul service for part-time teachers is granted on a proportional basis of actual duty days to the agreed number of annual duty days. Years of service credited prior to May 31, 1976 shall not be recomputed.

6. Earnings Considered

Annual total salary. Average salary based on the five years during the last 10 years of St. Paul service which produces the highest average. For any member employed on a part-time basis during any of the 10 years, the average is computed on the basis of the amount earned in the time required to complete one full year of service.

7. Employer Contributions

12.63% of payroll.

8. Employee Contributions

8% of annual total salary including salary otherwise payable to a member on sabbatical leave.

If an employee elects to purchase eligible outside service, he may do so pursuant to Article IV, Section 2, Paragraph 2(d) of the Articles of Incorporation and By-Laws as amended effective June 1, 1978.

9. Normal Retirement Benefit

On or after attainment of age 60 and completion of 25 years of service.

Pension equal to 2% of average salary multiplied by the number of years of accredited service; such accredited service limited to a maximum of 40 years.

10. Limited Service Benefit

Upon attainment of age 55 and completion of 10 years of service but less than 25 years of service. Annuity determined as for Normal Retirement considering service and earnings to actual retirement, and reduced (i) by 1/2 of 1% for each of the first 60 months, and (ii) by 1/4 of 1% for each additional month or major fraction thereof between date upon which payment begins and attainment of age 65.

11. Early Retirement Benefit

After attainment of age 55 and completion of 25 years of service. Annuity determined as for Normal Retirement considering service and earnings to actual retirement and reduced by 1/2 of 1% for each month or major fraction thereof between date upon which payment begins and attainment of age 60.

12. Disability Benefit

In the event of total and permanent disability after completion of five years of accredited St. Paul service.

Until age 65 the pension is equal to 75% of annual contract salary for last full year of service minus any Social Security and/or Workmen's Compensation benefits being received.

At age 65 the benefit is recomputed as for Normal Retirement considering average salary and accredited service the disabled member would have had if he had continued to teach in his latest position during his period of disability.

13. Deferred Vested Benefit

In the event of termination after completion of ten years of service. Annuity determined as for Limited Service Benefit above, augmented by interest compounded annually at the rate of 5% until January 1, 1981 and thereafter at the rate of 3%.

14. Death Benefit

Active

- (a) In the event of death prior to retirement and after completion of three years of service, a benefit is payable:
 - (i) For each dependent child, subject to a maximum of two at one time, equal to 25% of the maximum salary payable to a teacher holding a B.A. degree for the year in which the member died, and
 - (ii) To the surviving spouse, maintaining a home and having legal custody of the dependent child or children equal to 15% of the maximum salary in (i) above.

If the surviving spouse is also eligible for the benefits in (b) next following, such spouse may elect either benefits under (b) or the 15% benefit in (ii) above. All benefits attributable to one deceased member are limited to 90% of such member's final pay.

- (b) In the event of death after completion of 10 years of accredited service, the survivor, as defined in the plan, becomes entitled to a benefit based on the annuity earned to the date of the member's death and payable for life, equal to a joint-and-last survivorship annuity under which 100% of the reduced benefit is payable to the survivor.

Retired

In the event of death after retirement, the survivor receives a life annuity equal to the amount earned by the member to the date of his retirement after reduction to a 100% joint-and-last survivorship form of annuity.

15. Cash Refund of Dues

- (a) Upon termination or death of an active member prior to eligibility for any other pension, the full amount of his dues, without interest, paid since January 1, 1940, will be returned to him or to his beneficiary.

- (b) Upon the death of an active member eligible for a dependent children's benefit, but no other benefit under the Plan, the amount of the dues paid since January 1, 1940 which is in excess of the amount payable to the dependent children, without interest, shall be returned to his beneficiary.
- (c) Upon the death of a retired member, who was not survived by a survivor entitled to any other pension under the Plan, the amount of dues paid since January 1, 1940, without interest, in excess of that amount already paid in pension, will be returned to his beneficiary.

In (a) above, if the member terminates and has completed the probationary employment period under the applicable teacher tenure law, all amounts payable after the probationary period are credited with interest in a manner to be determined by the Board of Trustees.

16. Savings Provision

Any member who retires after December 31, 1954 on a Normal, Limited, Early, or Disability Pension, shall receive a pension not less than the maximum amount payable to any member who retired before January 1, 1955 for an equal period of service, including all increases of the pension of such previously retired member becoming effective after December 31, 1954.

17. Proportionate Annuity

At age 65 or under a mandatory retirement statute. Annuity determined as for Normal Retirement based on service prior to termination.

18. Combined Service

Service totaling 10 or more years in any Minnesota funds with the same provision shall be entitled to an annuity from each fund based on their respective service in each fund.

19. State Funded Retiree Increases

Minnesota Statutes Law 1976, Chapter 326 provided increases to certain retirees based on service at retirement and years of retirement. The cost of these increases was provided by an appropriation from the general fund in the State Treasury.

20. Bonus Payment

For each year during which investment income of the fund exceeds $1\frac{1}{2}\%$ of the asset value at the end of the year, a lump sum payment to each retired member and survivor who has received an annuity for at least three years. Amount determined by prorating $1\frac{1}{2}\%$ of the asset value by total years of service of eligible annuitants.

COORDINATED DIVISION

(Most recent amendments effective July 1, 1983,
see items 13 & 17)

1. Name

St. Paul Teachers' Retirement Fund Association.

2. Type of Plan

Self-insured, managed by a Board of Trustees consisting of the Chairman of the Board of Independent School District Number 625 and nine others elected by and from members of the Teachers' Association.

3. Employers Included

Board of Education - City of St. Paul.

4. Employees Included

All employees in the St. Paul Public Schools in a position covered by a certificate issued by the Minnesota State Department of Education who either elected coverage under Section 218 of the Social Security Act, or who were automatically so covered.

5. Service Considered for Benefits

All periods of service for which salary deductions were made and service during sabbatical leave. After June 30, 1974, St. Paul service for part-time teachers is granted on a proportional basis of actual duty days to the agreed number of annual duty days. Years of service credited prior to May 31, 1976 shall not be recomputed.

6. Earnings Considered

Annual total salary. Average salary based on the five successive years of St. Paul service which produces the highest average. For any member employed on a part-time basis during any of the five years, the average is computed on the basis of the amount earned in the time required to complete one full year of service.

7. Employer Contributions

Four and one half percent of pay excluding Social Security taxes.

8. Employee Contributions

Four and one half percent of annual total salary including salary otherwise payable to a member on sabbatical leave.

9. Normal Retirement Benefit

Age 65 and completion of 10 years of service or after attainment of age 62 and completion of 30 years of service.

Pension equal to 1% of average salary for each of the first 10 years of accredited service, plus 1-1/2% of average salary for each year of accredited service in excess of 10 years; such accredited service limited to a maximum of 40 years.

10. Early Retirement Benefit

After completion of 30 years of service or attainment of age 55 and completion of 10 years of service. Annuity determined as for Normal Retirement considering service and earnings to actual retirement. For member with less than 30 years of service, annuities are reduced by 1/2% per month for each month under age 65 and by 1/4% per month for each month under age 60. For member with 30 years of service, annuities are reduced by 1/2% per month for each month under age 62 and by 1/4% per month for each month under age 60.

11. Disability Benefit

In the event of total and permanent disability after completion of 10 years of service or after attainment of age 50 and completion of five years service, with average salary of at least \$75 per month.

The benefit is computed as for Normal Retirement considering average salary and accredited service at time of disability. Disability recipients automatically assume retirement status at age 65 with the right to choose a life annuity equal to their disability benefit or to choose an optional annuity plan with provisions for payment to beneficiaries.

12. Deferred Vested Benefit

In the event of termination after completion of 10 years of service. Annuity determined as for Normal Retirement payable at minimum retirement age, augmented by interest compounded annually at the rate of 5% until January 1, 1981 and thereafter at the rate of 3%.

13. Death Benefit

Active

After completion of 30 years of service or attainment of age 55 and completion of 20 years of service, a joint and survivor annuity payable to the surviving spouse in the event of death prior to retirement.

Retired

Upon retirement a member may elect an optional annuity to provide a reduced pension payable for life and survivor benefit to a contingent annuitant.

14. Cash Refund of Dues

- (a) Upon termination of an active member prior to eligibility for any other pension, the full amount of his dues will be returned to him. If he is age 65 and elects refund of dues in lieu of proportionate annuity, interest will be credited on the contributions.
- (b) Upon death of an active member prior to eligibility for any other pension, the full amount of his dues plus 3-1/2% interest, will be returned to his beneficiary.

15. Proportionate Annuity

At age 65 or under a mandatory retirement statute. Annuity determined as for Normal Retirement based on service prior to termination.

16. Combined Service

Service totaling 10 or more years in any Minnesota funds with the same provision shall be entitled to an annuity from each fund based on their respective service in each fund.

17. Optional Annuity Plans

In lieu of a lifetime monthly annuity, a member may elect to convert his pension into an actuarially equivalent optional pension in the form of a 100% joint and survivor benefit, 50% joint and survivor benefit, 15 years' certain and life benefit, a guaranteed refund benefit, a Social Security leveling option, or a joint and survivor option. If such an option is elected and the contingent annuitant predeceases the member, the member will thereafter receive the unreduced benefit amount.

18. Bonus Payment

For each year during which investment income of the fund exceeds 5-1/2% of the asset value at the end of the year, a lump sum payment to each retired member and survivor who has received an annuity for at least three years. Amount determined by prorating 1/2% of the asset value by total years of service of eligible annuitants.

STATEMENT OF ACTUARIAL ASSUMPTIONS

V. STATEMENT OF ACTUARIAL ASSUMPTIONS

Based on the experience analysis through December 31, 1975, the following assumptions have been used in determining the actuarial liabilities of the Fund:

Interest:	5% per annum, compounded annually.
Mortality:	Group Annuity Table for 1951 projected with scale C through 1965. See following tables.
Post-Disablement Mortality:	Group Annuity Table for 1951 projected with scale C to 1965, set forward 10 years.
Assumed Retirement Age:	Age 65.
Disability:	See following tables.
Separation:	See following tables.
Valuation Payroll:	Use "Contract Pay" as of the valuation date adjusted for any contract changes not yet reflected in the participant data (a 5% increase was used at 1/1/84).
Salary Scale:	3-1/2% per annum, compounded annually.
Social Security Disability Benefit Offset:	Based on the present law and 3-1/2% salary scale applicable on current salaries. The wage base is assumed to increase at 3-1/2% per annum and the Cost-of-Living Adjustment is assumed to increase at 3% per annum.
Assumed Survivor Status:	Assumed married - 85% of males. - 60% of females. Female is assumed to be 4 years younger.

Contribution Refund: All participants who terminate other than by death, disability, or retirement are assumed to take refund of contributions.

The above assumptions are unchanged from last year's report. A detailed statement of the mortality rates, disability rates, and turnover rates is set forth on the following pages.

MORTALITY RATES

(Per 1,000 Employees)

Male Employees

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	.517	45	3.002
21	.537	46	3.409
22	.558	47	3.856
23	.581	48	4.344
24	.607	49	4.869
25	.636	50	5.429
26	.667	51	6.027
27	.703	52	6.656
28	.742	53	7.321
29	.784	54	8.019
30	.831	55	8.751
31	.884	56	9.514
32	.941	57	10.312
33	1.005	58	11.154
34	1.074	59	12.057
35	1.152	60	13.043
36	1.237	61	14.143
37	1.331	62	15.390
38	1.435	63	16.828
39	1.550	64	18.504
40	1.677	65	20.475
41	1.838		
42	2.054		
43	2.322		
44	2.639		

MORTALITY RATES

(Per 1,000 Employees)

Female Employees

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	.311	45	1.672
21	.330	46	1.819
22	.349	47	1.980
23	.369	48	2.158
24	.392	49	2.355
25	.415	50	2.574
26	.439	51	2.783
27	.466	52	3.016
28	.496	53	3.277
29	.527	54	3.570
30	.561	55	3.898
31	.597	56	4.278
32	.637	57	4.727
33	.681	58	5.253
34	.728	59	5.867
35	.780	60	6.572
36	.836	61	7.369
37	.898	62	8.258
38	.966	63	9.232
39	1.040	64	10.284
40	1.122	65	11.402
41	1.213		
42	1.311		
43	1.420		
44	1.540		

DISABILITY RATES

(Per 1,000 Employees)

All Employees

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	.70	45	1.62
21	.71	46	1.76
22	.72	47	1.91
23	.73	48	2.07
24	.74	49	2.23
25	.75	50	2.40
26	.76	51	2.60
27	.78	52	2.86
28	.80	53	3.18
29	.82	54	3.56
30	.84	55	4.00
31	.86	56	4.59
32	.88	57	5.34
33	.90	58	6.10
34	.93	59	7.20
35	.96	60	8.43
36	.99	61	9.75
37	1.03	62	11.30
38	1.07	63	13.05
39	1.11	64	14.90
40	1.15		
41	1.20		
42	1.27		
43	1.36		
44	1.48		

SEPARATION RATES

(Per 1,000 Employees)

Male Employees

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	191	40	25
21	177	41	23
22	163	42	21
23	149	43	19
24	135	44	17
25	122	45	16
26	112	46	16
27	102	47	15
28	92	48	14
29	83	49	13
30	74	50	12
31	67	51	12
32	61	52	11
33	55	53	11
34	49	54	10
35	43	55	9
36	39	56	7
37	35	57	5
38	31	58	3
39	28	59	1

SEPARATION RATES

(Per 1,000 Employees)

Female Employees

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	275	40	80
21	271	41	72
22	267	42	64
23	263	43	56
24	259	44	49
25	255	45	42
26	247	46	37
27	239	47	32
28	231	48	27
29	222	49	23
30	213	50	19
31	199	51	16
32	185	52	14
33	171	53	12
34	157	54	10
35	142	55	8
36	129	56	6
37	116	57	4
38	104	58	2
39	92	59	1