November 29, 1966

INTRODUCTION

Name of Association Minnesota State Police Officers Retirement Association

In accordance with Chapter 359 of 1965 Minnesota Laws, an actuarial valuation as of June 30, 1966 has been made of this retirement association. The survey covers the membership of the fund as shown in the census of members and survivors of deceased members, which is included in this report. The details of the benefits under the plan, assets in the fund, income of the fund, and membership data were furnished by the Association.

This report covers the following items:

A. Benefits of the Plan and Contributions.

B. Assumptions in Actuarial Valuation.

C. Results of Valuation.

D. Discussion of Results.

E. Census of Membership and annuitants.

F. Benefits Being Paid as of June 30, 1966.

G. Certification by Actuary.

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STATE POLICE OFFICERS RETIREMENT FUND

A. BENEFITS OF PLAN AND CONTRIBUTIONS

The plan provides the following major benefits:

1. Retirement Benefit.

   a. Requirements for retirement:

      Age 58 and 10 years' allowable service credit. (Reduced early retirement benefit available at age 55 with 20 years' allowable service.)

   b. Monthly annuity when minimum requirements are met:

      2% of average monthly salary for each year of allowable service.

   c. Additional monthly annuity after minimum requirements are met:

      2% of average monthly salary for each additional year. No additional credit given for service after reaching age 60, except that participants hired before 7-1-1961 may count years of service past age 60, with a maximum of 30 years' service.

2. Disability Benefit (monthly annuity).

In Line of Duty:	55% of average monthly salary.
Not in Line of Duty:	If ten years' service completed, 2% of average monthly salary for each year of service, plus following supplemental benefits for participants disabled before age 58:

Age When Disabled	Supplementary Benefits
Under 51	$ 50
51	44
52	38
53	32
54	26
55	20
56	12
57	6

3. Widow's and Orphan's Benefit (monthly annuity).

a. In case of participant's death before retirement, the surviving spouse may choose one of the following two benefits:

(1) $75 per month for surviving dependent spouse, plus $45 per month for each dependent child, plus $20 per month to be divided equally among the dependent children. Maximum of $250 for any one family.

(2) If member had completed 20 years of allowable service, a deferred annuity payable at age 62 of 75% of the member's normal annuity, with a maximum of $200. If the member was under 58 at the time of death, the benefit is reduced by 1/2% for each month before age 58.

b. In case of death after retirement:

No survivors benefit unless participant had elected an option.

4. Other Death Benefit (lump sum): None.

5. Termination of Employment Benefit:

Employee contributions returned without interest.

6. Salary Basis for Benefits:

$7,200 per year maximum.

7. Contributions (based on $7,200 annual salary limit):

Member:	6.0% of covered salary
Employer Regular:	9.0% of covered salary
Employer Additional:	3.5% of covered salary
Total	18.5% of covered salary

B. ASSUMPTIONS IN ACTUARIAL VALUATION

1.	Mortality:	United States Life Tables, 1959-61 (White Males and White Females). These tables were used for both active and retired members, and for survivors.
2.	Disability:	The rates of disability were adapted from experience of the New York State Employees' Retirement System, graduated and extrapolated as required for this valuation.
3.	Withdrawal:	A rate of withdrawal of .030 at age 20 decreasing uniformly to zero at age 50 with no withdrawals after that age.
4.	Salary Scale:	The current salary of the members was used to project the prospective retirement benefit.
5.	Retirement Age:	The assumed average age at retirement for this fund was 62.5.
6.	Interest:	3%, compounded annually.

It is felt that these assumptions are appropriate for the valuation of this fund on a realistic basis.

C. RESULTS OF VALUATION

1. Valuation

Normal Cost of Benefits	$ 131,473
Accrued Liability	3,231,212

2. Current Deficit from Full Funding.

Accrued Liability	$3,231,212
Assets in Fund *	1,203,413
Unfunded Accrued Liability	$2,027,799

3. Annual Payment to Achieve Full Funding by 1997.

Annual Deposit to retire deficit by 1997	$ 98,435
Total Normal Cost	131,473
Total Annual Payment	$ 229,908

4. Minimum Contribution to prevent increase in Deficit.

Interest on deficit at 3%	$ 60,834
Total Normal Cost	131,473
Minimum Contribution	$ 192,307

5. *Income of Fund during fiscal year ending June 30, 1966.

Members' Contributions	$ 63,918.84
Taxes or Public Funds	130,449.38
Other	0.00
Total Contributions	$ 194,368.22
Investment Income	$ 42,873.30

6. Annual Payroll.

Covered Payroll ($7,200 limit) as of 6-30-66	$1,108,428
Total Payroll (no limit) as of 6-30-66	$1,147,020

* Data furnished by Association.

D. DISCUSSION OF RESULTS

The valuation was made by a method known as the entry age normal cost method. Under this method, the normal cost is determined based on the age at hire of each member. This normal cost is the annual deposit required (using the assumptions outlined in Section B above) to pay for the cost of each member's prospective benefits over the period from his date of hire to his date of retirement.

The elements of normal cost for this plan are:

Type of Benefit	Normal Cost
Service Retirement Benefit	$ 89,272
Disability Benefit	20,355
Withdrawal Benefit	999
Survivor's Benefit	20,847
Total Normal Cost	$131,473

This total normal cost is 11.9% of the total covered payroll as of June 30, 1966.

When a retirement plan is fully funded, the fund contains an amount equal to the accumulation (under the actuarial assumptions made) of the normal cost for each member from his date of hire to the date of the valuation. This accumulation is called the accrued liability or the required reserve.

The elements of accrued liability for this plan are:

	Type of Benefit	Accrued Liability
1.	Active Members	
	Retirement Benefit	$ 1,969,674
	Disability Benefit	131,082
	Withdrawal Benefit	6,245
	Survivor's Benefit	103,317
	Total for Active Members	$ 2,210,318
2.	Inactive Members	
	Retired	$ 618,227
	Deferred Retired	53,293
	Widows	230,762
	Orphans	20,495
	Survivor's Benefit	98,117
	Total for Inactive Members	$ 1,020,894
	Total Accrued Liability	$3,231,212

A retirement plan which is fully funded requires future contributions no larger than the sum of the normal cost of all active members to pay for the prospective benefits (if the assumptions made are realized exactly). To the extent that normal costs have not been paid in the past, a plan is not fully funded. The amount by which the plan is short of full funding is called the unfunded accrued liability of the fund. In other words, the unfunded accrued liability is the excess of the accrued liability over the actual assets of the fund.

The amount of annual contribution which would be required to pay each year's normal cost and eliminate the deficit by 1997 is the "total annual payment" shown in Section C of this report.

The deficit in the fund will increase unless at least 3% interest on the deficit is paid each year in addition to the normal cost. The sum of these two amounts should be regarded as the minimum annual contribution to the fund in order to keep the deficit at its present size. This "minimum contribution" is shown in Section C of this report.

E. CENSUS OF MEMBERSHIP AND ANNUITANTS

Following is a summary of membership and survivors of deceased members as of June 30, 1966:

Status	Number
Active Members	171
Deferred Annuitants	4
Service Retirements	32
Disabled Members	1
Widows of Deceased Members	21
Children of Deceased Members	5

F. BENEFITS BEING PAID AS OF JUNE 30, 1966.

	Number	Monthly Benefit
Service Retirements	32	$ 6,159.01
Disabled Members	1	160.00
Widows of Deceased Members	21	1,620.00
Children of Deceased Members	5	285.00
Total		$ 8,224.01
(Equivalent Total Annual Benefit		$98,688.12)

G. CERTIFICATION BY ACTUARY

Name of Association Minnesota State Police Officers Retirement Association

We hereby certify that this actuarial survey of the above named Association was made as of June 30, 1966, on the basis of accepted actuarial methods and procedures. The survey was completed in accordance with the requirements of Chapter 359 of Minnesota Laws 1965.

Franklin C. Smith

Franklin C. Smith
Associate, Society of Actuaries
GEORGE V. STENNES AND ASSOCIATES