

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

**Actuarial Valuation Report
as of June 30, 1994**

Prepared by:

William M. Mercer, Incorporated
One Union Square, Suite 3200
600 University Street
Seattle, WA 98131-3137

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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, 1994;
2. review experience under the System for the period July 1, 1992 to June 30, 1994;
3. determine the contribution rate for the Retirement System for Fiscal Year 1997 and Fiscal Year 1998;
4. provide reporting and disclosure information for financial statements, governmental agencies, and other interested parties.

The report is divided into three sections. Section 1 contains the results of the valuation. It includes a development of assets during the 1993 and 1994 fiscal years, the current annual costs and reporting and disclosure information.

Section 2 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 3 contains additional exhibits showing historical information on the value of accumulated benefits.

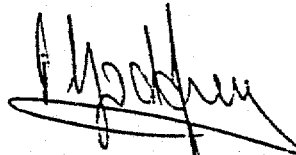
The principle results are as follows:

Funding Status as of June 30:	<u>1992</u>	<u>1994</u>
a. Valuation Assets	\$ 3,406,085	\$ 2,414,426
b. Present Value of Accumulated Benefits	11,780,032	14,031,289
c. Accumulated Benefit Funding Ratio, (a)/(b)	28.9%	17.2%
Recommended Contribution Amounts:	<u>FY96</u>	<u>FY97/98</u>
a. Normal Cost	\$ 577,733	\$ 981,905
b. Past Service Cost	782,129	1,603,014
c. Total Annual Cost	1,359,862	2,584,919

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
Managing Director


Peter L. Godfrey, FIA
Principal

JWJ/PLG/jls

November 10, 1995

Analysis of Valuation

The actuarial methods used to value plan liabilities this year are the same as those used in the June 30, 1992 actuarial report. However, due to the fact that participant data available for Army Guard members was deficient, we estimated Total Military Service and Alaska Guard Service using the assumptions detailed in our August 10, 1995 letter to the Division of Retirement and Benefits, which is included in this report as Appendix I. Also, the interest rate assumption has been reduced to 8% to more accurately reflect our best estimate of future interest rates. The Highlights section on page 1 of this Report shows that the funding ratio has decreased from 28.9% at June 30, 1992 to 17.2% at June 30, 1994.

The average annual rate of return on assets during the period was 8.5%, compared to our previous assumption of 9% resulting in an actuarial loss from investment return. Section 1.1 of the Report shows, as in recent years, that the value of assets fell during the period from \$3,406,085 to \$2,414,426. 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 payments. Section 1.1 of the Report shows that, as a result, benefit payments from the fund exceeded contribution income by \$768,866 in FY93 and by \$737,948 in FY94.

The deterioration of the funding ratio, primarily as a result of the lump sum payments, indicates that a change in the development of the contribution level is appropriate to generate a positive cash flow into the fund. Before the lump sum option was implemented, a 25-year amortization period for unfunded liabilities could be supported because retirees would receive benefits over time, allowing a longer period over which to accumulate assets needed to pay benefits. With the lump sum option, however, the full present value of benefits should be accumulated by retirement or there will be insufficient assets to pay for those members electing a lump sum. Since members can retire with 20 years of service, the amortization period should be reduced.

We suggest that the amortization period for unfunded liabilities be changed to 20 years reduced by the average military service worked to date by active members. This is basically equal to the average expected service required to achieve 20 years. Based on this year's data, average military service is about ten years, producing a ten-year amortization period. This increases the past service cost by about \$600,000, resulting in a total contribution close to \$2.5 million. Benefit payments over the past two years have averaged about \$1.6 million, so this contribution level is expected to provide positive cash flow into the fund and reverse the downward trend in funding ratio.

Section 1

Valuation Results

This section sets forth the results of the actuarial valuation.

Section 1.1 shows the transactions of the System's fund during FY93 and FY94.

Section 1.2 shows the actuarial present values of benefits and the normal cost as of June 30, 1994.

Section 1.3 develops the total contribution.

Section 1.4 provides the disclosure information required by G.A.S.B. Statement No. 5.

1.1 Development of Valuation Assets as of June 30

	FY94	FY93
Net Assets Available for Benefits, July 1	<u>\$3,072,076</u>	<u>\$3,406,085</u>
Adjustment for Prior Years' Market Values	N/A	1
Additions:		
Employer Contributions	\$ 964,001	\$ 754,507
Investment Income	<u>145,201</u>	<u>494,847</u>
	\$1,109,202	\$1,249,354
Deductions:		
Retirement Benefits	\$1,701,949	\$1,523,373
Administrative Expenses	<u>64,903</u>	<u>59,991</u>
	\$1,766,852	\$1,583,364
Net Assets Available for Benefits, June 30	<u>\$2,414,426</u>	<u>\$3,072,076</u>
Estimated Investment Return, Net of Administrative Expenses	2.97%	14.39%

1.2 Breakdown of Present Value of Benefits as of June 30, 1994

	<u>Normal Cost</u>	<u>Accrued Liability</u>
Active Members		
Retirement Benefits	\$ 732,116	\$ 7,413,189
Termination Benefits*	154,789	1,352,262
Death Benefits	80,514	521,046
Involuntary Retirement Benefits	<u>14,486</u>	<u>120,566</u>
Subtotal	\$ 981,905	\$ 9,407,063
Inactive Members		
Retirees		<u>\$ 4,624,226</u>
Total		<u>\$14,031,289</u>

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

1.3 Calculation of Total Contribution Amount - FY97 and FY98

1.	Accrued Liability	\$ 14,031,289
2.	Assets	2,414,426
3.	Total Unfunded Accrued Liability, (1) - (2)	11,616,863
4.	Amortization Factor (10 years)	7.246888
5.	Past Service Payment, (3)/(4)	1,603,014
6.	Normal Cost	981,905
7.	Total Contribution, (5) + (6)	\$ 2,584,919

1.4 Disclosure for G.A.S.B. Statement No. 5

State of Alaska
National Guard and Naval Militia Retirement System
Disclosure for G.A.S.B. Statement No. 5

Valuation Date	***** Pension Benefit Obligation *****				
	Current Retirees & Terminated	***** Current Employees ***** Contribs With Int	***** Employer Financed ***** Vested	Non-Vested	Total
June 30, 1991	\$ 4,563,065	\$ 0	\$ 1,887,309	\$ 2,453,044	\$ 8,903,418
June 30, 1992	4,932,509	0	2,888,241	3,959,282	11,780,032
June 30, 1993*	4,740,112	0	3,294,164	4,511,913	12,546,189
June 30, 1994	4,624,226	0	3,964,391	5,442,672	14,031,289

Valuation Date	***** Valuation Assets *****			***** Market Value Assets *****		
	Net Assets Available For Benefits	Unfunded PBO	Assets as Percent of PBO	Net Assets Available For Benefits	Unfunded PBO	Assets as Percent of PBO
June 30, 1991	\$ 3,716,707	\$ 5,186,711	42%	\$ 3,716,707	\$ 5,186,711	42%
June 30, 1992	3,406,085	8,373,947	29%	3,406,085	8,373,947	29%
June 30, 1993*	3,072,076	9,474,113	24%	3,072,076	9,474,113	24%
June 30, 1994	2,414,426	11,616,863	17%	2,414,426	11,616,863	17%

* Actuarial update.

Section 2

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 2.1 and participant census information is shown in Sections 2.2 and 2.3.

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 2.4.

2.1 Summary of System Provisions

(1) **Effective Date**

January 1, 1973.

(2) **Members Included**

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

(3) **Retirement**

(a) **Eligibility:**

Members are eligible for voluntary retirement after completing 20 years of satisfactory service in the Alaska National Guard, Alaska Naval Militia or U.S. Armed Forces, and the reserve of them or any combination of that service if they have at least five years of Alaska National Guard or Naval Militia service. Credit is also allowed for Territorial Guard service rendered to the former territory of Alaska.

Members are eligible for involuntary retirement at any time assuming there has been no misconduct.

(b) **Benefit:**

Eligible members may elect to receive:

- (i) monthly benefits of \$100 which are payable for a period equal to the number of months that they were active members;
- (ii) a lump sum benefit equal to the actuarial equivalent of (i); or
- (iii) monthly payments until age 72 equal to the actuarial equivalent of (i).

(4) **Vesting**

Members are 100% vested after 20 years of total service in the Alaska National Guard, Alaska Naval Militia, U.S. Armed Forces or Reserves, or any combination of that service if members have at least five years of Alaska National Guard or Naval Militia service.

(5) Death Benefits

(a) Active Members:

If the member has at least five years of active service in the Alaska National Guard or Naval Militia, the designated beneficiary will receive a lump sum benefit equal to the benefit in 3(b) above.

(b) Retired or Terminated Vested Members:

The designated beneficiary will receive a lump benefit equal to the remaining benefits payable in 3(b) above.

2.2 Participant Census Information

	<u>June 30:</u>	
	<u>1994</u>	<u>1992</u>
Active Air Guard Members		
1. Number	1,807	1,718
2. Average Age	34.71	33.53
3. Average Alaska Guard Service	6.16	5.01
4. Average Total Military Service	12.60	11.36
Active Army Guard Members		
1. Number	3,256	2,418
2. Average Age	34.93	32.33
3. Average Alaska Guard Service	5.24	5.29
4. Average Total Military Service	8.30	7.13
Active Naval Militia Members		
1. Number	118	98
2. Average Age	37.09	37.00
3. Average Alaska Militia Service	3.81	3.88
4. Average Total Military Service	11.81	11.57
Retirees		
1. Number	523	554
2. Average Age	53.17	57.17
3. Average Years Remaining	11.77	12.67

2.3(a) Distributions of Active Participants

State of Alaska National Guard - All Actives

Valuation Date 6/30/94

AGE	Total Service Group							TOTAL		
	0 - 4	5 - 9	10-14	15-19	20-24	25-29	30-34		35-39	40+
0-19	49	1	0	0	0	0	0	0	0	50
20-24	458	124	0	0	1	0	0	0	0	583
25-29	419	579	89	0	1	0	0	0	0	1,088
30-34	249	378	429	86	0	0	0	0	0	1,142
35-39	137	204	253	238	37	0	0	0	0	869
40-44	53	141	149	172	155	15	0	0	0	685
45-49	23	75	89	93	127	90	4	0	0	501
50-54	6	19	20	41	37	39	15	5	0	182
55-59	0	2	9	5	19	9	4	7	2	57
60-64	0	0	2	5	8	2	3	2	0	22
65-69	0	0	0	1	1	0	0	0	0	2
70-74	0	0	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0	0	0
TOTAL	1,394	1,523	1,040	641	386	155	26	14	2	5,181

2.3(b) Distributions of Active Participants

State of Alaska National Guard - Air Actives

Valuation Date 6/30/94

AGE	Total Service Group										TOTAL	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL		
0-19	25	1	0	0	0	0	0	0	0	0	0	26
20-24	129	47	0	0	1	0	0	0	0	0	0	177
25-29	50	215	73	0	1	0	0	0	0	0	0	339
30-34	26	97	255	72	0	0	0	0	0	0	0	450
35-39	18	39	101	154	31	0	0	0	0	0	0	343
40-44	4	13	43	76	106	14	0	0	0	0	0	256
45-49	0	3	21	18	42	62	2	0	0	0	0	148
50-54	1	0	3	6	10	21	8	3	0	0	0	52
55-59	0	0	0	0	2	5	3	2	2	0	0	14
60-64	0	0	0	0	1	0	0	1	0	0	0	2
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+	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	253	415	496	326	194	102	13	6	2	1,807		

2.3(c) Distributions of Active Participants

State of Alaska National Guard - Army Actives

Valuation Date 6/30/94

AGE	Total Service Group										TOTAL
	0 - 4	5 - 9	10-14	15-19	20-24	25-29	30-34	35-39	40+		
0-19	24	0	0	0	0	0	0	0	0	0	24
20-24	323	68	0	0	0	0	0	0	0	0	391
25-29	366	349	16	0	0	0	0	0	0	0	731
30-34	218	278	168	12	0	0	0	0	0	0	676
35-39	113	160	150	77	5	0	0	0	0	0	505
40-44	49	122	102	90	45	1	0	0	0	0	409
45-49	23	72	67	72	82	19	1	0	0	0	336
50-54	5	18	16	32	24	18	7	1	0	0	121
55-59	0	2	9	5	16	3	1	5	0	0	41
60-64	0	0	2	5	7	2	3	1	0	0	20
65-69	0	0	0	1	1	0	0	0	0	0	2
70-74	0	0	0	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1,121	1,069	530	294	180	43	12	7	0	0	3,256

2.3(d) Distributions of Active Participants

State of Alaska National Guard - Navy Actives

Valuation Date 6/30/94

AGE	Total Service Group										TOTAL
	0 - 4	5 - 9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL	
0-19	0	0	0	0	0	0	0	0	0	0	0
20-24	6	9	0	0	0	0	0	0	0	0	15
25-29	3	15	0	0	0	0	0	0	0	0	18
30-34	5	3	6	2	0	0	0	0	0	0	16
35-39	6	5	2	7	1	0	0	0	0	0	21
40-44	0	6	4	6	4	0	0	0	0	0	20
45-49	0	0	1	3	3	9	1	0	0	0	17
50-54	0	1	1	3	3	0	0	1	0	0	9
55-59	0	0	0	0	1	1	0	0	0	0	2
60-64	0	0	0	0	0	0	0	0	0	0	0
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+	<u>0</u>	<u>0</u>	<u>0</u>	<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	20	39	14	21	12	10	1	1	0	0	118

2.4 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 20 years less the average total military service of active members.

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 8% per year, compounded annually, net of investment expenses.
2. Mortality 1984 Unisex Pension Mortality Table.

2.4 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 total military service, except:
- if they complete 20 years of total military service before age 55, it is assumed that they will work one-half of the remaining years to age 55;
 - if they complete 20 years of total military service after age 60, it is assumed they will retire at age 60.
6. Assets
- Market value.

Section 3

Other Historical Information

Section 3.1 shows the Statement of Actuarial Present Value of Accumulated Plan Benefits.

3.1 Statement of Actuarial Present Value of Accumulated Plan Benefits

Actuarial Present Value of Accumulated Plan Benefits
at June 30, 1994

Retired participants and beneficiaries of deceased participants	\$ 4,624,226
Active participants - Vested	3,964,391
Active participants - Non-vested	5,442,672
Total Actuarial Present Value of Accumulated Plan Benefits	\$14,031,289

Notes to the Statement of Accumulated Plan Benefits.

1. The actuarial present value of accumulated plan benefits presented in this Statement was determined using the following assumptions:
 - a. Future salary was not considered.
 - b. Future service was considered only to the extent that it would permit active plan participants to become eligible for benefits attributable to service rendered prior to the date of determination.
 - c. Regular valuation assumptions were used as to mortality, withdrawal, retirement ages, disability, and investment return.
2. Accumulated employee contributions with interest total \$0.00.
3. As with many of the comparative plan financial relationships otherwise available, an examination, over periods of time, of the relationship between the *value of accumulated plan benefits* and the *value of plan assets* may give an indication of the progress being made toward the funding of plan benefits. However, in the context of a "going concern" environment, a point in time comparison of these two values *should not be construed to be indicative of the expected ability of the plan to pay future benefits when due*. Furthermore, *that comparison is not valid for assessing a plan termination situation*. Consideration of inflation in the assumed return on plan assets while ignoring inflation's effect on future benefit levels *produces a significant understatement of the value of accumulated plan benefits* when applying going concern concepts. *The accumulated plan benefit value presented in this statement should not be confused with information presented elsewhere regarding funding requirements.*

3.1 Statement of Actuarial Present Value of Accumulated Plan Benefits (continued)

4. The change in the Present Value of Accumulated Plan Benefits during the prior fiscal year is as follows:

A. Actuarial Present Value of Accumulated Plan Benefits at June 30, 1993	\$ 12,546,189
B. Increase (Decrease) Attributable to:	
i. Additional Benefits Accumulated, including Actuarial Experience	777,904
ii. Increase due to Decrease in the Discount Period	1,052,569
iii. Benefits Paid to Participants	(1,701,949)
iv. Material System Changes	0
v. Change in Assumptions	<u>1,356,576</u>
C. Actuarial Present Value of Accumulated Plan Benefits at June 30, 1994	\$ 14,031,289

August 10, 1995

NGNMRS
1995 ~~Corr~~
Val

Mr. Robert F. Stalnaker
Director of Retirement & Benefits
State of Alaska
Department of Administration
Division of Retirement & Benefits
P.O. Box 110203
Juneau, AK 99811-0203

Re: **NGNMRS Fiscal Year 94 Valuation Data**

Dear Bob:

The purpose of this letter is to identify some assumptions which would be necessary to adopt for the June 30, 1994 National Guard actuarial valuation as a result of the data deficiencies summarized by Bill Church in his July 19th memo to Sue Bump. The following describes the assumptions in the order in which each data inconsistency appears in the memo.

Air Guard

- For the 9 Air Guard participants whose Alaska Guard service dates have changed from last year, we will use the earlier dates.
- For the 27 Air Guard participants whose Alaska Guard service dates precede their base pay entry dates, we will assume the Alaska Guard service dates are correct.
- For the 9 Air Guard participants who are retired, despite being shown as active on the 1994 listing, we will value their accrued benefits assuming they are immediately payable.

The above assumptions may not be necessary if these inconsistencies are resolved, as expected, by mid-August.

Army Guard

- With regard to the absence on the listing of Army Guard participants with Social Security numbers below 100-00-0000, we will add 100 active Army Guard participants to the active data with ages, Alaska Guard Service and Total Military Service equal to the averages of the active Army Guard cohort as a whole.

Mr. Robert F. Stalnaker
August 10, 1995
Page 2

- We will add one year of Total Military Service to the 1993 data for those 1,465 active Army Guard members whose Total Military Service had not increased.
- 1,945 active Army Guard members showed no Alaska Guard service in the 1994 report. For those members who were included in the 1993 actuarial valuation data, we will add one year of Alaska Guard Service to that used in 1993. For those members who were not included in the 1993 valuation, we will assume they entered the Guard for the first time mid-way during the fiscal year and will therefore have six months of Alaska Guard Service for the 1994 valuation.

As you are aware, Bob, National Guard actuarial valuations currently assume for Army Guard members a constant ratio of Alaska Guard to Total Guard service as Alaska Guard Service is not available. Given the need now to identify an additional set of assumptions as a result of the data deficiencies summarized by Bill Church, we are proposing conservative assumptions to increase the likelihood that the contribution levels calculated will be sufficient to fund the true liabilities.

Bob, when you have had a chance to review these assumptions, please call me to discuss if you have any comments or questions.

Kind regards,



Peter L. Godfrey, FIA
Principal

PLG\BRM\kml
AKA_W.95\STAL0810.PLG

c: Mr. Brian R. McGee

Appendix I