

**MINNESOTA STATE
RETIREMENT SYSTEM**

Actuarial Valuations
as of
JUNE 30, 1985

STATE EMPLOYEES RETIREMENT FUND

STATE PATROL RETIREMENT FUND

JUDGES RETIREMENT FUND

LEGISLATORS RETIREMENT PLAN

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

ACTUARIAL VALUATION AS OF

JUNE 30, 1985

Touche Ross & Co.

Board of Directors
Minnesota State Retirement System
529 Jackson at 10th Street
St. Paul, Minnesota


Ladies and Gentlemen:

We have performed an actuarial valuation of the Minnesota State Retirement System, State Employees' Retirement Fund as of June 30, 1985.

The valuation was performed on the basis of accepted actuarial methods and procedures, in accordance with the applicable provisions set forth in Minnesota Statutes (Chapter 356) and stipulated in the Contract between the State of Minnesota and Touche Ross & Co.

We hereby certify that on the basis of our valuation, contributions required from employees and the State under Minnesota Statutes (Chapter 352) represent 95.7% of the requirements set forth in Chapter 356. Furthermore, the entry age normal cost method was utilized in determining the accrued liability for all benefits payable under the Fund, and the valuation was completed in accordance with the rules adopted by the Legislative Commission on Pensions and Retirement, with the exception of the rule requiring a cash flow projection.

TOUCHE ROSS & CO.


James M. Magalska, F.S.A.


James F. Verlautz, F.S.A.

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REPORT HIGHLIGHTS

Comparison with Previous Valuation

	<u>6/30/85</u>	<u>6/30/84</u>
A. Financial and Actuarial Status		
1. Valuation Assets	\$1,158,383,330	\$ 996,003,433
2. Accrued Liability	1,518,939,395	1,311,550,300
3. Unfunded Accrued Liability (A2 - A1)	360,556,065	315,546,867
4. Accrued Liability Funding Ratio (A1/A2)	76.26%	75.94%
5. Normal Cost		
General Plan	\$62,719,753 (6.11%)*	\$55,387,116 (6.13%)*
Correctional Plan	2,931,378 (9.43%)*	2,562,340 (9.49%)*
B. Contributions		
1. Chapter 356 Requirement	86,250,460	74,573,650
2. Actual Prescribed Contribution (Chapter 352)	82,575,178	72,545,081
3. Sufficiency (B2/B1)	.957	.973
C. Depth of Funding - Plan Contin- uation Basis		
1. Present Value of Accrued Benefits	\$1,235,489,884	\$1,069,079,217
2. Depth of Funding (A1/C1)	93.76%	93.16%

* Parentheses indicate contribution levels as a percentage of salary for participants not assumed to retire immediately under the Rule of 85.

REPORT HIGHLIGHTS (continued)

	<u>6/30/85</u>	<u>6/30/84</u>
D. Plan Participants		
1. Active Members		
a. Number	45,597	45,332
b. Payroll of employees under assumed retirement age	\$1,057,928,600	\$929,661,232
c. Total payroll	1,079,714,997	949,950,593
2. Retired Members/Beneficiaries		
a. Number	11,696	11,169
b. Average annual benefit payable	\$3,728	\$3,349
3. Deferred Annuitants		
a. Number	930	877
b. Average annual vested benefit	\$4,103	3,953
4. Former Members Without Vested Rights		
a. Number	4,960	5,590
b. Average employee contributions	\$417	\$353

REPORT HIGHLIGHTS

Results Shown Separately for General and Correctional Employees

	<u>General</u>	<u>Correctional</u>
A. Financial and Actuarial Status		
1. Valuation Assets	\$1,109,683,296	\$ 48,700,034
2. Accrued Liability	1,465,113,806	53,825,589
3. Unfunded Accrued Liability (A2 - A1)	355,430,510	5,125,555
4. Accrued Liability Funding Ratio (A1/A2)	75.74%	90.48%
5. Normal Cost*	62,719,753 (6.11%)	2,931,378 (9.43%)
B. Contributions		
1. Chapter 356 Requirement	\$82,981,346 (8.08%)	\$3,269,114 (10.52%)
2. Actual Prescribed Contribution (Chapter 352)	78,348,868 (7.63%)	4,226,310 (13.60%)
3. Sufficiency (2 / 1)	.944	1.293
C. Depth of Funding - Plan Continuation Basis		
1. Present Value of Accrued Benefits	\$1,188,979,638	\$46,510,246
2. Depth of Funding (A1/C1)	93.33%	104.71%

* Parentheses indicate contribution levels as a percentage of salary.

REPORT HIGHLIGHTS (continued)

	<u>General</u>	<u>Correctional</u>
D. Plan Participants		
1. Active Members		
a. Number	44,412	1,192
b. Valuation payroll of employees under assumed retirement age	\$1,026,852,790	\$31,075,810
c. Total valuation payroll	1,048,639,187	31,075,810
2. Retired Members/Beneficiaries		
a. Number	11,367	329
b. Average annual benefit payable	\$3,651	\$6,403
3. Deferred Annuitants		
a. Number	901	29
b. Average annual vested benefit	\$3,944	\$9,032
4. Former Members Without Vested Rights		
a. Number	4,881	79
b. Average employee contributions	\$386	\$2,298

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

ACTUARIAL VALUATION AS OF JUNE 30, 1985

PURPOSE AND SUMMARY

The purpose of this report is to set forth the financial status of the Minnesota State Retirement System (MSRS), State Employees' Retirement Fund in accordance with the applicable provisions set forth in Chapter 356 and Chapter 11A of the Minnesota Statutes.

Chapter 356 of the Minnesota Statutes sets forth the annual reporting requirements which govern the public employee retirement systems in Minnesota. The principal requirement (in addition to the experience study required every fourth year) is that an actuarial valuation be performed each year and that the valuation specifically set forth the following items based on an assumed 8% pre-retirement and 5% post-retirement interest rate, and a 6-1/2% salary scale assumption:

1. The assets of the plan and the present value of all benefits which will be payable from the plan.
2. The normal cost of the plan (as a level percentage of payroll) based on the entry age normal cost method.
3. The accrued liability of the plan, defined as the present value of all benefits less the present value of future entry age normal costs.
4. An actuarial balance sheet showing accrued assets, accrued liabilities, and the deficit from full funding of the accrued liability (unfunded accrued liability).
5. The annual contribution required to pay normal cost and amortize the June 30, 1985 unfunded accrued liability by June 30, 2010, the full funding date established in the June 30, 1982 valuation.
6. An analysis explaining the increase or decrease in the unfunded accrued liability since the last valuation.

Chapter 11A of the Minnesota Statutes pertains to the operation of the Minnesota Post Retirement Investment Fund (MPRI Fund). It includes requirements regarding the determination of the present value of benefits payable from the MPRI Fund (as of

June 30, 1985 and as of January 1, 1986) and the corresponding mortality gain or loss each year, the latter to facilitate an appropriate transfer between the State Employees' Retirement Fund and the MPRI Fund.

This reporting on the status of the State Employees' Retirement Fund as of June 30, 1985, is intended to comply with all of the requirements regarding actuarial reporting that are set forth in Chapters 356 and 11A of the Statutes. Appendix 1 at the end of the report cross-references the information of the Minnesota Statutes set forth herein with that specifically called for under Chapters 356 and 11A respectively.

VALUATION ASSETS

The Executive Director furnished us with a Financial Report setting forth the assets and liabilities of the Fund as of June 30, 1985. The accounting balance sheet furnished by the Executive Director is set forth in Table 1(a).

In order to determine the Chapter 356 contribution requirements, as well as the unfunded accrued liability and depth of funding ratio, separately for Correctional and General Employees, we must allocate the State Contribution Reserve (item B.4 in Table 1(a)) between the General and Correctional Employees' portions of the Fund. The method used in last year's report has been retained and may be briefly outlined as follows:

1. Start with last year's resulting allocation.
2. Add estimated State contributions to each plan, determined by allocating the actual State contribution for the year in proportion to the respective amounts derived by applying the State contribution rates to average General and Correctional payrolls during the year.
3. Deduct any refund of contributions and transfers of assets to the MPRI Fund (estimated, based on new retirees during the year reported at the end of the year). Note that this step is performed only in regard to those items which we can definitely allocate on the valuation date. Determine new 1985 base before allocation of investment earnings.
4. Allocate investment earnings, net of operating expenses, in proportion to the new base.

The June 30, 1985 allocation on this basis results in valuation assets as follows:

General Plan	\$1,109,683,296
Correctional Plan	48,700,034
Total	<u>\$1,158,383,330</u>

ACTUARIAL BALANCE SHEETS

Table 2 sets forth an actuarial balance sheet summarizing the actuarial valuation. Whereas the previously mentioned accounting balance sheet [Table 1(a)] balances the current assets to date with current accumulated reserves for benefits payable, the actuarial balance sheet compares total assets, including the present value of all future contributions payable to the Fund, with the present value of all benefits payable from the Fund.

Table 3(a) sets forth a balance sheet comparing the assets and unfunded accrued liability (the total of the two equaling the accrued liability) to the current liabilities and reserves required under the plan. This table is in the format specifically required by Chapter 356 and is supported by attachments in the form of Tables 3(b) and 3(c), which set forth the determination of the unfunded accrued liability and the status of the MPRI Fund as of June 30, 1985. The status of the MPRI fund as of June 30, 1985 was provided by The Wyatt Company, in their role as actuary for the Legislative Commission on Pensions and Retirement.

Table 1(a)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUNDAccounting Balance Sheet as of June 30, 1985

A. ASSETS

1. Cash		\$	2,805
2. Short term investments (at cost)			60,624,592
3. Accounts receivable:			
a. Accrued employee contributions	\$1,726,228		
b. Accrued employer contributions	1,752,872		
c. Other	8,154		3,487,254
4. Due from other plans			203,914
5. Interest receivable			372,892
6. Investment in debt securities (actuarial value)****			185,316,417
7. Investment in equities (actuarial value)*			486,378,750
8. Equipment at depreciated cost			94,628
9. Participation in MPRI Fund**			424,583,000
10. TOTAL ASSETS			<u>\$1,161,064,252</u>

B. LIABILITIES

Liabilities

1. Accounts payable			
a. Annuitants	\$	3,950	
b. Accrued expenses		260,680	
c. Due to unclassified retirement		0	
d. Due MPRI Fund		2,407,209	
e. Due to State		9,083	
2. Total liabilities			<u>\$ 2,680,922</u>

Reserves

1. Participation in MPRI Fund**		424,583,000
2. Survivor benefit reserve		215,385
3. Employee contribution reserve		225,879,336
4. State contribution reserve		507,705,609
5. Total reserves		<u>\$1,158,383,330</u>
6. Unrealized loss on equities		0
7. VALUATION ASSETS***		1,158,383,330
8. TOTAL LIABILITIES AND RESERVES		<u>\$1,161,064,252</u>

* Market value as of June 30, 1985 is \$525,750,792 for equities.

** Participation equals Required Reserves for retired lives.

*** Portion of assets to be applied towards providing benefits.

**** The value at cost as of June 30, 1985 is \$183,873,345 for debt securities.

Table 1(b)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUNDAllocation of June 30, 1985 Valuation Assets
Between General and Correctional Employees

	<u>General Plan</u>	<u>Correctional Plan</u>	<u>Total</u>
1. Original Base, Equal to the Employee and State Contribution Fund, as Allocated on June 30, 1984	\$615,070,958	\$ 24,333,317	\$639,404,275
2. Allocated Contributions During the Year	69,281,482	3,563,306	72,844,788
3. Transfers of Assets to MPRI Fund During the Year	63,373,000	2,764,000	66,137,000
4. Refunds Allocable During the Year	7,327,615	172,480	7,500,095
5. Estimated Base as of June 30, 1985, Before Allocation of Investment Earnings and Expenses (1) + (2) - (3) - (4)	613,651,825	24,960,143	638,611,968
6. Employee Contribution Reserve as of June 30, 1985	218,380,105	7,499,231	225,879,336
7. Estimated State Contribution Reserve as of June 30, 1985 (5) - (6)	395,271,720	17,460,912	412,732,632
8. Actual State Contribution Reserve, Including Investment Earnings During the Year and Expenses Allocated According to Item 7	486,226,806	21,478,803	507,705,609
9. MPRI Fund Reserve	404,861,000	19,722,000	424,583,000
10. Survivor Benefit Reserve	215,385	0	215,385
11. Total Valuation Assets* (6) + (8) + (9) + (10)	1,109,683,296	48,700,034	1,158,383,330

* Includes Employee and State Contribution Reserves, MPRI Fund Participation and Survivor Benefit Reserve.

Table 2

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Actuarial Balance Sheet as of June 30, 1985

A. ASSETS

1. Assets on hand from accounting balance sheet:		
a. Reserves for MPRI Fund benefits	\$424,583,000	
b. All other assets	<u>736,481,252</u>	\$1,161,064,252
2. Present value of employees' future contributions		378,655,921
3. Present value of state future contributions applicable to:		
a. Entry age normal costs	224,651,845	
b. Statutory supplemental contribution	<u>301,933,574</u>	<u>526,585,419</u>
4. TOTAL ASSETS		<u>\$2,066,305,592</u>

B. LIABILITIES

1. Current liabilities from accounting balance sheet		\$2,680,922
2. Present value of earned and earnable benefits payable to presently active members:		
a. Current Benefit Obligations	\$787,597,512	
b. Future Benefit Obligations	<u>886,757,277</u>	\$1,674,354,789
3. Present value of benefits for deferred annuitants		21,027,350
4. Present value of refundment to former members without vested rights		2,066,637
5. Present value of survivor benefits		215,385
6. Participation in MPRI Fund		<u>424,583,000</u>
7. TOTAL LIABILITIES		<u>\$2,124,928,083</u>

C. PROJECTED BENEFIT FUNDING RATIO (A / B) 97.2%

Table 3(a)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Chapter 356 Balance Sheet as of June 30, 1985

ASSETS AND UNFUNDED ACCRUED LIABILITIES

A. ASSETS*

1. Cash		\$	2,805
2. Short term investments (at cost)			60,624,592
3. Accounts receivable:			
a. Accrued employee contributions	\$1,726,228		
b. Accrued employer contributions	1,752,872		
c. Other	<u>8,154</u>		3,487,254
4. Due from other plans			203,914
5. Interest receivable			372,892
6. Investment in debt securities (actuarial value)			185,316,417
7. Investment in equities (actuarial value)			486,378,750
8. Equipment at depreciated cost			94,628
9. Participation in MPRI Fund**			<u>424,583,000</u>
10. TOTAL ASSETS			<u>\$1,161,064,252</u>

B. UNFUNDED ACCRUED LIABILITIES

1. Total unfunded accrued liability		<u>360,556,065</u>
2. TOTAL ASSETS AND UNFUNDED ACCRUED LIABILITIES		<u>\$1,521,620,317</u>

(continued)

Table 3(a)(continued)

CURRENT LIABILITIES AND RESERVES REQUIRED

C. LIABILITIES

1. Accounts payable:		
a. Annuitants	\$	3,950
b. Accrued expenses		260,680
c. Due unclassified retirement		0
d. Due MPRI Fund		2,407,209
e. Due to State		<u>9,083</u>
2. Total liabilities	\$	<u>2,680,922</u>

D. RESERVES REQUIRED

1. Total reserves required per attached Table 3(b)	<u>1,518,939,395</u>
2. TOTAL CURRENT LIABILITIES AND RESERVES REQUIRED	<u>\$1,521,620,317</u>

* Accumulated contributions, without interest, of members not yet retired amounted to \$225,879,336 as of June 30, 1985 (includes accrued but unpaid contributions).

** Participation equals Required Reserves for retired lives as of June 30, 1985, excluding the January 1, 1986 benefit increases.

Table 3(b)

MINNESOTA STATE TIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Determination of Accrued Liability and
Unfunded Accrued Liability as of June 30, 1985

	(1) Present Value of Benefits	(2) Present Value of Applicable Portion of Normal Cost Contribution	(3) Accrued Liability Equals Reserves Required (1) - (2)
A. DETERMINATION OF ACCRUED LIABILITY			
1. Active Members			
a. Retirement benefits	\$1,220,431,670	\$335,859,580	\$ 884,572,090
b. Disability benefits	83,196,414	27,111,438	56,084,976
c. Refundments due to death or withdrawal	160,410,267	171,009,158	(10,598,891)
d. Surviving spouse benefits	85,712,600	25,682,470	60,030,130
e. Deferred retirement benefits	124,603,838	43,645,120	80,958,718
f. Subtotal	<u>\$1,674,354,789</u>	<u>\$603,307,766</u>	<u>\$1,071,047,023</u>
2. Deferred annuitants	\$ 21,027,350		\$ 21,027,350
3. Former members without vested rights	2,066,637		2,066,637
4. Survivors	215,385		215,385
5. Participation in MPRI Fund	<u>424,583,000</u>		<u>\$ 424,583,000</u>
6. TOTAL	<u>\$2,122,247,161</u>	<u>\$603,307,766</u>	<u>\$1,518,939,395</u>
B. DETERMINATION OF UNFUNDED ACCRUED LIABILITY			
1. Accrued Liability			1,518,939,395
2. Valuation Assets			1,158,383,330
3. Unfunded Accrued Liability (1 - 2)			360,556,065

Touche Ross & Co.

MINNESOTA POST RETIREMENT INVESTMENT FUND

Background

The Minnesota Post Retirement Investment Fund (MPRI Fund), previously termed the Minnesota Adjustable Fixed Benefit Fund (MAFB), is basically a vehicle for providing variable annuity payments to pensioners. When an active participant retires, assets equal to the present value of future benefits payable to that participant (and beneficiary, if applicable) are transferred from the State and Employee Contribution Reserves, to the MPRI Fund. Thereafter, benefits are paid from the MPRI Fund. Future benefit increases are determined on the basis of the investment performance of MPRI Fund assets.

Chapter 11A of the Minnesota Statutes provides a method for determining benefit increases. A benefit increase is granted in any year in which the earnings of MPRI Fund assets exceed 5%. In a year in which there is an MPRI Fund deficit (i.e., required reserves exceed MPRI Fund assets) 5% of any income in excess of the 5% requirement is credited towards amortizing the deficit, with the remaining 95% being used to provide benefit increases. If there is no MPRI Fund deficit, all income in excess of the required 5% is used to provide benefit increases.

MPRI Fund Status as of June 30, 1985

Table 3(c) sets forth the determination of MPRI Fund net assets and reserve requirements as of June 30, 1985.

This information was developed by The Wyatt Company, actuaries for the Legislative Commission on Pensions and Retirement, and is reprinted here without verification.

Unfunded Accrued Liability

Tables 4 and 5 reconcile the change in the unfunded accrued liability during the year. Table 4 sets forth a demonstration that the decrease in the unfunded accrued liability is equal to the excess of income over deductions during the year, where any increase in required actuarial reserves is indicated as a deduction item. Table 5 sets forth our analysis of the change in the unfunded accrued liability.

Table 3(c)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Actuarial Information for
Determining MPRI Fund Benefit Increase*

	<u>Amount on 6/30/85</u>
1. Expected Reserves Assuming 5% Interest (MPRIF Participation Before Actuarial Gain or Loss)	\$422,180,458*
2. Required Reserves (MPRIF Participation After Actuarial Gain or Loss)	424,583,000**
3. Actuarial Gain (Loss) due to Mortality (1) - (2)	\$ (2,402,542)

Required Reserves (line 2) Valued 1/1/86**

Members Eligible for Increase	\$378,174,000
Members Not Eligible for Increase	<u>40,220,000</u>
Total	\$418,394,000

* Information supplied by State Board of Investment.

** This information was supplied by The Wyatt Company, actuaries for the Legislative Commission on Pensions and Retirement.

Table 4

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Analysis of Income and Deductions from Income
and Effect on the Unfunded Accrued Liability

A. INCOME			
1.	Contributions from employees		\$ 35,219,979
2.	Contributions from employers		37,624,809
3.	General fund appropriation		1,330,837
4.	From investments		
	a. Investment income	\$62,858,610	
	b. Unrealized gains	31,662,116	
	c. Realized gain on investment	<u>4,378,557</u>	98,899,283
5.	From MPRI Fund participation		41,294,094
6.	Other revenues		<u>194</u>
7.	TOTAL INCOME		\$214,369,196
B. DEDUCTIONS FROM INCOME			
1.	Benefits		
	a. Service retirement and disability annuities	\$42,931,376	
	b. Survivor benefits (spouse)	<u>25,241</u>	42,956,617
2.	Refundments (employee contributions)		
	a. Refunds	6,725,711	
	b. Interest on refundments	<u>774,383</u>	7,500,094
3.	Administrative expenses		2,597,670
4.	Increase in total reserves required		
	a. Reserves required 6/30/84	\$1,311,550,300	
	b. Reserves required 6/30/85	<u>1,518,939,395</u>	<u>207,389,095</u>
5.	TOTAL DEDUCTIONS FROM INCOME		<u>\$260,443,476</u>

Table 4 (continued)

C. OTHER FINANCING SOURCES (USES)	
1. Unclassified plan transfers	<u>1,065,082</u>
2. TOTAL OTHER FINANCING SOURCES (USES)	<u>\$ 1,065,082</u>
D. DEFICIENCY OF INCOME AND OTHER SOURCES OVER DEDUCTIONS FROM INCOME AND OTHER USES	
	<u>\$ 45,009,198</u>
E. INCREASE IN UNFUNDED ACCRUED LIABILITY	
1. Unfunded accrued liability 6/30/84	\$315,546,867
2. Unfunded accrued liability 6/30/85	<u>360,556,065</u>
3. INCREASE IN UNFUNDED ACCRUED LIABILITY	<u>\$ 45,009,198</u>

Table 5

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Analysis of Change in the Unfunded Accrued Liability
During the Fiscal Year Ending June 30, 1985

1.	Unfunded accrued liability as of June 30, 1984		315,546,867
2.	Change due to current rate of funding and interest requirements		
	a. 1984-85 past service contribution	(14,173,639)	
	b. 8% interest requirement	<u>25,243,749</u>	11,070,110
3.	Change due to actuarial gains (indicated by parentheses) or losses (no parentheses) because of experience deviations from expected		
	a. Salary increases	71,700,962	
	b. Investment income	(47,822,165)	
	c. MPRI Fund mortality	2,402,542	
	d. New entrants	2,261,224	
	e. Withdrawals, death, disability of active members (balancing item)	<u>5,396,525</u>	<u>33,939,088</u>
4.	Unfunded accrued liability as of June 30, 1985		<u>\$360,556,065</u>

CONTRIBUTIONS

Chapters 352 and 356 set forth requirements as to the level of contributions. Chapter 352 prescribes the actual amount of contributions and Chapter 356 describes the method used to determine the amount of contribution required to fully fund the Normal Cost and the Unfunded Accrued Liability. Together, the actual contribution and required contribution are used to determine the sufficiency of the actual contribution. These calculations are illustrated in Tables 6(a) and 6(b).

Table 6(a)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

General Employees' Plan Annual Requirement in
Accordance With Chapter 356

	<u>% of Payroll*</u>	<u>Amount</u>
1. Normal cost	6.11	62,719,753
2. Assumed operating expense	.28	2,875,188
3. Amortization by June 30, 2010 of the Unfunded Accrued Liability of \$355,430,510	1.69	17,386,405
4. Total Chapter 356 requirement (1) + (2) + (3)	8.08	82,981,346

Actual Contributions:

1. Employee contributions	3.73	38,301,609
2. Employer contribution	3.90	40,047,259
3. Total Chapter 352A prescribed contribution	7.63	78,348,868

Contribution Sufficiency: .944

Note: Expected annual payroll = \$1,026,852,790

* Assumed that this percentage is contributed in each payroll period throughout the year ending June 30, 1986.

Table 6(b)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Correctional Employees' Plan Annual Requirement
in Accordance With Chapter 356

	<u>Percent of Payroll*</u>	<u>Amount</u>
1. Normal cost	9.43	2,931,378
2. Assumed operating expense	.28	87,012
3. Amortization by June 30, 2010 of the Unfunded Accrued Liability of \$5,125,555	.81	250,724
4. Total Chapter 356 requirement (1) + (2) + (3)	10.52	3,269,114

Actual Contributions:

1. Employee contributions	4.90	1,522,715
2. Employer contribution	8.70	2,703,595
3. Total Chapter 352A prescribed contribution	13.60	4,226,310

Contribution Sufficiency: 1.293

NOTE: Expected Annual Payroll = \$31,075,810

* Assumed that this percentage is contributed in each payroll period throughout the year ending June 30, 1986.

DEPTH OF FUNDING - PLAN CONTINUATION BASIS

The depth of funding is an indication of the extent to which the accrued benefits are funded and is measured by the ratio of valuation assets to the present value of accrued benefits. These measurements are made on the plan continuation basis (applying all ongoing actuarial assumptions including assumed salary increases and turnover) and are illustrated as follows:

Table 6(c)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Depth of Funding June 30, 1985

	<u>General</u>	<u>Correctional</u>
1. Active members	\$ 763,502,700	\$24,094,812
2. Deferred annuitants	18,852,490	2,174,860
3. Former members without vested rights	1,885,063	181,574
4. Survivors	215,385	-
5. Participation in MPRI Fund	<u>404,524,000</u>	<u>20,059,000</u>
6. Total present values of accrued benefits	\$1,188,979,638	\$46,510,246
7. Valuation assets	1,109,683,296	48,700,034
8. Depth of Funding (7/6)	93.33%	104.71%

EMPLOYEE DATA

The Executive Director furnished us with employee information pertaining to all active members, inactive members and retired members of the Fund. Tables 7(a), 7(b), 7(c), 7(d), 8(a) and 8(b) summarize the changes in active, inactive and retired membership during the year in accordance with the requirements set forth in Section 356.215 of the Minnesota Statutes, Subdivisions 4 and 5. In addition, age and service distributions are provided in Tables 9(a) - 9(d).

In order to reflect anticipated current year salary increases, all salaries provided were increased by 6.5%.

PLAN VALUED

The provisions of the Minnesota State Retirement System, State Employees' Retirement Fund are governed principally by Chapters 352 and 11A of the Minnesota Statutes pertaining to MPRI Fund Benefits. Table 11 sets forth a summary of the principal provisions as of June 30, 1985.

Table 7(a)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Covered General Employees' Census Data as of June 30, 1985

<u>Payroll</u>	<u>Number</u>	<u>Annual</u>
Active at June 30, 1984	44,158	\$922,846,717
New Entrants*	5,327	
Total	<u>49,485</u>	
Less Separations from Active Service:		
Refund of Contributions*	3,014	49,856,213
Separation with a Deferred Annuity	84	1,744,087
Separation with Neither Refundment nor Right to a Deferred Annuity	982	9,885,035
Disability	40	829,381
Death, No Spouse's Benefits*	56	1,035,998
Service Retirement	720	17,511,641
Death Spouse's Benefits Payable	6	140,098
Total Separations	<u>4,902</u>	
Adjustments	7	
Military	7	
Net Transfers to and From Other Plans	<u>(185)</u>	
Active at June 30, 1985	<u>44,412</u>	<u>\$984,403,980**</u>

Average Entry Age of New Employees

<u>For the Fiscal Year Ending</u>	<u>Male</u>	<u>Female</u>	<u>Average of Total</u>
6/30/81	28.9	27.8	28.2
6/30/82	28.4	27.3	27.7
6/30/83	28.7	27.4	27.9
6/30/84	29.7	29.4	29.6
6/30/85	31.6	31.0	31.2

Average age at entry in State service for all active employees
at 6/30/85:

Male	30.5
Female	30.3
Total	30.4

* Includes those who entered the plan and terminated during
the period from July 1, 1984 to June 30, 1985.

** Includes 138 participants on workers' compensation who we
estimated had a total annual salary of \$2,963,322.

Table 7(b)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUNDGeneral Employees' Annuitant Census Data as of June 30, 1985

	<u>Number</u>	<u>Annual Annuity Benefit Payable</u>
A. <u>Service Retirement Annuitants</u>		
Receiving at June 30, 1984	9,693	\$32,475,019.20
New	885	4,808,287.80
Deaths	(424)	(1,274,426.52)
Adjustments-Net Result	<u>(2)</u>	<u>2,044,595.52</u>
Receiving at June 30, 1985*	10,152	\$38,053,476.00
B. <u>Disabled Employees</u>		
Receiving at June 30, 1984	687	1,869,829.56
New	45	132,303.84
Deaths	(53)	(152,732.64)
Disability Reinstated	1	18,096.00
Disability Rescinded	(1)	(3,996.96)
Adjustments-Net Result	<u>1</u>	<u>92,900.40</u>
Receiving at June 30, 1985	680	\$1,956,400.20
C. <u>Widows Receiving an Annuity or Survivor Benefit</u>		
1. Beneficiaries Receiving an Optional or Reversionary Annuity:		
Receiving at June 30, 1984	447	1,102,660.56
New	81	298,085.16
Deaths	(21)	(46,950.36)
Adjustments-Net Result	<u>4</u>	<u>90,988.32</u>
Receiving at June 30, 1985	511	\$1,444,783.68

* Includes three annuitants from Military Affairs.

Table 7(b) (continued)

	<u>Number</u>	<u>Annual Annuity Benefit Payable</u>
2. Spouse Receiving a Survivor Benefit:		
Receiving at June 30, 1984	16	\$24,520.32
Deaths	(1)	(1,508.04)
Adjustments-Net Result	<u>0</u>	<u>1,693.32</u>
Receiving at June 30, 1985	15	\$24,705.60

D. Deferred Annuitants

Deferred as of June 30, 1984	852	\$3,288,224.00
New	127	620,556.00
Began Receiving	(68)	(143,094.96)
Adjustments - Net Result	<u>(10)</u>	<u>(212,111.84)</u>
Deferred as of June 30, 1985	901	\$3,553,573.20

Average Age at Retirement of New Service Annuitants

<u>Fiscal Year Ending</u>	<u>Average Retirement Age</u>
6/30/81	63.4
6/30/82	63.2
6/30/83	63.3
6/30/84	64.0
6/30/85	64.0
All Existing Service Annuitants	64.2

Table 7(c)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Military Affairs Annuitant Census Data as of June 30, 1985

	<u>Number</u>	<u>Annual Annuity Benefit Payable</u>
A. <u>Service Retirement Annuitants</u>		
Receiving at June 30, 1984	3	32,531.88
New	0	0.00
Deaths	0	0.00
Adjustments-Net Result	<u>0</u>	<u>2,246.28</u>
Receiving at June 30, 1985	3	\$34,778.16
B. <u>Disabled Employees</u>		
Receiving at June 30, 1985		None
C. <u>Widows Receiving an Annuity or Survivor Benefit</u>		
Receiving at June 30, 1985		None
D. <u>Children Receiving a Survivor Benefit</u>		
Receiving at June 30, 1985		None
E. <u>Deferred Annuitants</u>		
Deferred as of June 30, 1985		None

Average Age at Retirement of New Service Annuitants

<u>Fiscal Year Ending</u>	<u>Average Retirement Age</u>
6/30/82	---
6/30/83	---
6/30/84	---
6/30/85	---
All Existing Service Annuitants	60.0

Table 7(d)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Unclassified Plan Annuitant Census Data as of June 30, 1985

	<u>Number</u>	<u>Annual Annuity Benefit Payable</u>
A. <u>Service Retirement Annuitants</u>		
Receiving at June 30, 1984	6	\$9,937.68
New	3	7,775.52
Deaths	0	0.00
Adjustments-Net Result	<u>0</u>	<u>686.16</u>
Receiving at June 30, 1985	9	\$18,399.36
B. <u>Disabled Employees</u>		
Receiving at June 30, 1985		None
C. <u>Widows Receiving an Annuity or Survivor Benefit</u>		
Receiving at June 30, 1985		None
D. <u>Children Receiving a Survivor Benefit</u>		
Receiving at June 30, 1985		None
E. <u>Deferred Annuitants</u>		
Deferred as of June 30, 1985		None

Average Age at Retirement of New Service Annuitants

<u>Fiscal Year Ending</u>	<u>Average Retirement Age</u>
6/30/82	---
6/30/83	60.8
6/30/84	67.1
6/30/85	67.1
All Existing Service Annuitants	62.9

Table 8(a)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Covered Correctional Employees' Census Data
as of June 30, 1985

	<u>Number</u>	<u>Annual Payroll</u>
Active at June 30, 1984	1,174	\$26,993,968
New Entrants*	<u>156</u>	
Total	1,330	
Less Separations from Active Service:		
Refund of Contributions*	76	1,197,918
Separation with a Deferred Annuity	2	56,935
Separation with Neither Refundment nor Right to a Deferred Annuity	22	331,101
Death	2	52,977
Service Retirement	24	300,421
Disability	<u>1</u>	18,071
Total Separations	127	
New Transfers to and from other plans	<u>(11)</u>	
Active at June 30, 1985	1,192	\$29,179,170**

Average Entry Age of New Employees

<u>For the Fiscal Year</u> <u>Ending</u>	<u>Male</u>	<u>Female</u>	<u>Average of</u> <u>Total</u>
6/30/81	28.4	29.2	28.6
6/30/82	27.7	27.3	27.9
6/30/83	26.5	28.3	26.7
6/30/84	28.7	32.4	29.4
6/30/85	29.2	28.6	29.0

Average age at entry in State service for all active employees
at 6/30/85:

Male	28.9
Female	30.4
Total	29.1

* Includes those who entered the plan and terminated during
the period from July 1, 1984 to June 30, 1985.

** Includes four participants on workers' compensation who we
estimated had a total annual salary of \$86,976.

Table 8(b)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Correctional Employees' Annuitant Census Data
as of June 30, 1985

	<u>Number</u>	<u>Annual Annuity Benefit Payable</u>
A. <u>Service Retirement Annuitants</u>		
Receiving at June 30, 1984	308	1,840,606.80
New	13	160,270.20
Deaths	(12)	(56,777.16)
Adjustments-Net Result	<u>0</u>	<u>\$ 40,128.84</u>
Receiving at June 30, 1985	309	\$1,984,228.68
B. <u>Disabled Employees</u>		
Receiving at June 30, 1984	12	64,782.20
New	1	10,047.72
Deaths	(1)	(7,823.76)
Adjustments-Net Result	<u>0</u>	<u>3,546.40</u>
Receiving at June 30, 1985	12	\$70,552.56
C. <u>Widows Receiving an Annuity or Survivor Benefit</u>		
Beneficiaries Receiving an Optional or Reversionary Annuity:		
Receiving at June 30, 1984	6	37,300.20
New	1	7,312.92
Adjustments-Net Result	<u>1</u>	<u>7,281.36</u>
Receiving at June 30, 1985	8	\$51,894.48

Table 8(b) (con't.)

	<u>Number</u>	<u>Annual Annuity Benefit Payable</u>
D. <u>Children Receiving a Survivor Benefit</u>	None	
E. <u>Deferred Annuitants</u>		
Deferred as of June 30, 1984	25	178,404.00
New	3	21,168.00
Began Receiving	(1)	(4,872.00)
Adjustments	<u>2</u>	<u>67,224.00</u>
Deferred as of June 30, 1985	29	\$261,924.00

Average Age at Retirement of New Service Annuitants

<u>Fiscal Year Ending</u>	<u>Average Retirement Age</u>
6/30/81	56.1
6/30/82	56.4
6/30/83	55.6
6/30/84	57.8
6/30/85	57.8
All Existing Service Annuitants	58.3

Table 9(a)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

General Employees

Service Groups by Age Groups

Age Group	Service Group							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30 +	
<u>Male</u>								
0 - 19	46							46
20 - 24	655	50						705
25 - 29	1686	455	8					2149
30 - 34	1575	1398	493	10				3476
35 - 39	1177	1221	1220	400	30	0	3	4051
40 - 44	543	632	611	658	345	12	0	2801
45 - 49	321	391	348	483	369	219	8	2139
50 - 54	249	300	297	344	285	325	179	1979
55 - 59	220	272	263	382	211	228	320	1896
60 - 64	118	238	226	304	177	124	262	1449
65 - 69	19	47	66	56	29	21	23	261
70 & over	3	3	4	5	2	1	1	19
Total	6612	5007	3536	2642	1448	930	796	20971
<u>Female</u>								
0 - 19	82							82
20 - 24	1583	90						1673
25 - 29	3158	1232	39					4429
30 - 34	2442	1644	786	40	1			4913
35 - 39	1598	1083	659	481	19			3840
40 - 44	950	652	346	283	112	9		2352
45 - 49	659	511	321	159	94	62	11	1817
50 - 54	383	374	299	187	92	64	43	1442
55 - 59	293	326	315	281	104	65	69	1453
60 - 64	148	242	252	269	122	57	65	1155
65 - 69	20	61	57	75	24	18	18	273
70 & over	0	1	0	4	4	3	0	12
Total	11316	6216	3074	1779	572	278	206	23441

Table 9(b)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

General Employees

Employee Salary DistributionDistribution of Annual Earnings by Age Groups

Age Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0 - 19	46	\$ 302167	6569	82	\$ 757458	\$ 9237	128	\$ 1059625	\$ 8278
20 - 24	705	11108196	15756	1673	25671723	15345	2378	36779919	15467
25 - 29	2149	45466299	21157	4429	82135215	18545	6578	127601514	19398
30 - 34	3476	85862484	24702	4913	100590035	20474	8389	186452519	22226
35 - 39	4051	113264726	27960	3840	82929923	21596	7891	196194649	24863
40 - 44	2801	85007658	30349	2352	51333459	21825	5153	136341117	26459
45 - 49	2139	65823582	30773	1817	37662292	20728	3956	103485874	26159
50 - 54	1979	61458393	31055	1442	29969995	20784	3421	91428388	26726
55 - 59	1896	57808542	30490	1453	30140127	20743	3349	87948669	26261
60 - 64	1449	43158709	29785	1155	24346392	21079	2604	67505101	25924
65 - 69	261	7299455	27967	273	5658630	20728	534	12958085	24266
70 - 74	18	569136	31619	12	301344	25112	30	870480	29016
75 & over	1	13247	13247	0	0	0	1	13247	13247
Total	20971	\$577142594	\$27521	23441	\$471496593	\$20114	44412	\$1048639187	\$23612

Distribution of Annual Earnings by Service Groups

Service Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0	1873	33050571	17646	3134	45255459	14440	5007	78306030	15639
1	1823	39374684	21599	3170	55082073	17376	4993	94456757	18918
2	808	18046744	22335	1456	26609841	18276	2264	44656585	19725
3	934	22044653	23602	1592	29820822	18732	2526	51865475	20533
4	1174	29882158	25453	1964	39263182	19991	3138	69145340	22035
0-4	6612	142398810	21536	11316	196031377	17323	17928	338430187	18877
5-9	5007	140537824	28068	6216	133912284	21543	11223	274450108	24454
10-14	3536	108325162	30635	3074	71570580	23283	6610	179895742	27216
15-19	2642	80323923	30403	1779	43037109	24192	4421	123361032	27903
20-24	1448	46507841	32119	572	14320948	25037	2020	60828789	30113
25-29	930	31377181	33739	278	7138478	25678	1208	38515659	31884
30 +	796	27671853	34764	206	5485817	26630	1002	33157670	33091
TOTAL	20971	\$577142594	\$27521	23441	\$471496593	\$20114	44412	\$1048639187	\$23612

Table 9(c)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Correctional Employees

Service Groups by Age Groups

Age Group	Service Group							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30 +	
<u>Male</u>								
0 - 19								0
20 - 24	71	1						72
25 - 29	187	38						225
30 - 34	104	107	28					239
35 - 39	62	79	55	11	1			208
40 - 44	23	39	21	18	8			109
45 - 49	15	22	21	18	8	2		86
50 - 54	4	16	17	13	12	9	3	74
55 - 59	1	3	6	6	4	2	1	23
60 - 64	0	0	1	3	0	0	0	4
65 and over	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	467	305	149	69	33	13	4	1,040
<u>Female</u>								
0 - 19								0
20 - 24	16							16
25 - 29	36	5						41
30 - 34	18	13						31
35 - 39	16	8	3					27
40 - 44	2	3	2	1				8
45 - 49	4	4	3	2				13
50 - 54	2	0	2	3	0	1		8
55 - 59	0	4	2	0	0	0		6
60 - 64	1	0	0	0	1	0		2
65 +	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	95	37	12	6	1	1	0	152

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Correctional Employees

Employee Salary Distribution

Distribution of Annual Earnings by Age Groups

Age Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0 - 19	0	\$ 0	\$ 0	0	\$ 0	\$ 0	0	\$ 0	\$ 0
20 - 24	72	1306673	18148	16	330972	20686	88	1637645	18610
25 - 29	225	5259122	23374	41	871834	21264	266	6130956	23049
30 - 34	239	6246848	26137	31	717034	23130	270	6963882	25792
35 - 39	208	5818902	27975	27	638200	23637	235	6457102	27477
40 - 44	109	3161418	29004	8	217756	27220	117	3379174	28882
45 - 49	86	2542242	29561	13	342410	26339	99	2884652	29138
50 - 54	74	2318635	31333	8	217316	27165	82	2535951	30926
55 - 59	23	733548	31893	6	168068	28011	29	901616	31090
60 - 64	4	127997	31999	2	56835	28418	6	184832	30805
65 & over	0	0	0	0	0	0	0	0	0
Total	1040	\$27515385	\$26457	152	\$3560425	\$23424	1192	\$31075810	\$26070

Distribution of Annual Earnings by Service Groups

Age Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0	63	\$ 1140154	\$18098	28	\$ 462102	\$16504	91	\$ 1602256	\$17607
1	108	2312368	21411	33	710678	21536	141	3023046	21440
2	126	2861150	22708	16	379654	23728	142	3240804	22823
3	109	2678886	24577	7	157432	22490	116	2836318	24451
4	61	1513015	24804	11	271096	24645	72	1784111	24779
0-4	467	10505573	22496	95	1980962	20852	562	12486535	22218
5-9	305	8588036	28157	37	980223	26493	342	9568259	27977
10-14	149	4661455	31285	12	348164	29014	161	5009619	31116
15-19	69	2204088	31943	6	181200	30200	75	2385288	31804
20-24	33	1033976	31333	1	36124	36124	34	1070100	31474
25-29	13	407654	31358	1	33752	33752	14	441406	31529
30 +	4	114603	28651	0	0	0	4	114603	28651
Total	1040	\$27515385	\$26457	152	\$3560425	\$23424	1192	\$31075810	\$26070

Table 10(a)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Retired General Annuitants in MPRIF*

Distribution of Years Retired by Age Groups

Age Group	Years Retired							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30 +	
<u>Male</u>								
Under 40	0	1						1
40 - 44	0	0						0
45 - 49	0	0						0
50 - 54	1	0						1
55 - 59	60	0						60
60 - 64	604	6						610
65 - 69	1191	325	7					1523
70 - 74	210	932	145	7	1			1295
75 - 79	9	249	624	56	11	1		950
80 - 84	0	3	241	282	34	14	1	575
85 & over	<u>0</u>	<u>0</u>	<u>11</u>	<u>147</u>	<u>156</u>	<u>75</u>	<u>17</u>	<u>406</u>
Total	2075	1516	1028	492	202	90	18	5421
<u>Female</u>								
Under 40	1							1
40 - 44	3							3
45 - 49	4	0	0	1				5
50 - 54	7	0	0	1				8
55 - 59	65	2	1	0				68
60 - 64	425	23	6	1				455
65 - 69	921	285	20	1	2	1		1230
70 - 74	219	1009	190	9	3	1		1431
75 - 79	7	240	659	63	21	3	1	994
80 - 84	0	6	247	283	50	13	2	601
85 & over	<u>0</u>	<u>1</u>	<u>14</u>	<u>149</u>	<u>174</u>	<u>93</u>	<u>22</u>	<u>453</u>
Total	1652	1566	1137	508	250	111	25	5249

* includes widows

Table 10(b)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Retired General Annuitants in MPRIF

Distribution of Annual Benefits by Age Groups

Age Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0 - 19	0	\$ 0	\$ 0	0	\$ 0	\$ 0	0	\$ 0	\$ 0
20 - 24	0	0	0	0	0	0	0	0	0
25 - 29	0	0	0	0	0	0	0	0	0
30 - 34	0	0	0	0	0	0	0	0	0
35 - 39	1	1849	1849	1	1427	1427	2	3276	1638
40 - 44	0	0	0	3	10906	3635	3	10906	3635
45 - 49	0	0	0	5	13222	2644	5	13222	2644
50 - 54	1	676	676	8	27412	3427	9	28088	3121
55 - 59	60	427322	7122	68	297470	4375	128	724792	5662
60 - 64	610	3895614	6386	455	1681473	3696	1065	5577087	5237
65 - 69	1523	8367913	5494	1230	4078910	3316	2753	12446823	4521
70 - 74	1295	5568998	4300	1431	4142226	2895	2726	9711224	3562
75 - 79	950	3695361	3890	994	2422648	2437	1944	6118009	3147
80 - 84	575	1688318	2936	601	1259040	2095	1176	2947358	2506
85 +	406	1116899	2751	453	816278	1802	859	1933177	2250
Total	5421	\$24762950	\$4568	5249	\$14751012	\$2810	10670	\$39513962	\$3703

Distribution of Annual Benefits by Service Groups

Service Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0	346	\$ 2063108	\$5963	268	\$ 1016077	\$3791	614	\$3079185	\$5015
1	484	2763501	5710	352	1236459	3513	836	3999960	4785
2	356	1818106	5107	296	1029493	3478	652	2847599	4367
3	496	2904633	5856	374	1395684	3732	870	4300317	4943
4	393	1939029	4934	362	1144625	3162	755	3083654	4084
0-4	2075	11488377	5537	1652	5822338	3524	3727	17310715	4645
5-9	1516	6984273	4607	1566	4446084	2839	3082	11430357	3709
10-14	1028	4155400	4042	1137	2931136	2578	2165	7086536	3273
15-19	492	1330754	2705	508	899547	1771	1000	2230301	2230
20-24	202	513127	2540	250	399292	1597	452	912419	2019
25-29	90	240505	2672	111	197958	1783	201	438463	2181
30 +	18	50514	2806	25	54657	2186	43	105171	2446
Total	5421	\$24762950	\$4567	5249	\$14751012	\$2810	10670	\$39513962	\$3703

Table 10(c)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Disabled General Annuitants in MPRIF*

Distribution of Years Retired by Age Groups

Age Group	Years Retired							Total
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30 +</u>	
<u>Male</u>								
Under 40	1							1
40 - 44	5	1						6
45 - 49	4	0	1					5
50 - 54	13	4	2					19
55 - 59	29	10	6					45
60 - 64	62	53	14	6	1			136
65 - 69	12	81	13	4	2			112
70 - 74	0	39	24	13	0	0	1	77
75 - 79	0	0	11	7	2	0	0	20
80 - 84	0	0	0	8	4	0	2	14
85 +	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>3</u>	<u>1</u>	<u>4</u>	<u>8</u>
Total	126	188	71	38	12	1	7	443
<u>Female</u>								
Under 40	2							2
40 - 44	3	1						4
45 - 49	1	2	1					4
50 - 54	9	2	0					11
55 - 59	14	5	1	1				21
60 - 64	32	13	3	2				50
65 - 69	12	45	13	2				72
70 - 74	0	20	17	1	2	1		41
75 - 79	0	0	11	6	2	0		19
80 - 84	0	0	0	3	8	1		12
85 +	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>3</u>
Total	73	88	46	15	13	3	1	239

* includes widows

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Disabled General Annuitants in MPRIF

Distribution of Annual Benefits by Age Groups

Age Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0 - 19	0	\$ 0	\$ 0	0	\$ 0	\$ 0	0	\$ 0	\$ 0
20 - 24	0	0	0	0	0	0	0	0	0
25 - 29	0	0	0	0	0	0	0	0	0
30 - 34	0	0	0	0	0	0	0	0	0
35 - 39	1	3277	3277	2	3510	1755	3	6787	2262
40 - 44	6	21247	3541	4	10091	2523	10	31338	3134
45 - 49	5	22416	4483	4	8666	2167	9	31082	3454
50 - 54	19	61796	3252	11	32079	2916	30	93875	3129
55 - 59	45	153498	3411	21	56453	2688	66	209951	3181
60 - 64	136	485555	3570	50	126728	2535	186	612283	3292
65 - 69	112	358267	3199	72	150324	2088	184	508591	2764
70 - 74	77	220823	2868	41	88800	2166	118	309623	2624
75 - 79	20	47076	2354	19	33942	1786	39	81018	2077
80 - 84	14	26987	1928	12	17117	1426	26	44104	1696
85 +	8	21601	2700	3	8844	2948	11	30445	2768
Total	443	\$1422543	\$3211	239	\$536554	\$2245	682	\$1959097	\$2873

Distribution of Annual Benefits by Service Groups

Service Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0	18	\$ 59591	\$3311	10	\$ 27297	\$2730	28	\$ 86888	\$3103
1	25	70287	2811	17	46257	2721	42	116544	2775
2	25	95160	3806	19	44843	2360	44	140003	3182
3	30	130182	4339	15	37321	2488	45	167503	3722
4	28	115025	4108	12	32898	2742	40	147923	3698
0-4	126	470245	3732	73	188616	2584	199	658861	3311
5-9	188	626445	3332	88	217818	2475	276	844263	3059
10-14	71	196228	2764	46	79521	1729	117	275749	2357
15-19	38	80693	2124	15	21410	1427	53	102103	1926
20-24	12	27320	2277	13	19613	1509	25	46933	1877
25-29	1	2790	2790	3	7043	2348	4	9833	2458
30 +	7	18822	2689	1	2533	2533	8	21355	2669
Total	443	\$1422543	\$3211	239	\$536554	\$2245	682	\$1959097	\$2873

Table 10(e)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Correctional Annuitants in MPRIF
(Includes Retired and Disabled)

Distribution of Years Retired by Age Groups*

Age Group	Years Retired							Total
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30 +</u>	
<u>Male</u>								
Under 40								0
40 - 44	1							1
45 - 49	0							0
50 - 54	3	1						4
55 - 59	44	2						46
60 - 64	27	51	1					79
65 - 69	9	52	25					86
70 - 74	0	19	35					54
75 +	<u>0</u>	<u>0</u>	<u>12</u>	—	—	—	—	<u>12</u>
Total	84	125	73	0	0	0	0	282
<u>Female</u>								
Under 40								0
40 - 44	1							1
45 - 49	1							1
50 - 54	2							2
55 - 59	5	1						6
60 - 64	6	2						8
65 - 69	1	10	3					14
70 - 74	0	8	7					15
75 +	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	16	21	10	0	0	0	0	47

* Includes years since January 1, 1974.

Table 10(f)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Correctional Annuitants in MPRIF

Distribution of Annual Benefits by Age Groups*

Age Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0 - 19	0	\$ 0	\$ 0	0	\$ 0	\$ 0	0	\$ 0	\$ 0
20 - 24	0	0	0	0	0	0	0	0	0
25 - 29	0	0	0	0	0	0	0	0	0
30 - 34	0	0	0	0	0	0	0	0	0
35 - 39	0	0	0	0	0	0	0	0	0
40 - 44	1	5693	5693	1	7313	7313	2	13006	6503
45 - 49	0	0	0	1	15638	15638	1	15638	15638
50 - 54	4	26714	6679	2	16135	8068	6	42849	7142
55 - 59	46	531776	11560	6	45699	7617	52	577475	11105
60 - 64	79	700198	8863	8	55196	6900	87	755394	8683
65 - 69	86	396053	4605	14	33551	2397	100	429604	4296
70 - 74	54	187308	3469	15	31255	2084	69	218563	3168
75 & over	12	54145	4512	0	0	0	12	54145	4512
Total	282	\$1901887	\$ 6744	47	\$204787	\$ 4357	329	\$2106674	\$ 6403

Distribution of Annual Benefits by Service Groups

Service Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0	11	\$ 126741	\$11522	2	\$ 15141	\$7571	13	\$ 141882	\$10914
1	29	317953	10964	4	32568	8142	33	350521	10622
2	7	64541	9220	5	50016	10003	12	114557	9546
3	17	195043	11473	3	19382	6461	20	214425	10721
4	20	158600	7930	2	11838	5919	22	170438	7747
0-4	84	862878	10272	16	128945	8059	100	991823	9918
5-9	125	728052	5824	21	48457	2307	146	776509	5319
10 +	73	310957	4260	10	27385	2739	83	338342	4076
Total	282	\$1901887	\$6744	47	\$204787	\$4357	329	\$2106674	\$6403

* Includes years since January 1, 1974.

Table 11

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Summary of Principal Plan Provisions as of June 30, 1985

A. General Employees

1. Coverage: From first date of employment.
2. Service Credit: Service is credited from date of coverage.
3. Contributions:
 - a. Employee: 3.73% of salary.
 - b. State of Minnesota 3.90% of salary.
4. Final Average Salary: Monthly average for the highest 5 successive years of salary.
5. Normal Retirement:
 - a. Eligibility: Earlier of:
 - attainment of age 65 and completion of 10 years of service; or
 - attainment of age 62 with 30 years of service.
 - at any point between April 27, 1984 and December 31, 1986, if age is greater than or equal to 55, and age plus service is greater than or equal to 85.
 - b. Benefit Amount: 1% of Final Average Salary for each of the first 10 years of service plus 1-1/2% of Final Average Salary for each year of service thereafter.
6. Early Retirement:
 - a. Eligibility: Earlier of:
 - attainment of age 55 and completion of 10 years of service; or
 - completion of 30 years of service.
 - b. Benefit Amount: Normal Retirement benefit formula based on service and Final Average Salary to date of early retirement but actuarially reduced to reflect payment prior to age 65 (or age 62 if 30 years of service have been completed).

7. Form of Payment: Life annuity with return on death of any balance of contributions over aggregate monthly payments. Actuarially equivalent options are also available.
8. Disability Retirement:
- a. Eligibility: Earlier of:
- attainment of age 50 and completion of 5 years of service; or
 - completion of 10 years of service.
- b. Benefit Amount: Normal Retirement benefit formula based on service and Final Average Salary to date of Disability Retirement.
9. Deferred Service Retirement:
- a. Eligibility: Completion of 10 years of service and election to leave employee contributions on deposit.
- b. Benefit Amount: Retirement benefits payable at Normal Retirement date are determined according to the Normal Retirement benefit formula based on the member's Final Average Salary and service at termination, such amount being subject to an increase for each year between termination and retirement of 5% for years prior to January 1, 1981 and 3% compounded annually thereafter.
10. Return of Contributions: Upon termination of employment, a member may elect the return of contributions with 5% interest compounded annually in lieu of all other benefits under the plan.

11. Surviving Spouse Death Benefit:

- a. Eligibility: Death of member in service at least age 55 with 10 years of service or any age with 30 years of service. Prior to June 30, 1984, the requirements were age 58 with 20 years of service, or age 62 with at least 10 years of service.
- b. Benefit Amount: The surviving spouse may elect one of:
- refund of member contributions with 5% interest (changed from 3-1/2% as of June 30, 1984); or
 - 100% of the annuity the member would have received had he retired early (if eligible) and elected a 100% joint and survivor annuity commencing on his date of death. Prior to June 30, 1984, the benefit was a 50% joint and survivor annuity.

12. Combined Service Provisions:

- a. Eligible Members: Members who have had coverage under two or more Minnesota Public Retirement Systems, with a total of at least 10 years of credited service.
- b. Benefit Provisions: Benefits under both plans are based on the highest Final Average Salary including all years from both plans, and on the plans in effect on the member's last day in covered public employment.

13. Proportionate Annuity:

Any member who terminates after attaining age 65 and completing at least one year of service is entitled to a proportionate retirement annuity based on his allowable service credit.

B. Correctional Employees

Same as above except:

1. Contributions:

- a. Employee: 4.90% of salary.
- b. State of Minnesota: 8.70% of salary.

2. Normal Retirement:

- a. Eligibility: Attainment of age 55 and completion of 10 years of service.
 - b. Retirement Benefit: General Plan benefit plus an additional benefit defined below.
 - c. Additional Benefit: Final Average Salary times the sum of:
 - 1-1/2% for each of first 10 years of service; plus
 - 1% for each of next 15 years of service; plus
 - 1/2% for each year of service thereafter.
 - d. Limitation on Additional Benefit: That amount which, when added to the General Plan benefit, provides a retirement benefit of 75% of Final Average Salary.
 - e. Additional Benefits Period: 84 months or until attainment of age 65, whichever comes first.
 - f. Minimum Benefit Following Additional Benefit Period: That amount which, when added to Social Security benefits, equals the benefit payable during the additional benefit period.
3. Disability Retirement:
- a. Eligibility:
 - In line of duty: None.
 - Not in line of duty: Five years of service and less than age 55.

b. Benefit Amount:

● In line of duty:

50% of average monthly salary plus 2% for each year of service in excess of 20, offset by Workers' Compensation.

● Not in line of duty:

2-1/2% of average monthly salary for each year up to and including 20 years, plus 2% for each year in excess of 20, subject to a minimum of 25%.

c. Limitation:

At age 62, General Plan benefit based on credited service is payable subject to a minimum benefit of 10% of pay.

ACTUARIAL METHODS AND ASSUMPTIONS

Chapter 356 of the Minnesota Statutes calls for the determination of normal cost and accrued liability in accordance with the entry age normal cost method, one of several available projected cost methods. For the June 30, 1985 valuation, we used the individual entry age normal method, with salary scale.

The unfunded liability is amortized by the level percent of payroll method. (Each amortization payment is calculated as if the following year's payment will increase by 6.5%.)

Tables 12(a) through 12(e) summarize the actuarial assumptions used for this valuation. There have been no changes in assumptions since the last valuation, except that the expense rate is calculated equal to the prior year's expenses, divided by the prior year's payroll.

Table 12(a)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUNDSummary of Actuarial Assumptions and Methods

1. Mortality: 1971 Group Annuity Mortality Table with ages set back 8 years for females.
2. Post-Disablement Mortality: Combined Annuity Mortality Table.
3. Withdrawal: Graded rates based on actual experience developed by the June 30, 1971 experience analysis and set forth in the Separation from Active Service Table.
4. Expenses: Prior year's expenses expressed as a percentage of prior year's payroll.
5. Interest Rate: Pre-retirement - 8% per annum.
Post-retirement - 5% per annum.
6. Salary Scale: 6-1/2% per annum.
7. Assumed Retirement Age: Graded rates beginning at age 58 set forth in the Separation from Active Service Table. Fifty percent of those eligible to retire under the Rule of 85 are assumed to do so, and members age 65 or over are assumed to retire in one year hence.
8. Actuarial Cost Method: Entry age cost method, with normal cost determined as a level percentage of future covered payroll, on an individual basis.
9. Social Security: Based on the present law and 6-1/2% salary scale applicable to current salaries. Three percent wage base and cost of living increases projected.
10. Return of Contributions: 60% of employees withdrawing before retirement are assumed to elect return of contributions in lieu of a deferred benefit.

Table 12(b)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Male General Members

Probabilities of Separation From Active Service

(Number Separating at Each Age Per 10,000 Working at That Age)

<u>Age</u>	<u>Withdrawal</u>	<u>Death</u>	<u>Disability</u>	<u>Age and Service Retirement</u>
20	2,400	5		
21	2,250	5		
22	2,080	5		
23	1,920	6		
24	1,760	6		
25	1,600	6		
26	1,470	7		
27	1,340	7		
28	1,230	7		
29	1,130	8		
30	1,040	8	2	
31	950	9	2	
32	890	9	2	
33	830	10	2	
34	770	10	2	
35	720	11	2	
36	680	12	2	
37	640	13	2	
38	600	14	2	
39	560	15	2	
40	530	16	2	
41	500	18	2	
42	480	20	2	
43	460	23	3	
44	430	26	3	
45	410	29	3	
46	390	33	5	
47	370	38	7	
48	350	42	9	
49	340	47	11	
50	320	53	14	
51	300	59	16	
52	280	65	20	
53	260	71	24	
54	240	78	28	

Table 12(b) (continued)

<u>Age</u>	<u>Withdrawal</u>	<u>Death</u>	<u>Disability</u>	<u>Age and Service Retirement</u>
55	210	85	34	
56	170	93	40	
57	140	100	46	
58	90	109	56	30
59	40	119	66	30
60		131	76	40
61		144	90	150
62		159	110	500
63		174	136	500
64		192	174	2,000
65				10,000

Table 12(c)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Female General Members
Probabilities of Separation From Active Service
(Number Separating at Each Age Per 10,000 Working at That Age)

<u>Age</u>	<u>Withdrawal</u>	<u>Death</u>	<u>Disability</u>	<u>Age and Service Retirement</u>
20	3,700	4		
21	3,550	4		
22	3,390	4		
23	3,230	4		
24	3,070	4		
25	2,910	5		
26	2,750	5		
27	2,600	5		
28	2,430	5		
29	2,270	5		
30	2,120	5		
31	1,970	6		
32	1,820	6		
33	1,680	6		
34	1,540	7		
35	1,410	7	1	
36	1,300	7	1	
37	1,190	8	1	
38	1,090	8	1	
39	1,000	9	2	
40	920	9	2	
41	850	10	2	
42	780	10	4	
43	720	11	4	
44	680	12	4	
45	630	13	5	
46	590	14	6	
47	560	15	7	
48	530	16	7	
49	500	18	10	
50	470	20	10	
51	440	23	12	
52	410	26	14	
53	390	29	16	
54	360	33	20	

Table 12(c) (continued)

<u>Age</u>	<u>Withdrawal</u>	<u>Death</u>	<u>Disability</u>	<u>Age and Service Retirement</u>
55	330	38	24	
56	290	42	30	
57	230	47	36	
58	170	53	44	50
59	90	59	52	50
60		65	62	150
61		71	74	150
62		78	88	200
63		85	104	350
64		93	122	1,100
65				10,000

Table 12(d)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Male Correctional Members
Probabilities of Separation From Active Service
(Number Separating at Each Age Per 10,000 Working at That Age)

<u>Age</u>	<u>Withdrawal</u>	<u>Death</u>	<u>Disability</u>	<u>Age and Service Retirement</u>
20	2,400	5		
21	2,250	5		
22	2,080	5		
23	1,920	6		
24	1,760	6		
25	1,600	6		
26	1,470	7		
27	1,340	7		
28	1,230	7		
29	1,130	8		
30	1,040	8	2	
31	950	9	2	
32	890	9	2	
33	830	10	2	
34	770	10	2	
35	720	11	2	
36	680	12	2	
37	640	13	2	
38	600	14	2	
39	560	15	2	
40	530	16	2	
41	500	18	2	
42	480	20	2	
43	460	23	3	
44	430	26	3	
45	410	29	3	
46	390	33	5	
47	370	38	7	
48	350	42	9	
49	340	47	11	
50	320	53	14	
51	300	59	16	
52	280	65	20	
53	260	71	24	
54	240	78	28	
55	210	85	34	
56	170	93	40	
57	140	100	46	
58				10,000

Table 12(e)

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Female Correctional Members
Probabilities of Separation From Active Service
(Number Separating at Each Age Per 10,000 Working at That Age)

<u>Age</u>	<u>Withdrawal</u>	<u>Death</u>	<u>Disability</u>	<u>Age and Service Retirement</u>
20	3,700	4		
21	3,500	4		
22	3,390	4		
23	3,230	4		
24	3,070	4		
25	2,910	5		
26	2,750	5		
27	2,600	5		
28	2,430	5		
29	2,270	5		
30	2,120	5		
31	1,970	6		
32	1,820	6		
33	1,680	6		
34	1,540	7		
35	1,410	7	1	
36	1,300	7	1	
37	1,190	8	1	
38	1,090	8	1	
39	1,000	9	2	
40	920	9	2	
41	850	10	2	
42	780	10	4	
43	720	11	4	
44	680	12	4	
45	630	13	5	
46	590	14	6	
47	560	15	7	
48	530	16	7	
49	500	18	10	
50	470	20	10	
51	440	23	12	
52	410	26	14	
53	390	29	16	
54	360	33	20	
55	330	38	24	
56	290	42	30	
57	230	47	36	
58				10,000

APPENDIX 1

MINNESOTA STATE RETIREMENT SYSTEM STATE EMPLOYEES' RETIREMENT FUND

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* Chapters 356 and 11A of the Minnesota Statutes

** All as of June 30, 1985.

APPENDIX 2

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUND

Military Affairs Calculation

Section 352.85 of Chapter 352 of Minnesota laws provides that certain military affairs personnel may retire at age 60 without being subject to the early retirement reduction of Section 352.116, Subdivision 1. In addition, they may receive disability benefits upon being found disqualified for retention in active military duty. To fund these special benefits, employees and employer contribute an extra 1.6% of payroll.*

At the request of the Executive Director, we have made a determination as to whether the extra 3.2% contribution is sufficient to pay for the additional normal costs arising from the special benefits.

The results of our determination are as follows:

1. Number of active participants	4
2. Annual Payroll	\$125,136
3. Extra normal cost for special military affairs benefits:	
a. amount	2,766
b. percentage of pay	2.21%
4. Sufficiency of extra 3.2% contribution 3.2% / 3(b)	144.8%

* Amended by 1982 Minnesota Laws. Previously, the extra contribution was 1% of payroll.

APPENDIX 3

MINNESOTA STATE RETIREMENT SYSTEM
STATE EMPLOYEES' RETIREMENT FUNDPilots Calculation

Section 352.86 of Chapter 352 of Minnesota laws provides that certain transportation department pilots may retire at age 62 without being subject to the early retirement reduction of Section 352.116, Subdivision 1. In addition, they may receive disability benefits upon being found disqualified for retention as pilots. To fund these special benefits, employees and employer contribute an extra 1.6% of payroll.

At the request of the Executive Director, we have made a determination as to whether the extra 3.2% contribution is sufficient to pay for the additional normal costs arising from the special benefits.

The results of our determination are as follows:

1. Number of active participants	3
2. Annual Payroll	\$117,969
3. Extra normal cost for special pilot benefits:	
a. amount	1,793
b. percentage of pay	1.52%
4. Sufficiency of extra 3.2% contribution 3.2% / 3(b)	210.5%

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

ACTUARIAL VALUATION AS OF
JUNE 30, 1985

Touche Ross & Co.

Board of Directors
Minnesota State Retirement System
529 Jackson at 10th Street
St. Paul, Minnesota 55101

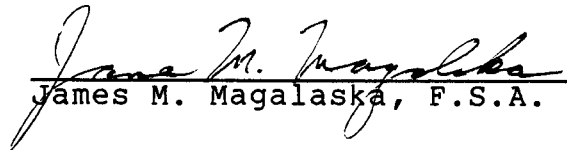
Ladies and Gentlemen:

We have performed an actuarial valuation of the Minnesota State Retirement System State Patrol Retirement Fund as of June 30, 1985.

The valuation was performed on the basis of accepted actuarial methods and procedures, in accordance with the applicable provisions set forth in Minnesota Statutes (Chapter 356) and stipulated in the Contract between the State of Minnesota and Touche Ross & Co.

We hereby certify that on the basis of our valuation, contributions required from employees and the State under Minnesota Statutes (Chapter 352B) represent 107.0% of the requirements set forth in Chapter 356. Furthermore, the entry age normal cost method was utilized in determining the accrued liability for all benefits payable under the Fund, and the valuation was completed in accordance with the rules adopted by the Legislative Commission on Pensions and Retirement, with the exception of the rule requiring a cash flow projection.

TOUCHE ROSS & CO.


James M. Magalaska, F.S.A.


James F. Verlautz, F.S.A.

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REPORT HIGHLIGHTS

	<u>6/30/85</u>	<u>6/30/84</u>
A. Financial and Actuarial Status		
1. Valuation Assets	\$100,486,325	\$ 86,784,592
2. Accrued Liability	134,439,674	119,682,218
3. Unfunded Accrued Liability	33,953,349	32,897,626
4. Accrued Liability Funding Ratio (A1/A2)	74.74%	72.51%
5. Normal Cost	4,755,909 (18.38)*	4,300,078 (18.68)*
B. Contributions		
1. Chapter 356 Requirement	6,624,700 (25.60)*	5,972,650 (25.95)*
2. Actual Prescribed Contribution (Chapter 352)	7,090,018 (27.40)*	6,306,458 (27.40)*
3. Sufficiency (2 / 1)	107.0%	105.6%
C. Depth of Funding - Plan Continuation Basis		
1. Present Value of Accrued Benefits	\$134,568,231	\$119,250,314
2. Depth of Funding (A1 / C1)	74.67%	72.78%

* Parentheses indicate contribution levels as a percentage of valuation salaries.

REPORT HIGHLIGHTS (continued)

	<u>6/30/85</u>	<u>6/30/84</u>
D. Plan Participants		
1. Active Members		
a. Number	765	741
b. Valuation payroll	\$25,875,980	\$23,016,272
2. Retired Members/Beneficiaries		
a. Number	407	397
b. Average annual benefit payable	\$ 9,749	\$ 8,907
3. Deferred Annuitants		
a. Number	20	21
b. Average annual vested benefit	\$ 10,507	\$ 8,085
4. Former Members Without Vested Rights		
a. Number	9	10
b. Average employee contributions	\$ 2,627	\$ 1,998

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

ACTUARIAL VALUATION AS OF JUNE 30, 1985

PURPOSE AND SUMMARY

The purpose of this report is to set forth the financial status of the Minnesota State Retirement System (MSRS) State Patrol Retirement Fund in accordance with the applicable provisions set forth in Chapter 356 and Chapter 11A of the Minnesota Statutes.

Chapter 356 of the Minnesota Statutes sets forth the annual reporting requirements which govern the public employee retirement systems in Minnesota. The principal requirement (in addition to the experience study required every fourth year) is that an actuarial valuation be performed each year and that the valuation specifically set forth the following items based on an assumed 8% pre-retirement and 5% post-retirement interest rate, and a 6-1/2% salary scale assumption:

1. The assets of the plan and the present value of all benefits which will be payable from the plan.
2. The normal cost of the plan (as a level percentage of payroll) based on the entry age normal cost method.
3. The accrued liability of the plan, defined as the present value of all benefits less the present value of future entry age normal costs.
4. An actuarial balance sheet showing accrued assets, accrued liabilities, and the deficit from full funding of the accrued liability (unfunded accrued liability).
5. The annual contribution required to pay normal cost and amortize the June 30, 1985 unfunded accrued liability by June 30, 2009.
6. An analysis explaining the increase or decrease in the unfunded accrued liability since the last valuation.

Chapter 11A of the Minnesota Statutes pertains to the operation of the Minnesota Post Retirement Investment Fund (MPRI Fund). It includes requirements regarding the determination of the present value of benefits payable from the MPRI Fund (as of June 30, 1985 and as of January 1, 1986), and the corresponding mortality gain or loss each year, the latter to facilitate an appropriate transfer between the State Patrol Retirement Fund and the MPRI Fund.

) This reporting on the status of the State Patrol Retirement Fund as of June 30, 1985, is intended to comply with all of the requirements regarding actuarial reporting that are set forth in Chapters 356 and 11A of the Statutes. The Appendix at the end of the report cross-references the information of the Minnesota Statutes set forth herein with that specifically called for under Chapters 356 and 11A respectively.

VALUATION ASSETS

The Executive Director furnished us with a Financial Report setting forth the assets and liabilities of the Fund as of June 30, 1985. The Accounting Balance Sheet furnished by the Executive Director is set forth in Table 2(a).

ACTUARIAL BALANCE SHEETS

Table 2(b) sets forth an Actuarial Balance Sheet summarizing the actuarial valuation. Whereas the previously mentioned Accounting Balance Sheet (Table 2(a)) balances the current assets to date with current accumulated reserves for benefits payable, the Actuarial Balance Sheet compares total assets, including the present value of all future contributions payable to the plan, with the present value of all benefits payable from the plan.

) Table 3(a) sets forth a balance sheet comparing the assets and unfunded accrued liability (the total of the two equaling the accrued liability) to the current liabilities and reserves required under the plan. This table is in the format specifically required by Chapter 356 and is supported by Table 3(b) which sets forth the determination of the unfunded accrued liability as of June 30, 1985. The status of the MPRI fund as of June 30, 1985 was provided by The Wyatt Company, in their role as actuary for the Legislative Commission on Pensions and Retirement.

Table 1

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

Summary of Actuarial Valuation as of June 30, 1985

A. BASIC DATA		
1. Active members		
a. Number		765
b. Valuation payroll	\$	25,875,980
2. Retired members/beneficiaries		
a. Number		407
b. Average annual benefit payable	\$	9,749
3. Deferred annuitants		
a. Number		20
b. Average annual vested benefit	\$	10,507
4. Former members without vested rights		
a. Number		9
b. Average employee contributions	\$	2,627
B. BASIC FINANCIAL RESULTS		
1. Normal cost	\$	4,755,909
2. Accrued liability		134,439,674
3. Valuation assets		100,486,325
4. Portion of accrued liability funded		74.74%
5. Unfunded accrued liability (2 - 3)	\$	33,953,349
C. DETERMINATION OF ANNUAL REQUIREMENT IN ACCORDANCE WITH CHAPTER 356*		
1. Normal cost	\$	4,755,909 (18.38)
2. Assumed operating expenses	\$	150,081 (0.58)
3. Amortization of the unfunded accrued liability by June 30, 2009	\$	1,718,710 (6.64)
4. Total Chapter 356 requirement (1 + 2 + 3)	\$	6,624,700 (25.60)
D. DETERMINATION OF CONTRIBUTION SUFFICIENCY**		
1. Actual prescribed contributions (Chapter 352B)		
a. Employee contributions	\$	2,199,458 (8.50)
b. Employer contribution	\$	4,890,560 (18.90)
c. Total of (a) and (b)	\$	7,090,018 (27.40)

Table 1(continued)

2. Chapter 356 requirements (Per Item C4)	\$ 6,624,700
3. Sufficiency (1(c) / 2)	107.0%

E. DEPTH OF FUNDING - PLAN CONTINUATION BASIS

1. Present value of accrued benefits	
a. Active members	\$ 81,600,327
b. Deferred annuitants	2,287,055
c. Former members without vested rights	23,642
d. Survivors - children	93,434
e. Disabled members	1,031,093
f. Participation in MPRI Fund	44,193,000
g. 6% Increase for Pre-73 Retirees	5,339,680
h. Total present value of accrued benefits	\$134,568,231
2. Valuation assets	100,486,325
3. Portion of accrued benefits funded (2 / 1(h))	74.67%

* Parentheses indicate Chapter 356 contribution levels as a percentage of salary.

** Estimated July 1, 1985 - June 30, 1986 contributions on an accrual basis. Parentheses indicate statutory annual contribution levels as a percentage of salary for Troopers under assumed retirement age, as set forth in Chapter 352B of the Minnesota Statutes.

Table 2(a)

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

Accounting Balance Sheet as of June 30, 1985

A. ASSETS		
1. Cash		\$ 3,063
2. Short term investments (at cost)		6,966,109
3. Accounts receivable:		
a. Accrued employee contributions	104,116	
b. Accrued employer contributions	218,296	
c. Other	<u>571,466</u>	893,878
4. Interest receivable		40,182
5. Investment in debt securities (actuarial value)****		14,074,940
6. Investment in equities (actuarial value)*		34,370,670
7. Participation in MPRI Fund**		<u>44,193,000</u>
8. TOTAL ASSETS		<u>\$100,541,842</u>

B. LIABILITIES AND RESERVESLiabilities

1. Accounts payable - accrued expenses	3,102
2. Due state employees retirement fund	<u>52,415</u>
3. Total liabilities	<u>55,517</u>

Reserves

1. MPRI Fund Reserve**	44,193,000
2. Disability benefit reserve	1,031,093
3. Survivor benefit reserve - children	93,434
4. Employee contribution reserve	14,213,280
5. State contribution reserve	<u>40,955,518</u>
6. TOTAL REQUIRED RESERVES	100,486,325
7. Unrealized loss on equities	0
8. Valuation assets ***	<u>100,486,325</u>

9. TOTAL LIABILITIES AND RESERVES	<u>\$100,541,842</u>
-----------------------------------	----------------------

* Market value as of June 30, 1985 is \$37,148,404 for equities.

** Participation equals Required Reserves for retired lives participating in MPRI Fund.

*** Portion of assets to be applied as valuation assets toward providing benefits.

**** The value at cost as of June 30, 1985 is \$13,966,724 for debt securities.

Table 2(b)

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUNDActuarial Balance Sheet as of June 30, 1985

A. ASSETS

1. Assets on hand from accounting balance sheet:		
a. Reserves for MPRI Fund benefits	\$44,193,000	
b. All other assets	<u>56,348,842</u>	\$100,541,842
2. Present value of employees' future contributions		27,506,196
3. Present value of state future contributions applicable to:		
a. Entry age normal costs	27,894,532	
b. Statutory Supplemental Contribution	<u>44,836,453</u>	<u>72,730,985</u>
4. TOTAL ASSETS		<u>\$200,779,023</u>

B. LIABILITIES

1. Current liabilities from accounting balance sheet		55,517
2. Present value of earned and earnable benefits payable to presently active members:		
a. Current Benefit Obligations*	81,600,327	
b. Future Benefit Obligations	<u>55,272,171</u>	
Total for actives		136,872,498
3. Present value of benefits for deferred annuitants		2,287,055
4. Present value of refundment to former members without vested rights		23,642
5. Present value of survivor benefits - children		93,434
6. Present value of disability benefits		1,031,093
7. Participation in MPRI Fund		44,193,000
8. 6% increase in retirement benefits for pre-73 retirees		<u>5,339,680</u>
9. TOTAL LIABILITIES		<u>\$189,895,919</u>

C. PROJECTED BENEFIT FUNDING RATIO (A/B) 105.7%

* Includes augmentation of benefits equal to \$1,386,492.

Table 3(a)

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

Chapter 356 Balance Sheet as of June 30, 1985

ASSETS AND UNFUNDED ACCRUED LIABILITY

A. ASSETS*

1. Cash		\$ 3,063
2. Short term investments (at cost)		6,966,109
3. Accounts receivable:		
a. Accrued employee contributions	104,116	
b. Accrued employer contributions	218,296	
c. Other receivables	<u>571,466</u>	893,878
4. Interest receivable		40,182
5. Investment in debt securities (actuarial value)		14,074,940
6. Investment in equities (actuarial value)		34,370,670
7. Participation in MPRI Fund**		<u>44,193,000</u>
8. TOTAL ASSETS		<u>\$100,541,842</u>

B. UNFUNDED ACCRUED LIABILITIES

1. Total unfunded accrued liability	<u>33,953,349</u>
2. TOTAL ASSETS AND UNFUNDED ACCRUED LIABILITIES	<u>\$134,495,191</u>

CURRENT LIABILITIES AND RESERVES REQUIRED

C. LIABILITIES

1. Accounts payable - accrued expenses	3,102
2. Due SER Fund	<u>52,415</u>
3. Total liabilities	<u>\$ 55,517</u>

D. RESERVES REQUIRED

1. Total reserves required per attached Table 3(b)	<u>\$134,439,674</u>
2. TOTAL CURRENT LIABILITIES AND RESERVES REQUIRED	<u>\$134,495,191</u>

* Accumulated contributions, without interest, of Troopers not yet retired amounted to \$14,213,280 as of June 30, 1985 (includes accrued but unpaid contributions).

** Participation equals Required Reserves for retired lives participating in the MPRI Fund.

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

Determination of Accrued Liability and
Unfunded Accrued Liability as of June 30, 1985

	<u>Present Value of Benefits</u>	<u>Present Value of Applicable Portion of Normal Cost Contribution</u>	<u>Accrued Liability Equals Reserves Required (1) - (2)</u>
A. DETERMINATION OF ACCRUED LIABILITY			
1. Active Members			
a. Retirement benefits	\$110,934,000	\$ 40,230,960	\$ 70,703,040
b. Disability benefits	9,880,394	5,142,723	4,737,671
c. Refundments due to death or withdrawal	336,060	857,551	(521,491)
d. Survivor and childrens' benefits	4,341,454	2,669,795	1,671,659
e. Vested termination benefits	11,380,590	6,499,699	4,880,891
f. Total active	<u>136,872,498</u>	<u>55,400,728</u>	<u>81,471,770</u>
2. Deferred Annuitants	2,287,055	-	2,287,055
3. Former members without vested rights	23,642	-	23,642
4. Survivors - children	93,434	-	93,434
5. Disabled members	1,031,093	-	1,031,093
6. Participation in MPRI Fund	44,193,000	-	44,193,000
7. 6% increase in retirement benefit fund for pre-73 retirees	5,339,680	-	5,339,680
8. TOTAL	<u>\$189,840,402</u>	<u>\$55,400,728</u>	<u>\$134,439,674</u>
B. DETERMINATION OF UNFUNDED ACCRUED LIABILITY			
1. Accrued Liability	-	-	\$134,439,674
2. Valuation Assets	-	-	100,486,325
3. Unfunded Accrued Liability (1 - 2)	-	-	33,953,349

CONTRIBUTIONS

Chapters 356 and 352B set forth requirements as to the level of contributions. Chapter 352B prescribes the actual amount of contributions and Chapter 356 describes the method used to determine the amount of contribution required to fully fund the Normal Cost and the Unfunded Accrued Liability. Together, the actual contribution and required contribution are used to determine the sufficiency of the actual contribution. These calculations are illustrated below, using a payroll figure of \$25,875,980.

Annual Requirement in Accordance with Chapter 356:

	Percent of Payroll*	Amount
1. Normal cost	18.38%	\$4,755,909
2. Assumed operating expense	.58	150,081
3. Amortization of the Unfunded Accrued Liability by June 30, 2009	6.64	1,718,710
4. Total Chapter 356 requirement (1 + 2 + 3)	25.60%	6,624,700

Actual Contributions:

1. Employee contributions	8.50	\$2,199,458
2. Employer contribution	18.90	4,890,560
3. Total Chapter 352B prescribed contribution	27.40%	7,090,018

Contribution Sufficiency: 107.0%

* Assumed contributed in each payroll period during the year ending June 30, 1986.

The Chapter 356 requirement decreased from 25.95% of payroll at June 30, 1984 to 25.60% at June 30, 1985. This is primarily due to the 12.4% increase in the total payroll base, and a lower entry age among new participants.

MINNESOTA POST RETIREMENT INVESTMENT FUND

Background

The Minnesota Post Retirement Investment Fund (MPRI Fund), previously termed the Minnesota Adjustable Fixed Benefit Fund (MAFB), is basically a vehicle for providing variable annuity payments to pensioners. When an active participant retires, assets equal to the present value of future benefits payable to that participant (and beneficiary, if applicable) are transferred from the State and Employee Contribution Reserves, to the MPRI Fund. Thereafter, benefits are paid from the MPRI Fund. Future benefit increases are determined on the basis of the investment performance of MPRI Fund assets.

Chapter 11A of the Minnesota Statutes provides a method for determining benefit increases. A benefit increase is granted in any year in which the earnings of MPRI Fund assets exceed 5%. In a year in which there is an MPRI Fund deficit (i.e., required reserves exceed MPRI Fund assets), 5% of any income in excess of the 5% requirement is credited towards amortizing the deficit, with the remaining 95% being used to provide benefit increases. If there is no MPRI Fund deficit, all income in excess of the required 5% is used to provide benefit increases.

MPRI Fund Status as of June 30, 1985

Table 4 sets forth the determination of MPRI Fund net assets and reserve requirements as of June 30, 1985.

This information was developed by The Wyatt Company, actuaries for the Legislative Commission on Pensions and Retirement, and is reprinted here without verification.

UNFUNDED ACCRUED LIABILITY

Tables 5 and 6 reconcile the change in the unfunded accrued liability during the year. Table 5 sets forth a demonstration that the decrease in the unfunded accrued liability is equal to the excess of income over deductions during the year, where any decrease in required actuarial reserves is indicated as an income item. Table 6 sets forth our analysis of the change in the unfunded accrued liability.

Table 4

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

Actuarial Information for
Determining MPRI Fund Benefit Increase*

	<u>Amount on</u> <u>6/30/85</u>
1. Expected Reserves Assuming 5% Interest (MPRIF Participation Before Actuarial Gain or Loss)	\$44,764,421*
2. Required Reserves (MPRIF Participation After Actuarial Gain or Loss)	44,193,000**
3. Actuarial Gain (Loss) due to Mortality (1) - (2)	\$ 571,421

Required Reserves (line 2) Valued 1/1/86*

Members Eligible for Increase	\$ 40,169,000
Members Not Eligible for Increase	<u>3,478,000</u>
Total	\$ 43,647,000

* Information supplied by State Board of Investment.

** This information was supplied by The Wyatt Company, actuaries for the Legislative Commission on Pensions and Retirement.

Table 5

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

Analysis of Income and Deductions From Income and
Effect on the Unfunded Accrued Liability

A. INCOME AND OTHER FINANCIAL SOURCES			
1. Contributions from employees			\$ 1,963,882
2. Contributions from employers			4,361,681
3. From investments			
a. Investment income	\$	26,776	
b. General fund appropriation		62,883	
c. Gain on sale of stock		<u>105,836</u>	4,895,495
4. From MPRI Fund participation			4,312,434
5. Unrealized Gains			<u>2,278,584</u>
6. TOTAL INCOME			<u>\$17,812,076</u>
B. DEDUCTIONS FROM INCOME AND OTHER FINANCING USES			
1. Benefits			
a. Service retirement annuities	\$	3,728,904	
b. Disability retirement benefits & children		69,398	
c. Survivor benefits (spouses & children)		<u>172,141</u>	\$ 3,970,443
2. Refundments (employee contributions)			5,723
3. Administrative expenses			134,177
4. Increase in total reserves required			
a. Reserves required 6/30/84		119,682,218	
b. Reserves required 6/30/85		<u>134,439,674</u>	<u>14,757,456</u>
5. TOTAL DEDUCTIONS FROM INCOME			<u>18,867,799</u>
6. EXCESS OF DEDUCTIONS FROM INCOME OVER INCOME			<u>\$ 1,055,723</u>
C. INCREASE IN UNFUNDED ACCRUED LIABILITY			
1. Unfunded accrued liability 6/30/84			\$ 32,897,626
2. Unfunded accrued liability 6/30/85			<u>33,953,349</u>
3. INCREASE IN UNFUNDED ACCRUED LIABILITY			<u>\$ 1,055,723</u>

Table 6

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

Analysis of Change in the Unfunded Accrued Liability
During the Fiscal Year Ending June 30, 1985

1. Unfunded accrued liability as of June 30, 1984		\$32,897,626
2. Change due to current rate of funding and interest requirements		
a. 1984-85 past service contribution	\$(2,032,359)	
b. 8% interest requirement	<u>2,631,810</u>	599,451
3. Change due to actuarial gains (indicated by parentheses) or losses (no parentheses) because of experience deviations from expected		
a. Salary increases	\$ 2,649,202	
b. Investment Income	(3,313,686)	
c. MPRI Fund mortality	(571,421)	
d. Withdrawals, death, disability of active members (balancing item)	<u>1,692,177</u>	<u>456,272</u>
4. Unfunded accrued liability as of June 30, 1985		<u>\$33,953,349</u>

EMPLOYEE DATA

The Executive Director furnished us with employee information pertaining to all active members, inactive members and retired members of the Fund. Tables 7 and 8 summarize the changes in active, inactive and retired membership during the year in accordance with the requirements set forth in Section 356.215 of the Minnesota Statutes, Subdivisions 4 and 5. In addition, age, service and salary distributions are provided in Tables 9(a) and 9(b).

In order to reflect anticipated current year salary increases, all salaries provided were increased by 6.5%.

PLAN VALUED

The provisions of the Minnesota State Retirement System, State Patrol Retirement Fund are governed principally by Chapters 352B and 11A of the Minnesota Statutes pertaining to MPRI Fund Benefits. Table 10 sets forth a summary of the principal provisions as of June 30, 1985.

Table 7

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

Covered State Troopers Census Data as of June 30, 1985

	<u>Number</u>	<u>Annual Payroll</u>
Active at June 30, 1984	741	\$23,016,272
New Entrants*	<u>46</u>	
Total	787	
Less Separations from Active Service:		
Refund of Contributions*	4	74,154
Separation with a Vested Right to a Deferred Annuity	2	67,746
Separation with Neither Refundment nor Right to a Deferred Annuity	1	18,539
Death While Eligible, Surviving Spouse Receiving Annuity	0	0
Service Retirement	16	499,227
Death	<u>0</u>	0
Total Separations	23	
Adjustments	1	28,600
Active at June 30, 1985	765	\$24,296,701

Average Entry Age of New Employees

<u>For the Fiscal Year Ending</u>	<u>Male</u>	<u>Female</u>	<u>Average of Total</u>
6/30/81	27.6	27.8	27.6
6/30/82	24.7	-	24.7
6/30/83	26.4	23.0	26.2
6/30/84	28.0	31.7	28.3
6/30/85	27.8	23.5	27.4

Average age at entry in State service for all active employees at 6/30/85:

Male	27.0
Female	25.3
Total	26.9

* Includes those who entered the plan and terminated during the period from July 1, 1984 to June 30, 1985.

Table 8

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

State Troopers Annuitant Census Data as of June 30, 1985

	<u>Number</u>	<u>Annual Annuity Benefit Payable</u>
A. <u>Service Retirement Annuitants</u>		
Receiving at June 30, 1984	280	\$3,048,741.36
New	18	270,201.24
Deaths	(7)	(81,995.64)
Adjustments-Net Result	<u>(6)</u>	<u>110,301.72</u>
Receiving at June 30, 1985	285	\$3,347,248.68
B. <u>Disabled Employees</u>		
Receiving at June 30, 1984	5	42,577.08
New	3	35,582.64
Deaths	(2)	(22,833.12)
Adjustments-Net Result	<u>7</u>	<u>79,839.24</u>
Receiving at June 30, 1985	13	\$ 135,165.84
C. <u>Widows Receiving an Annuity or Survivor Benefit</u>		
Beneficiaries Receiving an Optional or Reversionary Annuity:		
Receiving at June 30, 1984	96	416,280.96
New	2	20,031.60
Deaths	(2)	(5,702.16)
Adjustments-Net Result	<u>0</u>	<u>28,777.08</u>
Receiving at June 30, 1985	96	\$ 459,387.48

Table 8 (con't)

	<u>Number</u>	<u>Annual Annuity Benefit Payable</u>
D. <u>Children Receiving a Survivor Benefit</u>		
Receiving at June 30, 1984	16	\$ 28,586.52
New	0	0
Reinstated	0	0
No longer eligible	(3)	(5,905.08)
Adjustments-Net Result	<u>0</u>	<u>3,376.08</u>
Receiving at June 30, 1985	13	\$ 26,057.52
E. <u>Deferred Annuitants</u>		
Deferred as of June 30, 1984	21	169,787.16
New	2	23,448.00
Began Receiving	(2)	(4,404.00)
Adjustments-Net Result	<u>(1)</u>	<u>21,312.00</u>
Deferred as of June 30, 1985	20	\$210,143.16

Average Age at Retirement of New Service Annuitants

<u>Fiscal Year Ending</u>	<u>Average Retirement Age</u>
6/30/80	57.6
6/30/81	61.4
6/30/82	58.6
6/30/83	59.8
6/30/84	58.6
6/30/85	58.3
All Existing Service Annuitants	58.5

Table 9(a)

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

Service Groups by Age Groups

Age Group	Service Group							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
Male								
0-19	0							0
20-24	18							18
25-29	58	31						89
30-34	35	58	15					108
35-39	13	35	67	28				143
40-44	2	11	28	95	6			142
45-49	1	2	5	47	42			97
50-54	0	0	3	6	25	34	7	75
55-59	0	1	1	5	14	14	20	55
60-64	0	0	1	2	2	2	2	9
65-69	0	0	0	0	0	1	1	2
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
Total	127	138	120	183	89	51	30	738
Female								
0-19	0							0
20-24	3							3
25-29	4	3						7
30-34	0	9						9
35-39	1	0	3					4
40-44	0	1	2					3
45-49	0	0	0					0
50-54	0	0	1					1
55-59	0	0	0					0
60-64	0	0	0					0
65-69	0	0	0					0
70-74	0	0	0					0
75-79	0	0	0					0
80-84	0	0	0					0
85+	0	0	0					0
Total	8	13	6	0	0	0	0	27

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Table 9(b)

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

Distribution of Annual Earnings by Age Groups

Age Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0-19	0	\$ 0	\$ 0	0	\$ 0	\$ 0	0	\$ 0	\$ 0
20-24	18	\$ 421,903	23,439	3	69,335	23,112	21	491,238	23,392
25-29	89	2,504,603	28,142	7	182,927	26,132	96	2,687,530	27,995
30-34	108	3,384,913	31,342	9	291,691	32,410	117	3,676,604	31,424
35-39	143	4,941,587	34,557	4	143,290	35,823	147	5,084,877	34,591
40-44	142	5,057,653	35,617	3	109,546	36,515	145	5,167,199	35,636
45-49	97	3,469,834	35,771	0	0	0	97	3,469,834	35,771
50-54	75	2,773,289	36,977	1	35,847	35,847	76	2,809,136	36,962
55-59	55	2,045,458	37,190	0	0	0	55	2,045,458	37,190
60-64	9	369,561	41,062	0	0	0	9	369,561	41,062
65-69	2	74,546	37,273	0	0	0	2	74,546	37,273
70-74	0	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0	0
Total	738	\$25,043,347	\$33,934	27	\$ 832,636	\$30,838	765	\$25,875,983	\$33,825

Distribution of Annual Earnings by Service Groups

Service Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0	11	\$ 178,211	\$16,201	1	\$ 24,642	\$24,642	12	\$ 202,853	\$16,904
1	44	1,057,841	24,042	3	69,248	23,083	47	1,127,089	23,981
2	44	1,229,667	27,947	3	85,023	28,341	47	1,314,690	27,972
3	4	117,769	29,442	0	0	0	4	117,769	29,442
4	24	709,446	29,560	1	36,403	36,403	25	745,849	29,834
0-4	127	3,292,934	25,929	8	215,316	26,915	135	3,508,250	25,987
5-9	138	4,571,205	33,125	13	397,270	30,559	151	4,968,475	32,904
10-14	120	4,415,431	36,795	6	220,050	36,675	126	4,635,481	36,790
15-19	183	6,559,103	35,842	0	0	0	183	6,559,103	35,842
20-24	89	3,161,896	35,527	0	0	0	89	3,161,896	35,527
25-29	51	1,906,818	37,389	0	0	0	51	1,906,818	37,389
30+	30	1,135,960	37,865	0	0	0	30	1,135,960	37,865
TOTAL	738	\$25,043,347	\$33,934	27	\$ 832,636	\$30,838	765	\$25,875,983	\$33,825

Table 9(c)

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

Retiree Age Distribution

Annuitants in MPRIF

Male Service Groups

Age Group	Years Retired							Total
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
0-19								0
20-24								0
25-29								0
30-34								0
35-39								0
40-44								0
45-49								0
50-54								0
55-59	54	2	2					58
60-64	58	30	2					90
65-69	21	26	12					59
70-74	1	4	18	10				33
75-79	0	2	2	16	14			34
80-84	0	0	4	0	3	3		10
85+	<u>0</u>	<u>0</u>	<u>0</u>	<u>3</u>	<u>1</u>	<u>1</u>		<u>5</u>
Total	134	64	40	29	18	4	0	289

Female Service Group

0-19								0
20-24								0
25-29								0
30-34	0	1						1
35-39	0	0						0
40-44	0	0						0
45-49	0	0						0
50-54	4	0	1	1				6
55-59	2	3	1	1				7
60-64	2	8	1	2	1			14
65-69	0	1	6	2	0	2		11
70-74	0	2	4	1	5	2		14
75-79	0	0	1	5	4	4	2	16
80-84	0	0	0	2	6	4	1	13
85+	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>4</u>	<u>8</u>	<u>4</u>	<u>17</u>
Total	8	15	14	15	20	20	7	99

Table 9(d)

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

Retiree Benefit Distribution

Annuitants in MPRIF

Age Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
Under 50		\$ 0	\$ 0	1	\$ 2,772	\$2,772	1	\$ 2,772	\$ 2,772
50-54		0	0	6	37,575	6,263	6	37,575	6,263
55-59	58	830,602	14,321	7	67,319	9,617	65	897,921	13,814
60-64	90	1,253,292	13,925	14	115,884	8,277	104	1,369,176	13,165
65-69	59	678,023	11,492	11	51,613	4,692	70	729,636	10,423
70-74	33	311,156	9,429	14	66,481	4,749	47	377,637	8,035
75-79	34	212,180	6,241	16	54,018	3,376	50	266,198	5,324
80-84	10	69,516	6,952	13	40,536	3,118	23	110,052	4,785
85+	5	31,347	6,269	17	48,358	2,845	22	79,705	3,623
Total	289	\$3,386,116	\$11,717	99	\$484,556	\$4,895	388	\$3,870,672	\$ 9,976

Distribution of Annual Benefits by Years of Retirement

Years Retired	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0	17	\$268,822	\$15,813	0	\$ 0	\$ 0	17	\$ 268,822	\$15,813
1	37	538,764	14,561	1	9,420	9,420	38	548,184	14,426
2	31	473,309	15,268	2	14,110	7,055	33	487,419	14,770
3	27	406,112	15,041	2	29,584	14,792	29	435,696	15,024
4	22	266,835	12,129	3	28,301	9,434	25	295,136	11,805
0- 4	134	1,953,842	14,581	8	81,415	10,177	142	2,035,257	14,333
5- 9	64	798,879	12,482	15	133,240	8,883	79	932,119	11,799
10-14	40	344,663	8,617	14	80,449	5,746	54	425,112	7,872
15-19	29	180,107	6,211	15	52,339	3,489	44	232,446	5,283
20-24	18	89,118	4,951	20	60,041	3,002	38	149,159	3,925
25-29	4	19,507	4,877	20	56,970	2,849	24	76,477	3,187
30+	0	0	0	7	20,102	2,872	7	20,102	2,872
TOTAL	289	\$3,386,116	\$11,717	99	\$484,556	\$4,895	388	\$3,870,672	\$9,976

Table 10

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

Summary of Principal Plan Provisions as of June 30, 1985

1. Coverage: From first date of employment.
2. Service Credit: Service is credited from date of coverage. For State Police Officers hired after July 1, 1961, no service is credited after age 60.
3. Contributions:
 - a. Employee: 8.5% of salary.
 - b. State of Minnesota: 18.9% of salary.
4. Final Average Salary: Monthly average for the highest 5 successive years of salary.
5. Normal Retirement:
 - a. Eligibility: Attainment of age 55 and completion of 10 years of service.
 - b. Benefit Amount: 2-1/2% of Final Average Salary for each of the first 25 years of service, plus 2% of Final Average Salary for each year of service thereafter.
6. Form of Payment: Life annuity with actuarially equivalent options also available.
7. Disability Retirement:
 - a. Eligibility:
 - In line of duty: None.
 - Not in line of duty: Five years of service and less than age 55.

b. Benefit Amount:

- In line of duty: 50% of average monthly salary plus 2% for each year of service in excess of 20, offset by Workers' Compensation.
- Not in line of duty: 2-1/2% of average monthly salary for each year up to and including 25 years, plus 2% for each year in excess of 25, subject to a minimum of 25% of average monthly salary.

c. Death Benefits:

If a member dies while receiving a work related disability benefit, 20% of his Final Average Salary is payable to the surviving spouse for life.

8. Deferred Service Retirement:

a. Eligibility: Completion of 10 years of service.

b. Benefit Amount: Retirement benefits payable at normal retirement date are determined according to the normal retirement benefit formula based on the member's Final Average Salary and service at termination, such amount being subject to an increase for each year between termination and retirement of 5% for years prior to January 1, 1981 and 3% compounded annually thereafter.

9. Return of Contributions: If a member terminates before becoming eligible for any other benefits under the plan, his employee contributions are returned with interest at 5%.

10. Surviving Spouse Death Benefit:

a. Eligibility: Death of member in service.

b. Benefit Amount: 20% of Final Average Salary. With 10 or more years of service, changes to a 100% Joint & Survivor annuity amount as of the date the employee would have attained age 55.

11. Children's Death Benefits:

a. Eligibility:

Death benefits are payable to children (below age 18, or 22 if a student) of members who die in active service.

b. Amount:

10% of Final Average Salary, plus \$20 per month prorated equally to such children.

c. Maximum:

Total benefit to all children may not exceed 40% of Final Average Salary.

12. Repayment of Contributions:

a. Eligible Members:

Rehired members.

b. Repayment Provision:

Such rehired member may repay all refundments made to him, including interest at 5% compounded annually. In such case, service previously credited during the prior period of membership is restored.

13. Combined Service Provisions:

a. Eligible Members:

Members who have had coverage under two or more Minnesota Public Retirement Systems, with a total of at least 10 years of credited service.

b. Benefit Provisions:

Benefits under both plans are based on the highest Final Average Salary including all years from both plans, and on the plans in effect on the member's last day in covered public employment.

14. Proportionate Annuity:

Any member who terminates after attaining age 65 and completing at least one year of service is entitled to a proportionate retirement annuity based on his allowable service credit.

15. Pre-1973 Annuitants:

State Troopers who retired prior to 1973 are entitled to an annual 6% increase in benefits.

ACTUARIAL METHODS AND ASSUMPTIONS

Actuarial Methods

Chapter 356 of the Minnesota Statutes calls for the determination of normal cost and accrued liability in accordance with the entry age normal cost method, one of several available projected cost methods. For the June 30, 1985 valuation, we used the traditional individual entry age normal method with normal costs determined as a percentage of salary.

The normal cost as a percentage of payroll for disability, refund, survivor and vested termination benefits is determined by dividing the present value at entry of the applicable benefit by the present value at entry of future compensation.

The unfunded liability is amortized by the level percent of payroll method. (Each amortization payment is calculated as if the following year's payment will increase by 6.5%.)

Actuarial Assumptions

Tables 11(a) and 11(b) summarize the actuarial assumptions used for this valuation. The only change in assumption since the last valuation is one mandated by the rules adopted by the Legislative Commission on Pensions and Retirement. The expense assumption which had been .27% of payroll was changed to the prior year's actual expense expressed as a percentage of prior year's payroll.

Table 11(a)

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

Summary of Actuarial Assumptions and Methods

1. Mortality: 1971 Group Annuity Mortality Table with ages set back 8 years for females.
2. Withdrawal: Rates starting at .03 at age 20 and decreasing to zero at age 55, as set forth in the Separation From Active Service Table.
3. Disability: The rates of disability were adapted from experience of the New York State Employees' Retirement System, as set forth in the Separation From Active Service Table.
4. Expenses: Prior year expenses expressed as a percentage of prior year payroll.
5. Interest Rate: Pre-retirement - 8% per annum.
Post-retirement - 5% per annum.
6. Salary Scale: 6-1/2% per annum, disregarding actual salary history. Benefits in excess of IRC Sec. 415 limits caused by salary increases are disregarded.
7. Assumed Retirement Age: Later of Age 58 for State Troopers and for State Police Officers hired after June 30, 1961, or age 63 for State Police Officers hired before July 1, 1961, and one year hence.
8. Actuarial Cost Method: Individual level percent entry age cost method.
9. Assumed Survivor Status: 100% assumed married, female spouse 3 years younger. Fifteen percent load on spouse benefits for children's benefits.

10. Contribution Refund:

All employees withdrawing after ten years of service were assumed to leave their contributions on deposit and receive a deferred annuitant benefit. Retirement, death and disability benefits were loaded 2% for modified cash refund.

Table 11(b)

MINNESOTA STATE RETIREMENT SYSTEM
STATE PATROL RETIREMENT FUND

Probabilities of Separation From Active Service
(Number Separating at Each Age Per 10,000 Working at That Age)

Age	Death*		Withdrawal**	Disability**
	Males	Females		
20	5	4	300	4
21	5	4	290	4
22	5	4	280	5
23	6	4	270	5
24	6	4	260	6
25	6	5	250	6
26	7	5	240	6
27	7	5	230	7
28	7	5	220	7
29	8	5	210	8
30	8	5	200	8
31	9	6	190	9
32	9	6	180	9
33	10	6	170	10
34	10	7	160	10
35	11	7	150	11
36	12	7	140	12
37	13	8	130	13
38	14	8	120	15
39	15	9	110	16
40	16	9	100	18
41	18	10	90	20
42	20	10	80	22
43	23	11	70	24
44	26	12	60	26
45	29	13	50	29
46	33	14	50	32
47	38	15	50	36
48	42	16	50	41
49	47	18	50	46
50	53	20	200	50
51	59	23	200	57
52	65	26	200	64
53	71	29	200	72
54	78	33	200	80

Table 11(b) (continued)

<u>Age</u>	<u>Death*</u>		<u>Withdrawal**</u>	<u>Disability**</u>
	<u>Males</u>	<u>Females</u>		
55	85	38		88
56	93	42		98
57	100	47		108
58	109	53		118
59	119	59		129
60	131	65		141
61	144	71		154
62	159	78		167

* 1971 Group Annuity Mortality Table, with age set back 8 years for females.

** Same withdrawal and disability rates pertain to males and females.

APPENDIX

MINNESOTA STATE RETIREMENT SYSTEM STATE PATROL RETIREMENT FUND

Table References to Chapter 356 and Chapter 11A*

Table Number	Description**	References
1	Summary of Actuarial Valuation as of June 30, 1985	356.215 Subd. 4(1) 356.215 Subd. 4(7)
2(a)	Accounting Balance Sheet	
2(b)	Actuarial Balance Sheet	
3(a)	Chapter 356 Balance Sheet	356.20 Subd. 4(1) 356.215 Subd. 4(2)
3(b)	Determination of Accrued Liability and Unfunded Accrued Liability	356.215 Subd. 4(6) 356.215 Subd. 4(8)
4	Actuarial Information for Determining MPRI Fund Benefit Increase	11A.18 Subd.(9),(11)
5	Analysis of Income and Deductions From Income and Effect on the Unfunded Accrued Liability	356.20 Subd. 4(2) 356.20 Subd. 4(3) 356.215 Subd. 4(11)
6	Analysis of Change in the Unfunded Accrued Liability During the Fiscal Year Ending June 30, 1985	356.215 Subd. 4(9)
7	Covered State Troopers Census Data	
8	State Troopers Annuitant Census Data	356.20 Subd. 4(4) 356.215 Subd. 4(10)
9(a)	Service Groups by Age Groups	
9(b)	Distribution of Annual Earnings by Age Groups	
9(c)	Retiree Age Distribution	
9(d)	Retiree Benefit Distribution	
10	Summary of Principal Plan Provisions	356.215 Subd. 4(12)
11(a)	Summary of Actuarial Assumptions and Methods	
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* Chapter 356 and 11A of the Minnesota Statutes.

** All as of June 30, 1985.

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND

ACTUARIAL VALUATION AS OF
JUNE 30, 1985

Touche Ross & Co.

Board of Directors
Minnesota State Retirement System
529 Jackson at 10th Street
St. Paul, Minnesota 55101

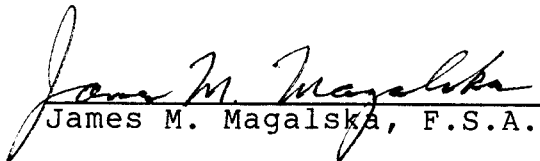
Ladies and Gentlemen:

We have performed an actuarial valuation of the Minnesota State Retirement System Judges' Retirement Fund as of June 30, 1985.

The valuation was performed on the basis of accepted actuarial methods and procedures, in accordance with the applicable provisions set forth in Minnesota Statutes (Chapter 356) and stipulated in the Contract between the State of Minnesota and Touche Ross & Co.

We hereby certify that the entry age normal cost method was utilized in determining the accrued liability for all benefits payable under the Fund, and that the valuation was completed in accordance with the rules adopted by the Legislative Commission on Pensions and Retirement, with the exception of the rule requiring a cash flow projection.

TOUCHE ROSS & CO.


James M. Magalska, F.S.A.


James F. Verlautz, F.S.A.

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REPORT HIGHLIGHTS

June 30, 1985 Valuation

	<u>Judges' Plan</u>	<u>Supreme Court Justices*</u>	<u>Total</u>
A. Financial and Actuarial Status			
1. Valuation Assets	\$13,784,402	\$ --	\$13,784,402
2. Accrued Liability	46,316,110	526,788	46,842,898
3. Unfunded Accrued Liability (2 - 1)	32,531,708	526,788	33,058,496
4. Accrued Liability Funding Ratio (1 / 2)	29.76%	0.00%	29.43%
5. Normal Cost	2,006,121	34,462	2,040,583
B. Contributions			
1. Chapter 356 Requirement**	3,690,405 (24.58)	61,454 (47.27)	3,751,859 (24.77)
2. Actual Prescribed Contribution	606,030 (4.04)	5,200 (4.00)	611,230 (4.04)
C. Depth of Funding - Plan Continuation Basis			
1. Present Value of Accrued Benefits	\$52,039,871	\$ 585,358	\$52,625,229
2. Depth of Funding (A1 / C1)	26.49%	--	26.19%

* Active Justices only - All retired Justices are included in Judges' Plan.

** Parentheses indicate contribution levels as a percentage of the valuation salaries (\$15,015,615 for Judges, \$130,000 for Justices).

REPORT HIGHLIGHTS

Comparison with Previous Valuation

	<u>6/30/85</u>	<u>6/30/84</u>
A. Financial and Actuarial Status		
1. Valuation Assets	\$13,784,402	\$11,791,860
2. Accrued Liability	46,842,898	42,377,889
3. Unfunded Accrued Liability	33,058,496	30,586,029
4. Accrued Liability Funding Ratio (A1/A2)	29.43%	27.83%
5. Normal Cost	2,040,583 (13.47)*	1,949,739 (13.84)*
B. Contributions		
1. Chapter 356 Requirement	3,751,859 (24.77)	3,483,623 (24.73)
2. Actual Prescribed Contribution	611,230 (4.04)	588,714 (4.18)
C. Depth of Funding - Plan Continuation Basis		
1. Present Value of Accrued Benefits	\$52,625,229	\$47,379,539
2. Depth of Funding (A1/C1)	26.19%	24.89%

* Contribution level as a percentage of the valuation salaries.

REPORT HIGHLIGHTS (continued)

	<u>6/30/85</u>	<u>6/30/84</u>
D. Plan Participants		
1. Active Members		
a. Number	239	244
b. Valuation payroll	\$15,145,615	\$14,083,111
c. Average salary	63,371	57,718
2. Retired Members/Beneficiaries		
a. Number	139	136
b. Average annual benefit	\$ 16,136	\$ 14,873
3. Deferred Annuitants		
a. Number	8	4
b. Average annual vested benefit	\$ 18,810	\$ 9,334
4. Former Members Without Vested Rights		
a. Number	0	2
b. Average employee contributions	0	0

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND

ACTUARIAL VALUATION AS OF JUNE 30, 1985

PURPOSE AND SUMMARY

The purpose of this report is to set forth the financial status of the Minnesota State Retirement System (MSRS) Judges' Retirement Fund in accordance with the applicable provisions set forth in Chapter 356 and Chapter 11A of the Minnesota Statutes.

Chapter 356 of the Minnesota Statutes sets forth the annual reporting requirements which govern the public employee retirement systems in Minnesota. The principal requirement (in addition to the experience study required every fourth year) is that an actuarial valuation be performed each year and that the valuation specifically set forth the following items based on an assumed 8% pre-retirement and 5% post-retirement interest rate and a 6-1/2% salary scale assumption:

1. The assets of the plan and the present value of all benefits which will be payable from the plan.
2. The normal cost of the plan (as a level percentage of payroll) based on the entry age normal cost method.
3. The accrued liability of the plan, defined as the present value of all benefits less the present value of future entry age normal costs.
4. An actuarial balance sheet showing accrued assets, accrued liabilities, and the deficit from full funding of the accrued liability (unfunded accrued liability).
5. The annual contribution required to pay normal cost and amortize the June 30, 1985 unfunded accrued liability by June 30, 2009.
6. An analysis explaining the increase or decrease in the unfunded accrued liability since the last valuation.

Chapter 11A of the Minnesota Statutes pertains to the operation of the Minnesota Post Retirement Investment Fund (MPRI Fund). It includes requirements regarding the determination of the present value of benefits payable from the MPRI Fund (as of June 30, 1985 and as of January 1, 1986), and the corresponding mortality gain or loss each year, the latter to facilitate an appropriate transfer between the Judges' Retirement Fund and the MPRI Fund.

) This reporting on the status of the Judges' Retirement Fund as of June 30, 1985, is intended to comply with all of the requirements regarding actuarial reporting that are set forth in Chapters 356 and 11A of the Statutes. The Appendix at the end of the report cross-references the information of the Minnesota Statutes set forth herein with that specifically called for under Chapters 356 and 11A respectively.

VALUATION ASSETS

The Executive Director furnished us with a Financial Report setting forth the assets and liabilities of the Fund as of June 30, 1985. The Accounting Balance Sheet furnished by the Executive Director is set forth in Table 1.

ACTUARIAL BALANCE SHEETS

Table 2 sets forth an Actuarial Balance Sheet summarizing the actuarial valuation. Whereas the previously mentioned Accounting Balance Sheet (Table 1) balances the current assets to date with current accumulated reserves for benefits payable, the Actuarial Balance Sheet compares total assets, including the present value of all future contributions payable to the plan, with the present value of all benefits payable from the plan.

) Table 3(a) sets forth a balance sheet comparing the assets and unfunded accrued liability (the total of the two equaling the accrued liability) to the current liabilities and reserves required under the plan. This table is in the format specifically required by Chapter 356 and is supported by Table 3(b) which sets forth the determination of the unfunded accrued liability as of June 30, 1985. The status of the MPRI fund as of June 30, 1985 was provided by The Wyatt Company, in their role as actuary for the Legislative Commission on Pensions and Retirement.

Table 1

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND

Accounting Balance Sheet as of June 30, 1985

A. ASSETS

1. Cash	\$ 3,426
2. Short term investments (at cost)	702,636
3. Accrued Judges' contributions	5,459
4. Interest receivable	3,699
5. Investment in debt securities (actuarial value)****	984,983
6. Due from State	1,023,706
7. Investment in equities (actuarial value)*	2,402,656
8. Participation in MPRI Fund**	9,029,000
	<hr/>
TOTAL ASSETS	<u>\$14,155,565</u>

B. LIABILITIES AND RESERVES

Liabilities

1. Due SER Fund	\$ 29,359
2. Accounts Payable	
a. Annuitants	0
b. Accrued expenses	225
3. Deferred Revenue	78,850
4. Due to MPRI F	262,729
5. Total liabilities	<hr/> \$ 371,163

Reserves

1. MPRI Fund Reserve	9,029,000
2. Member contribution reserve	3,309,759
3. Retirement Reserve - "Old Law" Judges	1,935,038
4. Retirement Reserve - Additional Judges and Survivors	9,253,857
5. State contribution reserve	(9,743,252)
6. Total reserves	<hr/> \$13,784,402
7. Unrealized loss on equities	0
8. Valuation Assets***	<hr/> \$13,784,402
9. TOTAL LIABILITIES AND RESERVES	<u>\$14,155,565</u>

* Market value as of June 30, 1985 is \$2,599,514 for equities.

** Participation equals Required Reserves for retired lives participating in the MPRI fund.

*** Portion of assets to be applied as valuation assets towards providing benefits.

**** The value at cost as of June 30, 1985 is \$979,640 for debt securities.

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND

Actuarial Balance Sheet as of June 30, 1985

A. ASSETS

1. Assets on hand from accounting balance sheet:		
a. Participation in MPRI Fund	\$9,029,000	
b. All other assets	<u>5,126,565</u>	\$ 14,155,565
2. Present value of employees' future contributions		6,603,631
3. Present value of state future contributions*		<u>0</u>
4. TOTAL ASSETS		<u>\$20,759,196</u>

B. LIABILITIES

1. Current liabilities from accounting balance sheet		\$ 371,163
2. Present value of earned and earnable benefits payable to presently active members:		
a. Current benefit obligations	\$31,245,618	
b. Future benefit obligations	<u>15,023,882</u>	46,269,500
3. Present value of benefits for deferred annuitants		1,161,716
4. Present value of refundment to former members without vested rights		0
5. Present value of benefits for presently retired persons		
a. Participation in MPRI Fund	\$ 9,029,000	
b. From Judges' Fund	<u>11,188,895</u>	<u>20,217,895</u>
6. TOTAL LIABILITIES		<u>\$68,020,274</u>

C. PROJECTED BENEFIT FUNDING RATIO (A / B) 30.5%

* No annual contributions are made by the State, except to "purchase" annuity benefits from MPRI at retirement. The annuity purchases have not been included in this calculation.

Table 3(a)

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND

Chapter 356 Balance Sheet as of June 30, 1985

ASSETS AND UNFUNDED ACCRUED LIABILITY

A. ASSETS(1)

1. Cash	\$ 3,426
2. Short term investments (at cost)	702,636
3. Accounts receivable	
- accrued judges' contributions	5,459
4. Interest receivable	3,699
5. Investment in debt securities	
(actuarial value)	984,983
6. Due from State	1,023,706
7. Investment in equities (actuarial value)	2,402,656
8. Participation in MPRI Fund(2)	9,029,000
9. TOTAL ASSETS	<u>\$14,155,565</u>

B. UNFUNDED ACCRUED LIABILITY

1. Total unfunded accrued liability	33,058,496
2. TOTAL ASSETS AND UNFUNDED ACCRUED LIABILITY	<u>\$47,214,061</u>

CURRENT LIABILITIES AND RESERVES REQUIRED

C. LIABILITIES

1. Due SER Fund	\$ 29,359
2. Accounts Payable - annuitants	0
- accrued expenses	225
3. Deferred Revenue	78,850
4. Due to MPRIF	262,729
5. TOTAL LIABILITIES	<u>\$ 371,163</u>

D. RESERVES REQUIRED

1. Total reserves required per attached Table 3(b)	46,842,898
2. TOTAL CURRENT LIABILITIES AND RESERVES REQUIRED	<u>\$47,214,061</u>

(1) Accumulated contributions, without interest, of members not yet retired amounted to \$3,309,759 as of June 30, 1985 (includes accrued but unpaid contributions).

(2) Participation equals Required Reserves for retired lives participating in the MPRI fund as of June 30, 1985, excluding the January 1, 1986 benefit increases.

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND

Determination of Accrued Liability and
Unfunded Accrued Liability as of June 30, 1985

Touche Ross & Co

	<u>Present Value of Benefits</u>	<u>Present Value of Applicable Portion of Normal Cost Contribution</u>	<u>Accrued Liability Equals Reserves Required (1) - (2)</u>
A. DETERMINATION OF ACCRUED LIABILITY			
1. Active Members			
a. Retirement benefits	\$35,938,394	\$13,949,459	\$21,988,935
b. Disability benefits	3,222,045	2,071,061	1,150,984
c. Refundments due to death or withdrawal	-	-	-
d. Surviving spouse benefit	7,109,061	4,785,693	2,323,368
e. Subtotal	<u>46,269,500</u>	<u>20,806,213</u>	<u>25,463,287</u>
2. Deferred annuitants	1,161,716	-	1,161,716
3. Former members without vested rights	0	-	0
4. Retirement and survivors benefits from Judges' Fund	11,188,895	-	11,188,895
5. Participation in MPRI Fund	9,029,000	-	9,029,000
6. Total	<u>\$67,649,111</u>	<u>\$20,806,213</u>	<u>\$46,842,898</u>
B. DETERMINATION OF UNFUNDED ACCRUED LIABILITY			
1. Accrued Liability	-	-	\$46,842,898
2. Valuation assets	-	-	13,784,402
3. Unfunded accrued liability (1 - 2)	-	-	33,058,496

CONTRIBUTIONS

Chapters 356 and 490 set forth requirements as to the level of contributions. Chapter 490 prescribes the actual amount of contributions and Chapter 356 describes the method used to determine the amount of contribution required to fully fund the Normal Cost and the Unfunded Accrued Liability. The calculations below use a payroll figure of \$15,145,615.

Annual Requirement in Accordance with Chapter 356:

	<u>Percent of Payroll</u>	<u>Amount</u>
1. Normal cost	13.47%	\$2,040,583
2. Assumed operating expense	.25	37,864
3. Amortization of the Unfunded Accrued Liability by June 30, 2009	11.05	1,673,412
4. Total Chapter 356 requirement (1 + 2 + 3)	24.77	3,751,859

DEPTH OF FUNDING

The depth of funding is an indication of the extent to which the accrued benefits are funded and is measured by the ratio of valuation assets to the present value of accrued benefits. These measurements are made on the plan continuation basis (applying actuarial assumptions including assumed salary increases) and are illustrated as follows:

Depth of Funding:

1. Active members	\$31,245,618
2. Deferred annuitants	1,161,716
3. Former members without vested rights	0
4. Retirement and survivors' benefits not payable from MPRI Fund	11,188,895
5. Participation in MPRI Fund	<u>9,029,000</u>
6. Total present value of accrued benefits	\$52,625,229
7. Valuation assets	13,784,402
8. Depth of Funding (7 / 6)	26.19%

MINNESOTA POST RETIREMENT INVESTMENT FUND

Background

The Minnesota Post Retirement Investment Fund (MPRI Fund), previously termed the Minnesota Adjustable Fixed Benefit Fund (MAFB), is basically a vehicle for providing variable annuity payments to pensioners. When an active participant retires, assets equal to the present value of future benefits payable to that participant (and beneficiary, if applicable) are transferred from the State and Employee Contribution Reserves, to the MPRI Fund. Thereafter, benefits are paid from the MPRI Fund. Future benefit increases are determined on the basis of the investment performance of MPRI Fund assets.

Chapter 11A of the Minnesota Statutes provides a method for determining benefit increases. A benefit increase is granted in any year in which the earnings of MPRI Fund assets exceed 5%. In a year in which there is an MPRI Fund deficit (i.e., required reserves exceed MPRI Fund assets), 5% of any income in excess of the 5% requirement is credited towards amortizing the deficit, with the remaining 95% being used to provide benefit increases. If there is no MPRI Fund deficit, all income in excess of the required 5% is used to provide benefit increases.

MPRI Fund Status as of June 30, 1985

Table 4 sets forth the determination of MPRI Fund net assets and reserve requirements as of June 30, 1985.

This information was developed by The Wyatt Company, actuaries for the Legislative Commission on Pensions and Retirement, and is reprinted here without verification.

UNFUNDED ACCRUED LIABILITY

Tables 5 and 6 reconcile the change in the unfunded accrued liability during the year. Table 5 sets forth a demonstration that the increase in the unfunded accrued liability is equal to the excess of deductions over income during the year, where any increase in required actuarial reserves is indicated as a deduction item. Table 6 sets forth our analysis of the change in the unfunded accrued liability.

Table 4

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT PLAN

Actuarial Information for
Determining MPRI Fund Benefit Increase

	<u>Amount on</u> <u>6/30/85</u>
1. Expected Reserves Assuming 5% Interest (MPRIIF Participation Before Actuarial Gain or Loss)	\$8,766,271*
2. Required Reserves (MPRIIF Participation After Actuarial Gain or Loss)	9,029,000**
3. Actuarial Gain (Loss) due to Mortality (1) - (2)	\$ (262,729)

Required Reserves (line 2) Valued 1/1/86*

Members Eligible for Increase	\$ 7,223,000
Members Not Eligible for Increase	<u>1,680,000</u>
Total	\$ 8,903,000

* Information supplied by State Board of Investment.

** Information supplied by The Wyatt Company, actuaries for
the Legislative Commission on Pensions and Retirement.

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND

Analysis of Income and Deductions From Income and
Effect on the Unfunded Accrued Liability

A.	INCOME		
1.	From Judges' contributions		\$ 500,554
2.	From Employer contributions		2,225,706
3.	From investments		
a.	Investment income	401,320	
b.	Gain on sale of stock	<u>6,876</u>	408,196
4.	Participation in MPRI Fund income		810,606
5.	Other Revenues		83,819
6.	Unrealized Gains		<u>157,285</u>
7.	TOTAL INCOME		<u>\$4,186,166</u>
B.	DEDUCTIONS FROM INCOME		
1.	Benefits		
a.	Judges' Plan service retirement annuities	1,608,744	
b.	Judges' Plan disability annuities	44,977	
c.	Judges' Plan survivor benefits (spouses) and other judges	<u>504,179</u>	2,157,900
2.	Refundments (employee contributions)		
a.	Refunds	634	
b.	Interest on refunds	<u>0</u>	634
3.	Administrative expenses		35,090
4.	Increase in total reserves required		
a.	Reserves required 6/30/84	42,377,889	
b.	Reserves required 6/30/85	<u>46,842,898</u>	4,465,009
5.	TOTAL DEDUCTIONS FROM INCOME		<u>\$ 6,658,633</u>
6.	EXCESS OF DEDUCTIONS FROM INCOME OVER INCOME		<u>\$ 2,472,467</u>
C.	INCREASE IN UNFUNDED ACCRUED LIABILITY		
1.	Unfunded accrued liability 6/30/84		30,586,029
2.	Unfunded accrued liability 6/30/85		<u>33,058,496</u>
3.	INCREASE IN UNFUNDED ACCRUED LIABILITY		<u>\$ 2,472,467</u>

Table 6

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND

Analysis of Change in the Unfunded Accrued Liability
During the Fiscal Year Ending June 30, 1985

1. Unfunded accrued liability as of June 30, 1984		\$30,586,029
2. Change due to current rate of funding and interest requirements		
a. 8% interest requirement	2,446,882	
b. 1984-85 past service contribution	<u>771,088</u>	
c. Net addition: (a) - (b)		1,675,794
3. Change due to actuarial gains (indicated by parentheses) or losses (no parentheses) because of experience deviations from expected		
a. Salary	630,042	
b. Investment income	(276,404)	
c. MPRI Fund mortality	262,729	
d. Mortality on other retirees	1,350	
e. Social Security	140,467	
f. Withdrawals, death, disability of active members (balancing item)	<u>38,489</u>	<u>796,673</u>
4. Unfunded accrued liability as of June 30, 1985		<u>\$33,058,496</u>

EMPLOYEE DATA

) The Executive Director furnished us with employee information pertaining to all active members, inactive members and retired members of the Fund. Tables 7 and 8 summarize the changes in active, inactive and retired membership during the year in accordance with the requirements set forth in Section 356.215 of the Minnesota Statutes, Subdivisions 4 and 5. In addition, age and service, salary and benefit distributions are provided in Tables 9(a) and 9(b) for active employees and 10(a) and 10(b) for retirees.

PLAN VALUED

The provisions of the Minnesota State Retirement System, Judges' Retirement Fund are governed principally by Chapters 490 and 11A of the Minnesota Statutes pertaining to MPRI Fund Benefits. Table 11 sets forth a summary of the principal provisions as of June 30, 1985. No significant changes to Chapter 490 were reported since the last actuarial valuation as of June 30, 1984.

)

Table 7

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND

Covered Judges' Retirement Fund Employee Census Data
as of June 30, 1985

	<u>Number</u>	<u>Annual Payroll</u>
Active at June 30, 1984	241*	\$14,083,111
New Entrants	<u>9</u>	
Total	250	
Less Separations from Active Service:		
Inactive Vested	3	171,600
Service Retirement	6	343,200
Death while eligible, Spouse Receiving Annuity	2	114,400
Death, Refund to Beneficiary	<u>2</u>	114,400
Total Separations	13	
Active at June 30, 1985	237*	15,015,615

Average Entry Age of New Employees

<u>For the Fiscal Year Ending</u>	<u>Average Age at Entry</u>
6/30/81	43.8
6/30/82	41.3
6/30/83	41.0
6/30/84	43.7
6/30/85	34.2

Average age at entry in State service for all active employees
at 6/30/85:

Male	41.5
Female	41.5
Total	41.5

* Not including Supreme Court Justices.

Table 8

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND

Judges' Retirement Fund Annuitant Census Data
as of June 30, 1985

	<u>Number</u>	<u>Annual Annuity Benefit Payable</u>
A. <u>Service Retirement Annuitants</u>		
Receiving at June 30, 1984	79	\$1,479,358.20
New	6	138,483.12
Deaths	(2)	(61,422.48)
Adjustments-Net Result	<u>0</u>	<u>93,625.44</u>
Receiving at June 30, 1985	83	1,650,044.28
B. <u>Disabled Employees</u>		
Receiving at June 30, 1984	2	27,412.80
New	2	49,369.80
Adjustments-Net Result	<u>0</u>	<u>1,891.48</u>
Receiving at June 30, 1985	4	78,674.08
C. <u>Widows Receiving an Annuity or Survivor Benefit</u>		
Receiving at June 30, 1984	55	516,005.76
New	0	.00
Deaths	(3)	(34,680.00)
Adjustments-Net Result	<u>0</u>	<u>32,853.60</u>
Receiving at June 30, 1985	52	514,179.36
D. <u>Children Receiving a Survivor Benefit</u>		
Receiving at June 30, 1985	None	

Table 8 (con't)

	<u>Number</u>	<u>Annual Annuity Benefit Payable</u>
E. <u>Deferred Annuitants</u>		
Deferred as of June 30, 1984	4	\$37,336.56
New	4	108,679.92
Adjustments	<u>0</u>	<u>4,461.72</u>
Deferred as of June 30, 1985	8	\$150,478.20

Average Age at Retirement of New Service Annuitants*

<u>Fiscal Year Ending</u>	<u>Average Retirement Age</u>
6/30/81	67.1
6/30/82	65.2
6/30/83	67.7
6/30/84	69.2
6/30/85	68.0
All Existing Service Annuitants	68.1

* Not including District or Supreme Court, or County Paid Judges or Widows.

Table 9(a)

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND
Active Judges

Employee Age and Service Distribution

Age Group	Service Group							Total
	0-4	5-9	10-14	15-19	20-24	25-30	30+	
<u>Male</u>								
0 - 19								0
20 - 24								0
25 - 29								0
30 - 34	3							3
35 - 39	12	1						13
40 - 44	19	9	1					29
45 - 49	5	12	15	2	1			35
50 - 54	4	4	7	6				21
55 - 59	4	7	17	7	5	3	3	46
60 - 64	4	5	8	11	12	7	1	48
65 - 69	1	2	3	5	6	0	4	21
70 - 74	0	0	0	0	0	0	0	0
75 - 79	0	0	0	0	0	0	0	0
79 - 84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
Total	52	40	51	31	24	10	8	216

Female

0 - 19								0
20 - 24								0
25 - 29								0
30 - 34	1							1
35 - 39	7							7
40 - 44	3	1						4
45 - 49	0	1						1
50 - 54	1	1	2					4
55 - 59	1	1	0					2
60 - 64	1	1	0					2
65 - 69	0	0	0					0
70 - 74	0	0	0					0
75 - 79	0	0	0					0
80 - 84	0	0	0					0
85+	0	0	0					0
TOTAL	14	5	2	0	0	0	0	21

Tabl- 9(b)

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND
Active Judges

Employee Salary Distribution

Age Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0 - 19	0	\$ 0	\$ 0	0	\$ 0	\$ 0	0	\$ 0	\$ 0
20 - 24	0	0	0	0	0	0	0	0	0
25 - 29	0	0	0	0	0	0	0	0	0
30 - 34	3	188,760	62,920	1	62,920	62,920	4	251,680	62,920
35 - 39	13	817,959	62,920	7	440,439	62,920	20	1,258,398	62,920
40 - 44	29	1,827,382	63,013	4	254,384	63,596	33	2,081,766	63,084
45 - 49	35	2,204,901	62,997	1	62,920	62,920	36	2,267,821	62,995
50 - 54	21	1,321,318	62,920	4	254,384	63,596	25	1,575,702	63,028
55 - 59	46	2,897,497	62,989	2	138,994	69,497	48	3,036,491	63,260
60 - 64	48	3,067,833	63,913	2	136,290	68,145	50	3,204,123	64,082
65 - 69	21	1,339,634	63,792	0	0	0	21	1,339,634	63,792
70 - 74	0	0	0	0	0	0	0	0	0
75 - 79	0	0	0	0	0	0	0	0	0
80 - 84	0	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0	0
Total	216	\$13,665,284	\$63,265	21	\$1,350,331	\$64,301	237	\$15,015,615	\$63,357

Distribution of Annual Earnings By Service Groups

Service Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0	7	\$ 440,439	\$62,920	2	\$ 125,840	\$62,920	9	\$ 566,279	\$62,920
1	13	831,583	63,968	6	377,519	62,920	19	1,209,102	63,637
2	18	1,132,559	62,920	4	262,130	65,533	22	1,394,689	63,395
3	6	372,350	62,058	1	62,920	62,920	7	435,270	62,181
4	8	503,359	62,920	1	62,920	62,920	9	566,279	62,920
0 - 4	52	3,280,290	63,083	14	891,329	63,666	66	4,171,619	63,206
5 - 9	40	2,527,247	63,181	5	330,458	66,092	45	2,857,705	63,505
10 - 14	51	3,214,324	63,026	2	128,544	64,272	53	3,342,868	63,073
15 - 19	31	1,974,122	63,681	0	0	0	31	1,974,122	63,681
20 - 24	24	1,528,897	63,704	0	0	0	24	1,528,897	63,704
25 - 29	10	624,029	62,403	0	0	0	10	624,029	62,403
30+	8	516,375	64,547	0	0	0	8	516,375	64,547
Total	216	\$13,665,284	\$63,265	21	\$1,350,331	\$64,301	237	\$15,015,615	\$63,357

Table 10(a)

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUNDAnnuitants in MPRIF*
(Includes Retired and Disabled)Retiree Age Distribution

Age Group	Years Retired							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
<u>Male</u>								
Under 40	0							0
40 - 44	0							0
45 - 49	0							0
50 - 54	0							0
55 - 59	0							0
60 - 64	4							4
65 - 69	7	1						8
70 - 74	11	8	1					20
75 - 79	4	12	1					17
80 - 84	0	1	3					4
85 & over	<u>0</u>	<u>0</u>	<u>1</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>1</u>
Total	26	22	6	0	0	0	0	54
<u>Female</u>								
Under 40	0							0
40 - 44	0							0
45 - 49	0							0
50 - 54	0							0
55 - 59	0							0
60 - 64	0							0
65 - 69	0							0
70 - 74	0							0
75 - 79	0	0	1					1
80 - 84	0	0	0					0
85 & over	<u>0</u>	<u>0</u>	<u>0</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>0</u>
Total	0	0	1	0	0	0	0	1

*Only includes Judges retired after January 1, 1974.

MINNESOTA STATE RETIREMENT SYSTEM

Annuitants in MPRIF
(Includes Retired and Disabled)Distribution of Annual Benefit by Age Group

Age Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
Under 50		\$	\$		\$	\$		\$	\$ 0
50 - 54	0								0
55 - 59	0								0
60 - 64	4	72,619	18,155				4	72,619	18,155
65 - 69	8	183,111	22,889				8	183,111	22,889
70 - 74	20	401,828	20,091				20	401,828	20,091
75 - 79	17	283,966	16,704	1	11,446	11,446	18	295,412	16,412
80 - 84	4	80,457	20,114	0	0	0	4	80,457	20,114
85+	1	9,975	9,975	0	0	0	1	9,975	9,975
Total	54	\$1,031,956	\$19,110	1	\$11,446	\$11,446	55	\$1,043,402	\$18,971

Distribution of Annual Benefit By Years Retired

Years Retired	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0	8	\$ 187,853	\$23,482	0	\$ 0	\$ 0	8	\$ 187,853	\$23,482
1	2	32,483	16,242	0	0	0	2	32,483	16,242
2	8	177,925	22,241	0	0	0	8	177,925	22,241
3	2	49,844	24,922	0	0	0	2	49,844	24,922
4	6	103,669	17,278	0	0	0	6	103,669	17,278
0 - 4	26	551,774	21,222	0	0	0	26	551,774	21,222
5 - 9	22	387,050	17,593	0	0	0	22	387,050	17,593
10 - 14	6	93,132	15,522	1	11,446	11,446	7	104,578	14,940
15 - 19	0	0	0	0	0	0	0	0	0
20 - 24	0	0	0	0	0	0	0	0	0
25 - 29	0	0	0	0	0	0	0	0	0
30+	0	0	0	0	0	0	0	0	0
Total	54	\$1,031,956	\$19,110	1	\$11,446	\$11,446	55	\$1,043,402	\$18,971

Table 11

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND

Summary of Principal Plan Provisions as of June 30, 1985

A. JUDGES' PLAN

1. Coverage: From first date as a Judge.
2. Types of Coverage:
 - a. Including Social Security: All Judges except those excluded by Item 2(b) are covered by Social Security.
 - b. Not Including Social Security: Judges prior to January 1, 1974 were given the opportunity to elect not to be covered under Social Security.
3. Contributions:
 - a. From Judges: Judges pay the Social Security Tax Rate applied to the entire salary, plus an additional 1/2% of salary. For those Judges with Social Security coverage, the appropriate portion of this contribution is forwarded to Social Security.
 - b. From the State: The State provides any additional funds necessary to meet obligations, as Judges retire.
4. Final Average Salary: Monthly average for the highest 5 years of salary within the last 10 years.
5. Normal Retirement:
 - a. Eligibility: Earlier of:
 - attainment of age 65 and completion of 10 years of service; or
 - attainment of age 70.

Table 11 (con't.)

- b. Benefit Amount: 2-1/2% of Final Average Salary for each year of service prior to June 30, 1980, plus 3% of Final Average Salary for each year thereafter.
- c. Maximum Benefit: 65% of annual salary in the year immediately preceding retirement.
6. Early Retirement:
- a. Eligibility: Attainment of age 62 and completion of 10 years of service.
- b. Benefit Amount: Normal Retirement benefit formula based on service and Final Average Salary to date of early retirement but reduced 1/2% for each month that actual retirement precedes age 65.
7. Form of Payment: Life annuity with no guarantees upon death. Joint & Survivor options are available.
8. Disability Retirement:
- a. Eligibility: None other than disablement while in office.
- b. Benefit Amount:
- Full salary for the first two years of disability paid outside the plan.
 - After two years of disability, an annuity computed in the same manner as the full benefit amount for service retirement, subject to a minimum of 25% of Final Average Salary.

Table 11 (con't.)

9. Deferred Service Retirement:

Any annuity benefit described above may be deferred until the early or normal retirement date.

10. Return of Contributions:

Upon termination of employment, if a Judge qualifies for no other benefits under this plan, he will receive his contributions accumulated with interest at a rate of 5% compounded annually.

11. Pre-Retirement Survivor's Annuity:

60% of the annuity determined in the same manner as normal service retirement benefits assuming the Judge retired on his date of death. Subject to minimum of 25% of Final Average Salary.

12. Post-Retirement Survivor's Annuity:

a. Joint and Survivor Election:

In lieu of receiving benefits in the standard life annuity form of payment, a retiring Judge may elect actuarially reduced benefits in the joint and survivor annuity form.

b. Prior Survivor's Benefits:

Benefits for Judges who were in office prior to January 1, 1974 and who continue to make additional contributions of 4% of salary receive benefits in the 50% joint and survivor form, with no actuarial reduction.

13. Social Security Offset:

For Judges participating in Social Security, Judges' Plan benefits are reduced by 75% of the primary Social Security benefit payable.

Table 11 (con't.)

B. SUPREME COURT JUSTICES' PLAN

1. Coverage: Supreme Court Justices as of December 31, 1973 who elected coverage under Chapter 490.025 in lieu of coverage under Chapters 490.121 through 490.132.
2. Retirement With Continuation of Compensation:
 - a. Eligibility: Attainment of age 70 and completion of 12 years of Supreme Court service, or 15 years of service as Supreme Court Judge and Judge of District Court.
 - b. Benefit Amount: Continuation of final compensation until the end of the term to which the Supreme Court Justice was elected.

50% of final salary plus an additional 2-1/2% of final salary for each year of Supreme Court service in excess of 12, except for service after age 73, payable after the continuation of compensation ceases. The maximum benefit is 75% of final salary.
3. Retirement Without Continuation of Compensation:
 - a. Eligibility: Earlier of:
 - attainment of age 65 and completion of 12 years of Supreme Court service; or
 - attainment of age 70 and completion of two full terms.
 - b. Benefit Amount: 50% of final salary plus an additional 2-1/2% of final salary for each year of Supreme Court service in excess of 12.

Table 11 (cont'd)

4. Disability Benefits:

a. Eligibility: Disablement after completion of two full terms.

b. Benefit Amount: 50% of final salary plus an additional 2-1/2% of final salary for each year of Supreme Court service in excess of 12.

5. Contributions from Judges:

4% of salary to provide a 50% joint and survivor benefit with no actuarial reduction.

ACTUARIAL METHODS AND ASSUMPTIONS

Chapter 356 of the Minnesota Statutes calls for the determination of normal cost and accrued liability in accordance with the entry age normal cost method, one of several available projected cost methods. For the June 30, 1985 valuation, we used the individual entry age normal method, with salary scale.

The unfunded liability is amortized by the level percent of payroll method. (Each amortization payment is calculated as if the following year's payment will increase by 6.5%).

Tables 12(a), (b) and (c) summarize the actuarial assumptions used for this valuation. The only change in assumptions since the previous valuation is one mandated by the rules adopted by the Legislative Commission on Pensions and Retirement. The expense assumptions, which had been .26% of payroll, was changed to the prior year's actual expenses, expressed as a percentage of the prior year's payroll.

Table 12(a)

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND

Summary of Actuarial Assumptions and Methods

A. JUDGES' RETIREMENT FUND

1. Mortality: 1971 Group Annuity Mortality Table with ages set back 8 years for females.
2. Withdrawal: None.
3. Disability: Graded rates based on actual experience, as adjusted by the June 30, 1979 experience analysis and as set forth in the Separation From Active Service Table.
4. Expenses: Prior year expenses expressed as a percentage of prior year's payroll.
5. Interest Rate: 8% per annum pre-retirement, 5% per annum post-retirement.
6. Salary Scale: 6-1/2% per annum, disregarding actual salary history. Benefits in excess of IRC Sec. 415 limits caused by salary increases are disregarded.
7. Assumed Retirement Age: Later of age 68 or one year hence.
8. Actuarial Cost Method: Entry age cost method, with normal cost determined as a level percentage of future payroll on an individual basis.
9. Social Security:
 - a. Primary amount: Maximum current primary amount (\$717.20 per month for 1985), increasing with salary scale.
 - b. Level contribution rate: 7.05% assumed for all future years.
 - c. Covered annual wages: Current annual wage base (\$39,600 for 1985), increasing with salary scale.

Table 12(a) (continued)

B. SUPREME COURT JUSTICES

1. Mortality (Pre- and Post-Retirement): 1971 Group Annuity Mortality with ages set back 8 years for females.
2. Withdrawal: None.
3. Interest Rate: 8% pre-retirement, 5% post-retirement.
4. Salary Scale: 6-1/2% per annum, disregarding actual salary history. Benefits in excess of IRC Sec. 415 limits caused by salary increases are disregarded.
5. Expenses: Prior year expenses expressed as a percentage of prior year's payroll.
6. Retirement Age: Latest of:
 - attainment of age 70;
 - completion of 12 years of service; or
 - one year from valuation date.

Table 12(b)

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND

Male Judges
Probabilities of Separation From Active Service
(Number Separating at Each Age Per 10,000 Working at That Age)

<u>Age</u>	<u>Death</u>	<u>Disability</u>	<u>Age and Service Retirement</u>	<u>Age</u>	<u>Death</u>	<u>Disability</u>	<u>Age and Service Retirement</u>
20	5			45	29	3	
21	5			46	33	5	
22	5			47	38	7	
23	6			48	42	9	
24	6			49	47	11	
25	6			50	53	14	
26	7			51	59	16	
27	7			52	65	20	
28	7			53	71	24	
29	8			54	78	28	
30	8	2		55	85	34	
31	9	2		56	93	40	
32	9	2		57	100	46	
33	10	2		58	109	56	
34	10	2		59	119	66	
35	11	2		60	131	76	
36	12	2		61	144	90	
37	13	2		62	159	110	
38	14	2		63	174	136	
39	15	2		64	192	174	
40	16	2		65	213		
41	18	2		66	236		
42	20	2		67	263		
43	23	3		68			
44	26	3					10,000

Table 12(c)

MINNESOTA STATE RETIREMENT SYSTEM
JUDGES' RETIREMENT FUND

Female Judges
Probabilities of Separation From Active Service
 (Number Separating at Each Age Per 10,000 Working at That Age)

<u>Age</u>	<u>Death</u>	<u>Disability</u>	<u>Age and Service Retirement</u>	<u>Age</u>	<u>Death</u>	<u>Disability</u>	<u>Age and Service Retirement</u>
20	4			45	13	5	
21	4			46	14	6	
22	4			47	15	7	
23	4			48	16	7	
24	4			49	18	10	
25	5			50	20	10	
26	5			51	23	12	
27	5			52	26	14	
28	5			53	29	16	
29	5			54	33	20	
30	5			55	38	24	
31	6			56	42	30	
32	6			57	47	36	
33	6			58	53	44	
34	7			59	59	52	
35	7	1		60	65	62	
36	7	1		61	71	74	
37	8	1		62	78	88	
38	8	1		63	85	104	
39	9	2		64	93	122	
40	9	2		65	100		
41	10	2		66	109		
42	10	4		67	119		
43	11	4		68	131		
44	12	4					10,000

APPENDIX

MINNESOTA STATE RETIREMENT SYSTEM JUDGES' RETIREMENT FUND

Table References to Chapter 356 and Chapter 11A*

Table Number	Description**	References
1	Accounting Balance Sheet	
2	Actuarial Balance Sheet	
3(a)	Chapter 356 Balance Sheet	356.20 Subd. 4(1) 356.215 Subd. 4(2) 356.215 Subd. 4(6)
3(b)	Determination of Accrued Liability and Unfunded Accrued Liability	356.215 Subd. 4(8) 11A.18 Subd.(9),(11)
4	Actuarial Information for Determining MPRI Fund Benefit Increase	
5	Analysis of Income and Deductions From Income and Effect on the Unfunded Accrued Liability	356.20 Subd. 4(2) 356.20 Subd. 4(3) 356.215 Subd. 4(11)
6	Analysis of Change in the Unfunded Accrued Liability During the Fiscal Year Ending June 30, 1985	356.215 Subd. 4(9)
7	Covered Judges' Retirement Fund Employee Census Data	
8	Judges' Retirement Fund Annuitant Census Data	356.20 Subd. 4(4) 356.215 Subd. 4(10)
9(a)	Employee Age and Service Distribution	
9(b)	Employee Salary Distribution	
10(a)	Retiree Age Distribution	
10(b)	Distribution of Annual Benefit by Age Group	
11	Summary of Principal Plan Provisions	356.215 Subd. 4(12)
12(a)	Summary of Actuarial Assumptions and Methods	
12(b)	Probabilities of Separation from Active Service - Male Judges	356.215 Subd. 4(4) 356.215 Subd. 4(5)
12(c)	Probabilities of Separation from Active Service - Female Judges	

* Chapter 356 and 11A of the Minnesota Statutes.

** All as of June 30, 1985.

MINNESOTA STATE RETIREMENT SYSTEM
LEGISLATORS' RETIREMENT FUND

ACTUARIAL VALUATION AS OF

JUNE 30, 1985

Board of Directors
Minnesota State Retirement System
529 Jackson at 10th Street
St. Paul, Minnesota 55101

RE: Legislators' Retirement Fund

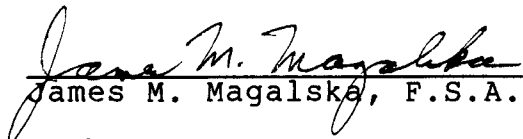
Ladies and Gentlemen:


We show in this report the results of the actuarial valuation of the Minnesota State Retirement System, Legislators' Retirement Fund as of June 30, 1985. This valuation included only the retired legislators participating in the Minnesota Post-Retirement Investment Fund. It was prepared by The Wyatt Company, actuaries for the Legislative Commission on Pensions and Retirement, and we inspected the figures for reasonableness.

The Wyatt Company indicated that this valuation was based on the 5% interest assumption mandated by Chapter 356 of the Minnesota Statutes, and the 1971 Group Annuity Mortality Table with ages set back eight years for females.

Respectfully submitted,

TOUCHE ROSS & CO.


James M. Magalska, F.S.A.


James F. Verlautz, F.S.A.

LEGISLATORS' RETIREMENT FUND

Actuarial Information for
Determining MPRI Fund Benefit Increase

	<u>Amount on</u> <u>6/30/85</u>
1. Expected Reserves Assuming 5% Interest (MPRIF Participation Before Actuarial Gain or Loss)	\$5,978,915*
2. Required Reserves (MPRIF Participation After Actuarial Gain or Loss)	5,977,000**
3. Actuarial Gain (Loss) due to Mortality (1) - (2)	\$ 1,915

Required Reserves (line 2) Valued 1/1/86**

Members Eligible for Increase	\$ 5,491,000
Members Not Eligible for Increase	<u>382,000</u>
Total	\$ 5,873,000

* Information supplied by State Board of Investment.

** Information supplied by The Wyatt Company and reprinted here.

MINNESOTA STATE RETIREMENT SYSTEM
LEGISLATORS' RETIREMENT PLAN

Legislators' Retirement Plan Annuitant Census Data
As of June 30, 1985

	<u>Number</u>	<u>Annual Annuity Benefit Payable</u>
A. <u>Service Retirement Annuitants</u>		
Receiving at June 30, 1984	107	\$ 645,790.68
New	8	51,248.52
Deaths	(7)	(29,086.20)
Adjustments - net result	<u>0</u>	<u>41,394.48</u>
Receiving at June 30, 1985	108	\$ 709,347.48
B. <u>Disabled Employees</u>		
Receiving at June 30, 1985	None	
C. <u>Widows Receiving an Annuity or Survivor Benefit</u>		
Receiving at June 30, 1984	27	\$ 67,732.08
New	7	20,079.72
Deaths	(2)	(4,258.68)
Adjustments - net result	<u>0</u>	<u>4,677.36</u>
Receiving at June 30, 1985	32	\$ 88,230.48
D. <u>Children Receiving a Survivor Benefit</u>		
Receiving at June 30, 1984	10	\$ 12,669.60
New	0	0.00
Benefits terminated	(1)	(1,838.76)
Adjustments - net result	<u>0</u>	<u>843.84</u>
Receiving at June 30, 1985	9	\$ 11,674.68

	<u>Number</u>	<u>Annual Annuity Benefit Payable</u>
E. <u>Deferred Annuities</u>		
Deferred as of June 30, 1984	102	\$ 704,455.80
New	11	122,760.00
Began receiving	<u>(2)</u>	<u>(8,148.00)</u>
Deferred as of June 30, 1985	111	\$ 819,067.80

Average Age at Retirement of New Service Annuitants

<u>Fiscal Year Ending</u>	<u>Average Retirement Age</u>
6/30/85	62.0
All Existing Service Annuitants	67.5 years

Table 1(a)

MINNESOTA STATE RETIREMENT SYSTEM
LEGISLATORS' RETIREMENT FUND

Retired Annuitants in MPRIF

Distribution of Annual Benefit by Age Groups

Age Group	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
Under 50	0	\$ 0	\$ 0	0	\$ 0	\$ 0	0	\$ 0	\$ 0
50 - 54	0	0	0	0	0	0	0	0	0
55 - 59	0	0	0	0	0	0	0	0	0
60 - 64	29	173546	5984	0	0	0	29	173546	5984
65 - 69	27	235187	8711	0	0	0	27	235187	8711
70 - 74	21	119354	5684	0	0	0	21	119354	5684
75 - 79	16	87506	5469	0	0	0	16	87506	5469
80 - 84	11	65417	5947	0	0	0	11	65417	5947
85 +	4	28338	7085	0	0	0	4	28338	7085
Total	108	709348	6568	0	0	0	108	709348	6568

Distribution of Annual Benefit by Years Retired

Years Retired	Male			Female			All		
	No.	Total	Average	No.	Total	Average	No.	Total	Average
0	7	\$ 46157	\$6594	0	0	0	7	\$ 46157	\$6594
1	8	48381	6048	0	0	0	8	48381	6048
2	14	90358	6454	0	0	0	14	90358	6454
3	8	53980	6748	0	0	0	8	53980	6748
4	14	151692	10835	0	0	0	14	151692	10835
0 - 4	51	390568	7658	0	0	0	51	390568	7658
5 - 9	20	118389	5919	0	0	0	20	118389	5919
10 - 14	31	178153	5747	0	0	0	31	178153	5747
15 - 19	6	22238	3706	0	0	0	6	22238	3706
20 - 24	0	0	0	0	0	0	0	0	0
25 - 29	0	0	0	0	0	0	0	0	0
30 +	0	0	0	0	0	0	0	0	0
Total	108	709348	6568	0	0	0	108	709348	6568

Table 1(b)

MINNESOTA STATE RETIREMENT SYSTEM
LEGISLATORS' RETIREMENT FUND

Retired Annuitants in MPRIF

Distribution of Years Retired by Age Groups

<u>Age Group</u>	<u>Service Group</u>						<u>Total</u>
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25 & over</u>	
<u>Male</u>							
Under 40							0
40 - 44							0
45 - 49							0
50 - 54							0
55 - 59							0
60 - 64	29						29
65 - 69	19	8					27
70 - 74	2	8	11				21
75 - 79	1	4	10	1			16
80 - 84	0	0	8	3			11
85 & over	0	0	2	2			4
Total	51	20	31	6	0	0	108

Female

Under 40							0
40 - 44							0
45 - 49							0
50 - 54							0
55 - 59							0
60 - 64							0
65 - 69							0
70 - 74							0
75 - 79							0
80 - 84							0
85 & over							0
Total	0	0	0	0	0	0	0