

**State of Alaska
National Guard and
Naval Militia Retirement System**

**Actuarial Valuation Report
as of June 30, 1991**

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Highlights

This report has been prepared by William M. Mercer, Incorporated to:

1. present the results of a valuation of the Alaska National Guard and Naval Militia Retirement System as of June 30, 1991;
2. review experience under the Plan for the period July 1, 1989 to June 30, 1991;
3. determine the contribution rate for the Retirement System for fiscal years 1994 and 1995;
4. provide reporting and disclosure information for financial statements, governmental agencies, and other interested parties.

The report is divided into two sections. Section 1 describes the basis of the valuation. It summarizes the System provisions, provides information relating to the System's participants, and describes the funding methods and actuarial assumptions used in determining liabilities and costs.

Section 2 contains the results of the valuation. It includes a development of assets during the 1990 and 1991 fiscal years, the current annual costs and reporting and disclosure information.

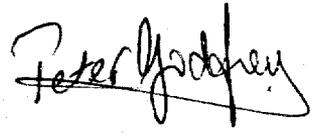
The principle results are as follows:

Funding Status as of June 30:	<u>1989</u>	<u>1991</u>
a. Valuation Assets	\$3,913,874	\$3,716,707
b. Present Value of Accrued Benefits	8,331,961	8,903,418
c. Accrued Benefit Funding Ratio, (a)/(b)	47.0%	41.7%
Recommended Contribution Rates:	<u>FY92-FY93</u>	<u>FY94-FY95</u>
a. Normal Cost	\$ 341,857	\$ 479,561
b. Past Service Cost	412,650	484,440
c. Total Annual Cost	754,507	964,001

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions, in conjunction with employee data and financial information provided to us by your office to determine a sound value for the System's liabilities. We believe that this value and the method suggested for funding it are in full compliance with the Governmental Accounting Standards Board, the Internal Revenue Code, and all applicable regulations.

Respectfully submitted,


Brian R. McGee, FSA
Principal


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Associate

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Analysis of Valuation

The actuarial assumptions and methods used to value plan liabilities this year are the same as those used in the June 30, 1989 actuarial report. The method of valuing assets was changed in FY90 from book value to market value. The Highlights section on page 1 of this Report shows that the funding ratio has deteriorated from 47.0% at June 30, 1989 to 41.7% at June 30, 1991.

The actual average annual rate of return on assets during the period was 11.9%, compared to our assumption of 9%. This caused an actuarial gain from investment return of \$223,000. However, assets actually fell during the period, as shown in Section 2.1, from \$4,003,621 to \$3,716,707. This happened in part because the Statute was amended, effective June 1, 1988, to allow members to receive a lump sum retirement benefit actuarially equivalent to the monthly benefit. Although this had no effect on the funding ratio, it did contribute to the reduction in assets, as many members chose to receive a lump sum in lieu of pension.

The main reason for the decline in the funding ratio was the additional service credited for duty outside Alaska disclosed this year in the member data by the Army Guard and Naval Militia. We received no details of any service outside Alaska for the member data in our June 30, 1989 actuarial valuation. This service is used to determine eligibility for a retirement benefit. These data changes had the effect of increasing average service (both Alaska and outside Alaska) from 3.0 years to 10.4 years for the Army Guard and from 3.4 years to 12.2 years for the Naval Militia. These statistics are shown in tabular format in Section 1.2. This generated an increase in the accrued liability which was greater than assumed, thus causing an actuarial loss.

The increase in total service disclosed for the Army Guard and Naval Militia also had the effect of increasing the Normal Cost from \$341,857 for FY92-FY93 to \$479,561 for FY94-FY95. This is because the members affected are now assumed to retire sooner and the cost of funding their benefit accruals is correspondingly higher. Together with the increase in the Past Service Cost, the Total Annual Cost increased from \$754,507 to \$964,001.

Section 1

Basis of Valuation

In this section, the basis of the valuation is presented and described. This information -- the provisions of the System and the census of participants -- is the foundation of the valuation, since these are the present facts upon which benefit payments will depend.

A summary of the System's provisions is provided in Section 1.1 and participant census information is shown in Sections 1.2 and 1.3.

The valuation is based upon the premise that the System will continue in existence, so that future events must also be considered. These future events are assumed to occur in accordance with the actuarial assumptions and concern such events as the earnings of the fund, the number of participants who will retire, die, terminate their services, their ages at such termination and their expected benefits.

The actuarial assumptions and the actuarial cost method, or funding method, which have been adopted to guide the sponsor in funding the System in a reasonable and acceptable manner, are described in Section 1.4.

1.1 Summary of System Provisions

1. Effective Date

January 1, 1973.

2. Eligibility

All members of the Alaska National Guard active on or after January 1, 1973 and all members of the Alaska Naval Militia active on or after July 1, 1980.

3. Normal Retirement

a. Eligibility -

i. Voluntary retirement or disability: after 20 years total service in the Guard, the Naval Militia or the U.S. Armed Forces or any combination of service in each component if there is at least five years of service in the Alaska Guard or Naval Militia. Credit is also granted for service to the State and former territory of Alaska as a member of the National Guard and Territorial Guard.

ii. Involuntary retirement: at any time assuming no misconduct.

b. Benefit -

\$100 per month for as many months as the member was active in the Alaska Guard or Naval Militia.

Alternatively, the member may elect to receive the benefit as a lump sum or as a monthly payment which terminates at the member's 72nd birthday. In both cases, the payment is actuarially equivalent to the benefit described above.

4. Vesting

100% after 20 years of total service in the Guard, the Naval Militia or the U.S. Armed Forces (or any combination if there is at least five years of service in the Guard or Naval Militia).

5. Death Benefits of Non-vested Active Members

Lump-sum payment equal to the benefit calculated in accordance with 3(b) above, if the member has at least five years of service in the Alaska Guard or Naval Militia.

1.1 Summary of System Provisions (continued)

6. Death Benefits of Vested Members

Lump-sum payment of remaining months' pension payable to designated beneficiary.

1.2 Participant Census Information

	<u>June 30:</u>	
	<u>1989</u>	<u>1991</u>
Active Air Guard Members		
1. Number	1,062	1,335
2. Average Age	34.21	33.91
3. Average Alaska Guard Service	5.99	5.22
4. Average Total Guard Service	5.99*	5.22*
Active Army Guard Members		
1. Number	2,581	2,437
2. Average Age	32.24	32.58
3. Average Alaska Guard Service	3.01	3.66
4. Average Total Guard Service	3.01*	10.37
Active Naval Militia Members		
1. Number	66	52
2. Average Age	39.58	38.58
3. Average Alaska Militia Service	3.44	3.10
4. Average Total Guard Service	3.44*	12.23
Retirees		
1. Number	589	503
2. Average Age	55.63	56.90
3. Average Years Remaining	11.58	12.87

* In the absence of additional information, Total Guard Service was assumed to be equal to Alaska Guard Service.

1.3(a) Distributions of Active Participants

State of Alaska National Guard - All Actives

Valuation Date 6/30/91

AGE	Total Service Group										TOTAL
	0 - 4	5 - 9	10-14	15-19	20-24	25-29	30-34	35-39	40+		
0-19	111	0	0	0	0	0	0	0	0	0	111
20-24	507	102	0	1	0	0	0	0	0	0	610
25-29	402	387	71	0	0	0	0	0	0	0	860
30-34	247	181	301	31	0	0	0	0	0	0	760
35-39	142	124	165	149	18	0	0	0	0	0	598
40-44	65	75	127	130	116	10	0	0	0	0	523
45-49	31	21	44	54	55	40	8	0	0	0	253
50-54	10	4	5	22	22	13	6	1	0	0	83
55-59	0	2	1	3	6	3	6	2	0	0	23
60-64	0	0	0	0	0	2	1	0	0	0	3
65-69	0	0	0	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0	0	0	0
80+	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1,515	896	714	390	217	68	21	3	0	0	3,824

1.3(b) Distributions of Active Participants

State of Alaska National Guard - Air Actives

Valuation Date 6/30/91

AGE	Total Service Group										TOTAL	
	0 - 4	5 - 9	10-14	15-19	20-24	25-29	30-34	35-39	40+			
0-19	31	0	0	0	0	0	0	0	0	0	0	31
20-24	152	7	0	1	0	0	0	0	0	0	0	160
25-29	240	37	1	0	0	0	0	0	0	0	0	278
30-34	204	71	22	1	0	0	0	0	0	0	0	298
35-39	118	74	37	8	4	0	0	0	0	0	0	241
40-44	64	56	51	23	9	0	0	0	0	0	0	203
45-49	31	18	17	14	4	3	1	0	0	0	0	88
50-54	10	4	2	6	2	3	2	0	0	0	0	29
55-59	0	2	1	2	0	1	1	0	0	0	0	7
60-64	0	0	0	0	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0	0	0	0	0
80+	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	850	269	131	55	19	7	4	0	0	0	0	1,335

1.3(c) Distributions of Active Participants

State of Alaska National Guard - Army Actives

Valuation Date 6/30/91

AGE	Total Service Group										TOTAL	
	0 - 4	5 - 9	10-14	15-19	20-24	25-29	30-34	35-39	40+			
0-19	80	0	0	0	0	0	0	0	0	0	0	80
20-24	352	94	0	0	0	0	0	0	0	0	0	446
25-29	161	349	69	0	0	0	0	0	0	0	0	579
30-34	41	110	273	30	0	0	0	0	0	0	0	454
35-39	17	47	124	139	14	0	0	0	0	0	0	341
40-44	0	18	75	103	105	10	0	0	0	0	0	311
45-49	0	3	26	39	45	36	6	0	0	0	0	155
50-54	0	0	3	16	19	10	4	1	0	0	0	53
55-59	0	0	0	0	6	2	5	2	0	0	0	15
60-64	0	0	0	0	0	2	1	0	0	0	0	3
65-69	0	0	0	0	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0	0	0	0	0
80+	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	651	621	570	327	189	60	16	3	0	0	2,437	

1.3(d) Distributions of Active Participants

Valuation Date 6/30/91

State of Alaska National Guard - Navy Actives

AGE	Total Service Group										TOTAL	
	0 - 4	5 - 9	10-14	15-19	20-24	25-29	30-34	35-39	40+			
0-19	0	0	0	0	0	0	0	0	0	0	0	0
20-24	3	1	0	0	0	0	0	0	0	0	0	4
25-29	1	1	1	0	0	0	0	0	0	0	0	3
30-34	2	0	6	0	0	0	0	0	0	0	0	8
35-39	7	3	4	2	0	0	0	0	0	0	0	16
40-44	1	1	1	4	2	0	0	0	0	0	0	9
45-49	0	0	1	1	6	1	1	0	0	0	0	10
50-54	0	0	0	0	1	0	0	0	0	0	0	1
55-59	0	0	0	1	0	0	0	0	0	0	0	1
60-64	0	0	0	0	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0	0	0	0	0
80+	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	14	6	13	8	9	1	1	0	0	0	0	52

1.4 Actuarial Method and Assumptions

- A. **Actuarial Method - Projected Unit Credit.** Liabilities and contributions shown in the report are computed using the Projected Unit Credit method of funding. The unfunded accrued benefit liability is amortized over 25 years.

The objective under this method is to fund each participant's benefits under the plan as they accrue. Thus, each participant's total pension is broken down into units, each associated with a year of past or future service. The principle underlying the method is that each unit is funded in the year for which it is credited. Typically, when the method is introduced there will be an initial liability for benefits credited for service prior to that date, and to the extent that this liability is not covered by assets there is an Unfunded Liability to be funded over a chosen period in accordance with an amortization schedule.

An Accrued Liability is calculated at the valuation date as the present value of benefits credited with respect to service to that date.

The Unfunded Liability at the valuation date is the excess of the Accrued Liability over the Assets of the System. The level annual payment to be made over a stipulated number of years to amortize the Unfunded Liability is the Past Service Cost.

The Normal Cost is the present value of those benefits which are expected to be credited with respect to service during the year beginning on the valuation date.

Under this method, differences between the actual experience and that assumed in the determination of costs and liabilities will emerge as adjustments in the Unfunded Liability, subject to amortization.

B. **Actuarial Assumptions -**

1. Interest 9% per year, compounded annually, net of investment expenses.
2. Mortality 1984 Unisex Pension Mortality Table.

1.4 Actuarial Method and Assumptions (continued)

3. Turnover

Turnover is assumed at 25% in the first year, and at 8% in the second; both rates are independent of age. Turnover after the second year is assumed to follow the T-3 Table published in the Pension Actuary's Handbook. Sample rates are:

<u>Age</u>	<u>Rate</u>
30	.04930
40	.04041
50	.02172

4. Disability

Disability rates under Group Long Term Disability policies, as given in the 1978 Society of Actuaries Study.

5. Retirement Age

Members are assumed to retire after 20 years of service, except:

- a. if they complete 20 years of service before age 55, it is assumed that they will work one-half of the remaining years to age 55;
- b. if they complete 20 years of service after age 60, it is assumed they will retire at age 60.

6. Member Data

In the absence of specific information to the contrary, we have assumed that members who have accrued more than five years of service with the Air Guard and have left the State have no additional service accrued with the U.S. Armed Forces.

7. Assets

The method of valuing assets was changed in FY90 from book value to market value.

Section 2

Valuation Results

This section sets forth the results of the actuarial valuation.

Section 2.1 shows the transactions of the System's fund during FY90 and FY91.

Section 2.2 shows the actuarial present values of benefits and the normal cost as of June 30, 1991.

Section 2.3 develops the total annual contribution.

2.1 Development of Valuation Assets as of June 30

	<u>FY90</u>	<u>FY91</u>
Net Assets Available for Benefits, July 1	<u>\$4,003,621*</u>	<u>\$3,788,249</u>
Adjustment for Prior Years' Market Values	N/A	89,385
Additions:		
Employer Contributions	\$ 780,913	\$ 780,913
Investment Income	<u>342,280</u>	<u>435,640</u>
	\$1,123,193	\$1,216,553
Deductions:		
Retirement Benefits	\$1,314,019	\$1,341,803
Administrative Expenses	<u>24,546</u>	<u>35,677</u>
	\$1,338,565	\$1,377,480
Net Assets Available for Benefits, June 30	<u>\$3,788,249</u>	<u>\$3,716,707</u>

* Adjusted from the assets disclosed in the actuarial valuation report as of June 30, 1989, as advised by the Division of Retirement and Benefits.

2.2 Breakdown of Present Value of Benefits

	<u>Normal Cost</u>	<u>Accrued Liability</u>
Active Members		
Retirement Benefits	\$ 399,389	\$3,778,750
Termination Benefits*	25,485	254,536
Death Benefits	52,131	281,318
Disability Benefits	<u>2,556</u>	<u>25,749</u>
Subtotal	\$ 479,561	\$4,340,353
Inactive Members		
Retirees		<u>\$4,563,065</u>
Total		<u>\$8,903,418</u>

* Members who terminate before assumed retirement age, but after completing 20 years of service.

2.3 Calculation of Total Contribution Rate

1. Accrued Liability	\$8,903,418
2. Assets	3,716,707
3. Total Unfunded Accrued Liability, (1) - (2)	5,186,711
4. Amortization Factor (25 years)	10.706612
5. Past Service Payment, (3)/(4)	484,440
6. Normal Cost	479,561
7. Total Contribution Rate, (5) + (6)	\$ 964,001

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