

**William M. Mercer Meidinger Hansen, Incorporated**

**STATE OF ALASKA  
NATIONAL GUARD AND  
NAVAL MILITIA RETIREMENT SYSTEM**

**Actuarial Valuation**

**as of**

**June 30, 1989**

TABLE OF CONTENTS

	<u>Page</u>
HIGHLIGHTS . . . . .	1
ANALYSIS OF THE VALUATION. . . . .	3
SECTION 1 - BASIS OF VALUATION . . . . .	4
1.1 - SUMMARY OF SYSTEM PROVISIONS . . . . .	5
1.2 - PARTICIPANT CENSUS INFORMATION . . . . .	6
1.3(a) - DISTRIBUTIONS OF ACTIVE PARTICIPANTS - ALL. .	8
1.3(b) - DISTRIBUTIONS OF ACTIVE PARTICIPANTS - AIR. .	9
1.3(c) - DISTRIBUTIONS OF ACTIVE PARTICIPANTS - ARMY .	10
1.3(d) - DISTRIBUTIONS OF ACTIVE PARTICIPANTS - NAVY .	11
1.4 - ACTUARIAL METHOD AND ASSUMPTIONS . . . . .	12
SECTION 2 - VALUATION RESULTS. . . . .	14
2.1 - DEVELOPMENT OF VALUATION ASSETS AS OF JUNE 30 . . . . .	15
2.2 - BREAKDOWN OF PRESENT VALUE OF BENEFITS . . . . .	16
2.3 - CALCULATION OF TOTAL CONTRIBUTION RATE . . . . .	17

HIGHLIGHTS

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

- (1) present the results of a valuation of the Alaska National Guard and Naval Militia Retirement System as of June 30, 1989;
- (2) review experience under the Plan for the period July 1, 1984 to June 30, 1989;
- (3) determine the contribution rate for the Retirement System for fiscal years 1992 and 1993;
- (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 1988 and 1989 fiscal years, the current annual costs and reporting and disclosure information.

The principle results are as follows:

Funding Status as of June 30:

	<u>1984</u>	<u>1989</u>
(a) Valuation Assets	\$2,016,990	\$3,913,874
(b) Present Value of Accrued Benefits	7,761,389	8,331,961
(c) Accrued Benefit Funding Ratio, (a) / (b)	26.0%	47.0%

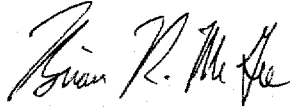
Recommended Contribution Rates:

	<u>FY87-FY88</u>	<u>FY92-FY93</u>
(a) Normal Cost	\$ 542,950	\$ 341,857
(b) Past Service Cost	498,267	412,650
(c) Total Annual Cost	1,041,217	754,507

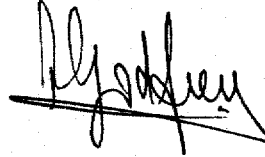
The value of assets and liabilities and the costs shown above as of June 30, 1984 are taken from the valuation report prepared as of that date. As discussed in the following section, the valuation assumptions and funding method were subsequently revised.

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 and the Department of Military and Veterans' Affairs in Anchorage, 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



Peter L. Godfrey, FIA, ASA  
Consulting Actuary

PLG/BRM/js

November 10, 1989

ANALYSIS OF VALUATION

The actuarial method and assumptions have been revised from those used in the valuation as of June 30, 1984. The actuarial method has been changed to the Projected Unit Credit Method from the Attained Age Normal Method and the valuation rate of interest has been increased from 8% to 9%. All other assumptions are identical to those used in the valuation as of June 30, 1984.

As reported in Bob Richardson's letter dated October 8, 1986, the results of the June 30, 1984 valuation using the new funding method and assumptions were as follows:

(a)	Normal Cost . . . . .	\$ 305,563
(b)	Past Service Cost . . . . .	475,350
(c)	Total Annual Cost . . . . .	780,913
(d)	Present Value of Accrued Benefits . . . . .	7,106,373
(e)	Funding Ratio . . . . .	28.4%

Thus, a comparison of results at June 30, 1984 and at June 30, 1989 using the same valuation assumptions and funding method shows that the funding ratio has improved during the five-year period from 28.4% to 47.0%. This improvement is due to an average annual increase in the assets over the period of approximately 14% and an average annual increase in the present value of accrued benefits over the period of only 3.2%.

As will be noted in Section 1.2 of the Report, the main reason for the actuarial gain during the period was the significant reduction in the average Guard Service of the Army Guard members from 5.38 years at June 30, 1984 to 3.01 years at June 30, 1989. This effect was only partially offset by small increases in the average age and average Guard Service of the Air Guard and the introduction of the Naval Militia Members at a higher average age than for the active members of the System as a whole. The overall effect of this experience is a reduction in the recommended annual cost of \$26,406 to \$754,507.

In summary, the funding of the System is proceeding in a satisfactory manner.

## 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.

SECTION 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, 1969 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 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 Guard or Naval Militia.

(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 Guard or Naval Militia.

(6) Death Benefits of Vested Members

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

SECTION 1.2

PARTICIPANT CENSUS INFORMATION

As certain items of information relating to member data were unavailable, we have had to make some additional assumptions to calculate the System's liabilities.

- (1) The Air and Army Guards and the Naval Militia were each able to provide, for each member, only the period of service with their respective employer. For example, the Air Guard had no details of any service accrued by any of its members with the Army Guard or the Naval Militia. We have assumed, therefore, that no members have any credited service with more than one employer.
- (2) The Department of Military and Veterans' Affairs keeps no records of members who accrue five or more years of service with the Guard or Naval Militia and then leave the State. If such members accrue additional service outside the State by serving with the U.S. Armed Forces, they could become entitled to a benefit from the System. We have assumed that no such additional liability exists.



SECTION 1.2 (continued)

	<u>June 30:</u>	
	<u>1984</u>	<u>1989</u>
<u>Active Air Guard Members</u>		
(1) Number	715	1,062
(2) Average Age	33.92	34.21
(3) Average Guard Service	5.09	5.99
<u>Active Army Guard Members</u>		
(1) Number	2,434	2,581
(2) Average Age	31.61	32.24
(3) Average Guard Service	5.38	3.01
<u>Active Naval Militia Members</u>		
(1) Number	0	66
(2) Average Age	0	39.58
(3) Average Militia Service	0	3.44
<u>Retirees</u>		
(1) Number	356	589
(2) Average Age	53.70	55.63
(3) Average Years Remaining	14.84	11.58

## SECTION 1.3(a)

DISTRIBUTIONS OF ACTIVE PARTICIPANTS - ALL

STATE OF ALASKA NATIONAL GUARD - ALL ACTIVES

AGE	VALUATION DATE										TOTAL	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+			
0-19	70	0	0	0	0	0	0	0	0	0	0	70
20-24	682	3	0	0	0	0	0	0	0	0	0	685
25-29	787	74	4	0	0	0	0	0	0	0	0	865
30-34	491	157	42	4	0	0	0	0	0	0	0	694
35-39	333	123	97	18	3	0	0	0	0	0	0	574
40-44	223	86	85	42	22	0	0	0	0	0	0	458
45-49	90	25	35	23	32	8	0	0	0	0	0	213
50-54	47	7	7	15	9	9	6	0	0	0	0	103
55-59	17	5	6	4	1	3	3	0	0	0	0	39
60-64	2	1	2	1	0	0	0	0	0	0	0	6
65-69	2	0	0	0	0	0	0	0	0	0	0	2
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	2744	481	278	107	67	20	9	3	0	0	0	3709

SECTION 1.3(b)

DISTRIBUTIONS OF ACTIVE PARTICIPANTS - AIR

STATE OF ALASKA NATIONAL GUARD - AIR ACTIVES VALUATION DATE 6/30/1989

S E R V I C E G R O U P

AGE	0- 4	5- 9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	27	0	0	0	0	0	0	0	0	27
20-24	109	3	0	0	0	0	0	0	0	112
25-29	180	27	4	0	0	0	0	0	0	211
30-34	148	53	20	1	0	0	0	0	0	222
35-39	99	63	49	12	2	0	0	0	0	225
40-44	56	44	40	25	7	0	0	0	0	172
45-49	12	7	17	15	4	4	0	0	0	59
50-54	3	4	2	5	4	5	2	3	0	28
55-59	0	2	1	0	0	1	2	0	0	6
60-64	0	0	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0	0	0
80+	0	0	0	0	0	0	0	0	0	0
TOTAL	634	203	133	58	17	10	4	3	0	1062

SECTION 1.3(c)

DISTRIBUTIONS OF ACTIVE PARTICIPANTS - ARMY

STATE OF ALASKA NATIONAL GUARD - ARMY ACTIVES VALUATION DATE 6/30/1989

S E R V I C E G R O U P

AGE	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19	43	0	0	0	0	0	0	0	0	43
20-24	568	0	0	0	0	0	0	0	0	568
25-29	605	47	0	0	0	0	0	0	0	652
30-34	330	104	22	3	0	0	0	0	0	459
35-39	222	60	48	6	1	0	0	0	0	337
40-44	151	42	45	17	15	0	0	0	0	270
45-49	67	18	18	8	28	4	0	0	0	143
50-54	38	3	5	10	5	4	4	0	0	69
55-59	16	3	5	4	1	2	1	0	0	32
60-64	2	1	2	1	0	0	0	0	0	6
65-69	2	0	0	0	0	0	0	0	0	2
70-74	0	0	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0	0	0
80+	0	0	0	0	0	0	0	0	0	0
TOTAL	2044	278	145	49	50	10	5	0	0	2581

SECTION 1.3(d)

DISTRIBUTIONS OF ACTIVE PARTICIPANTS - NAVY

STATE OF ALASKA NATIONAL GUARD - NAVY ACTIVES		VALUATION DATE 6/30/1989								
AGE	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
20-24	5	0	0	0	0	0	0	0	0	5
25-29	2	0	0	0	0	0	0	0	0	2
30-34	13	0	0	0	0	0	0	0	0	13
35-39	12	0	0	0	0	0	0	0	0	12
40-44	16	0	0	0	0	0	0	0	0	16
45-49	11	0	0	0	0	0	0	0	0	11
50-54	6	0	0	0	0	0	0	0	0	6
55-59	1	0	0	0	0	0	0	0	0	1
60-64	0	0	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0	0	0
80+	0	0	0	0	0	0	0	0	0	0
TOTAL	66	0	0	0	0	0	0	0	0	66

## SECTION 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.                          |

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. Samples rates are:

<u>Age</u>	<u>Rate</u>
30	.04829
40	.03859
50	.01702
60	.01835

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:

- (1) 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;
- (2) 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 (and as discussed in Section 1.2 of this Report), we have assumed that:

- (1) Members of any one employer of the System (Air Guard, Army Guard or Naval Militia) have no credited service accrued with any other employer.
- (2) Members who have accrued more than five years of service with the Guard or Naval Militia and have left the State have no additional service accrued with the U.S. Armed Forces.

## 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 FY88 and FY89.

Section 2.2 shows the actuarial present values of benefits and the normal cost as of June 30, 1989.

Section 2.3 develops the total annual contribution.



SECTION 2.1

DEVELOPMENT OF VALUATION ASSETS AS OF JUNE 30

	<u>1988</u>	<u>1989</u>
Net Assets Available for Benefits, July 1	<u>\$3,958,043</u>	<u>\$4,053,403</u>
Additions:		
Employer Contributions	\$ 702,400	\$ 780,913
Indebtedness Interest	6,386	8,755
Investment Income	<u>179,262</u>	<u>347,069</u>
	<u>\$ 888,048</u>	<u>\$1,136,737</u>
Deductions:		
Retirement Benefits	\$ 771,800	\$1,252,643
Administrative Expenses	<u>20,888</u>	<u>23,623</u>
	<u>\$ 792,688</u>	<u>\$1,276,266</u>
Net Assets Available for Benefits, June 30	<u>\$4,053,403</u> =====	<u>\$3,913,874</u> =====

SECTION 2.2

BREAKDOWN OF PRESENT VALUE OF BENEFITS

	<u>Normal Cost</u>	<u>Accrued Liability</u>
<u>Active Members</u>		
Retirement Benefits	\$255,981	\$2,909,127
Termination Benefits*	30,647	351,869
Death Benefits	51,725	303,835
Disability Benefits	<u>3,504</u>	<u>38,982</u>
Subtotal	\$341,857	\$3,603,813
 <u>Inactive Members</u>		
Retirees		<u>\$4,728,148</u>
Total		\$8,331,961

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

SECTION 2.3

CALCULATION OF TOTAL CONTRIBUTION RATE

(1) Accrued Liability	\$8,331,961
(2) Assets	3,913,874
(3) Total Unfunded Accrued Liability, (1) - (2)	4,418,087
(4) Amortization Factor (25 years)	10.706612
(5) Past Service Payment, (3) / (4)	412,650
(6) Normal Cost	341,857
(7) Total Contribution Rate, (5) + (6)	\$ 754,507