

*Paul B. Bennett*

STATE OF ALASKA  
TEACHERS' RETIREMENT SYSTEM

Actuarial Valuation  
as of  
June 30, 1979

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**Benefit Services / Consulting Actuaries**

SUMMARY

In accordance with your request, we have completed a valuation of the Alaska Teachers' Retirement System as of June 30, 1979. The principal results of the actuarial valuation are presented in this summary and analysis; the two sections which follow are meant to provide the necessary supporting details.

Section 1 presents the fundamental information on which the valuation was based. Included is a summary of plan provisions, information about plan participants, and disclosure of the actuarial method and assumptions used.

Section 2 presents the detailed actuarial valuation results. Its subsections present a step-by-step derivation of the recommended contribution. In addition, information requested by the auditors of the Retirement System is presented.

The purposes of an actuarial valuation are:

1. To examine the status of funding of the Plan, and
2. To determine the contribution rates for the State for each school district in the System.

The most significant results of the valuation are as follows:

	<u>1978</u>	<u>1979</u>
(1) Status of Funding as of June 30		
(a) Valuation Assets	\$219,225,684	\$266,006,982
(b) Present Value of Accrued Benefits	327,659,821	370,196,776
(c) Accrued Benefit Funding Ratio	66.9%	71.9%
(2) Contributions For Fiscal Year		
(a) Contribution Rate Before Medical Insurance	14.46%	14.26%
(b) Rate For Medical Insurance	.40%	1.32%
(c) Total Contribution Rate	14.86%	15.58%

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions, in conjunction with employee data provided to us, to determine a sound value for the Plan liabilities. I certify that, to the best of my knowledge and belief, the attached statements are true and correct.

Respectfully submitted,

*Robert F. Richardson*

Robert F. Richardson, MAAA  
Vice President

RFR:jn

October 25, 1979

## ANALYSIS OF THE VALUATION

### Actuarial Method and Assumptions

This actuarial valuation report is based upon the actuarial methods and assumptions adopted at the Spring Board Meeting of the State of Alaska Teachers' Retirement System in March 1978 except for one important change. For this report, we have adopted a new method for funding the post-retirement medical insurance which is provided under TRS.

All retirees under TRS continue the same medical insurance coverage as provided for active employees. This medical insurance coverage is provided by Blue Cross of Washington and Alaska. Monthly premiums of \$64.70 for each retiree are taken from the Retired Life Reserve and transferred to Blue Cross to pay for this coverage.

Formerly, the post-retirement medical insurance was funded with a contribution of .40% of pay. In prior years, this amount was slightly more than sufficient to provide the "pay-as-you-go" cost of retirees' medical insurance. For several reasons, the cost of providing medical insurance to retirees has increased substantially. Some of these reasons are:

- (1) The number of retirees has increased dramatically in the last few years, from 793 on June 30, 1976 to 1,136 as of June 30, 1979.
- (2) The average age of retirees has been decreasing slightly. Due to coverage provided by Medicare, costs for providing

medical benefits to retirees who are over age 65 is significantly less than the cost for providing medical insurance to retirees under age 65. Therefore, as the proportion of retirees under age 65 has been increasing, medical costs have also been increasing.

- (3) Medical costs have been increasing over the last several years. As we are all aware, medical costs have increased even more than inflation in the entire economy.

For the above reasons, the .40% of pay factor which was formerly sufficient to provide pay-as-you-go medical costs is no longer sufficient. Perhaps most importantly, it is not prudent to fund this type of benefit on a pay-as-you-go basis. The post-retirement medical benefits which are provided under TRS should be funded utilizing the same methodology as other retirement benefits. In other words, assets should be accumulated during the working years in order to provide benefits in the retirement years.

Therefore, using the same actuarial method as adopted for funding all other benefits under TRS, we have developed a level percentage of pay cost to fund post-retirement medical benefits. As with other benefit costs, some of this cost represents a "normal cost" portion while the remainder represents a 30-year funding of past service liabilities. For example, all employees who are vested and all present retirees have a non-forfeitable right to post-retirement medical insurance provided under TRS. This unfunded liability is being

amortized with level payments over 30 years in the same fashion as other unfunded accrued liabilities of the plan. In similar fashion, the cost for post-retirement medical insurance for those who are not yet vested has been taken into consideration in the total "normal cost" calculation.

In summary, this change in methodology from pay-as-you-go funding to full actuarial funding puts the post-retirement medical insurance provisions on the same footing as all other benefits under TRS. However, it should be pointed out that even this proposed contribution rate for medical insurance will not be sufficient if medical care costs continue to increase at a rate faster than salary increases. We realize that health care costs for several decades have been increasing faster than salaries. However, can health care costs, which now amount to about 9% of the gross national product in the United States, continue to increase to a much higher level? Furthermore, will national health insurance shift the responsibility for funding this benefit? In consideration of all of the above, we believe that the method adopted in this actuarial valuation report is the most realistic one to be used for funding post-retirement medical insurance under TRS.

#### Actuarial Experience During 1978/79

As can be seen in the prior summary, the accrued benefit funding ratio increased from 66.9% to 71.9%. This increase occurred even with the change in methodology in funding post-retirement medical

insurance. Utilizing the former methodology, which ignored the accrued liability to provide this medical insurance, the funding ratio on June 30, 1979 would have been approximately 75%. Therefore, utilizing consistent methodology, TRS would have shown a very large increase in this accrued benefit funding ratio. In other words, actuarial gains have been much greater than actuarial losses during the 1978/79 plan year.

As can be seen in Section 1.2 of this report, the number of active members decreased by 85 teachers during the last year. While average age and average service have increased only slightly over the past three years, average annual salaries continue to increase. In fact, the increase in average annual salary was 6.4% during the year which was slightly higher than our assumed salary increase assumption. Consequently, actuarial losses from salary increases were small during 1978/79. On the other hand, the investment performance of your plan was significantly greater than the actuarial interest assumption of 6%. Therefore, there were large gains from investment sources which more than offset the actuarial losses from salaries.

As the prior summary shows, the total contribution rate actually decreased from 14.46% to 14.26% if the cost of medical insurance is ignored. However, the change in funding methodology for medical insurance resulted in a large increase in the total contribution rate from 14.86% to 15.58%.

### Retirement Statistics

In this report we have included, for the first time, several statistics pertaining to retirements for the last several years. Section 1.3 includes retirement statistics for plan years ending on June 30, 1974 through 1978. These retirement statistics are further broken down as to type of retirement; for example: normal, early, disability or survivor benefits. While this section contains a wealth of material, a few points are especially worth mentioning.

- (1) The average age at normal retirement, which had been decreasing steadily from 60.61 in 1976 to 55.92 in 1978, headed upward to 57.06 in 1979. This trend has been seen in other retirement systems around the country. It is believed that the very high level of inflation during the last two years has caused people to put off retirement. So doing not only provides them with a full salary to meet their immediate expenses, but also increases the ultimate retirement benefit.
- (2) The average monthly benefit for retirements under all categories has increased significantly over the last five years. As Section 1.3 shows, the average retirement benefit for all retirees increased from \$811.54 in 1975 to \$1,123.32 in 1979. This is a 38.4% increase over four years, or a compounded average annual increase of 8.5%.

### Conclusions

It is our conclusion that the State of Alaska Teachers' Retirement

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System is being funded in a satisfactory manner. The adoption of a full funding method for post-retirement medical insurance rather than using pay-as-you-go funding for this benefit was a prudent decision.

SECTION 1

THE BASIS OF THE VALUATION

The foundation of an actuarial valuation is the information and assumptions used in preparing it. In this section, the salient Plan provisions, employee census data, and actuarial methods and assumptions used in preparing the valuation are outlined.

1.1 BRIEF OUTLINE OF THE  
ALASKA TEACHERS' RETIREMENT SYSTEM

(1) Plan

The Teachers' Retirement System of Alaska is a joint contributory retirement system to provide benefits for teachers of the State.

(2) Effective Date

June 30, 1955, as amended through July 1978.

(3) Administration of Plan

The Commissioner of Administration is the administrator of the System; the Alaska Teachers' Retirement Board makes recommendations to the Commissioner of Administration; and the Commissioner of Revenue invests the funds.

(4) Membership

Membership in the Alaska Teachers' Retirement System is compulsory for all eligible certified teachers, certified school nurses, principals, supervisors, superintendents employed on a full-time or part-time basis in public schools in Alaska, the Commissioner of Education, supervisors with the Department of Education, and all full-time resident professional and administrative personnel of the University of Alaska.

(5) Credited Service

A year of membership service is defined to be the same as a school term which is currently a minimum of 172 days, and fractional service credit is on a daily rate basis. Credit is granted for all Alaskan public school service. Credit is granted for all accumulated, unused sick leave days.

(6) Contributions by Teachers

Effective July 1, 1970, each teacher shall contribute 7% of base salary accrued from July 1 to the following June 30.

(7) Voluntary Supplemental Contributions

If a teacher wishes to make his spouse or minor children eligible for a spouse's pension and/or survivor's pension allowance, he may elect to make supplemental contributions of an additional 1% of his base salary commencing not later than 90 days after entry in the System, marriage, or the birth or adoption of a child, or during any open enrollment period authorized by the Board.

(8) Arrearage Contributions

Up to 10 years of public or non-public teaching service, or service by a certificated person in a position requiring certification, in an accredited school not covered under the Teachers' Retirement System, or service in an institution of higher learning not under the control of the Board of Regents of the University of Alaska, is credited for retirement purposes.

After July 1, 1978, the full actuarial cost of providing benefits for this service will be born by the teacher. In addition, teaching services in Alaska B.I.A. schools may be used to increase total outside and Alaska B.I.A. service to 15 years before July 1, 1978. After this date, Alaska B.I.A. service is limited to 5 years.

A maximum of 5 years of military service after December 31, 1939 may be included as outside service. No fractional credit is

granted for outside service. Fractional credit is granted for Alaska B.I.A. service.

(9) Retroactive Contributions

If a teacher was not subject to the provisions of the Retirement Act and, at a later date became subject to them due to legislative changes of the eligibility requirements, the teacher may elect to receive credit for his creditable service prior to membership by submitting to the Retirement Fund an amount equal to the contributions that would have been made if the teacher had been a member of the System for any year's service after June 30, 1955, plus interest thereon. Retroactive contributions are not required for creditable membership service before June 30, 1955.

(10) Employers' and State's Contributions

The employer and the State each contribute an amount equal to one-half of the amount required in addition to member contributions to finance the benefits of the System.

(11) Rate of Interest

The amount deposited in a member account will be credited with interest at the rate established for a school year at the end of such school year. Effective July 1, 1973, the interest rate was increased to 4 1/2%.

(12) Withdrawal of Mandatory Contributions

If a member terminates teaching services in Alaska, mandatory contributions may be withdrawn. A withdrawing teacher will receive total mandatory contributions plus the interest credited.

(13) Reinstatement of Contributions

If Mandatory Contributions are withdrawn and a member subsequently resumes teaching in Alaska, the member will be indebted to the Teachers' Retirement Fund in the amount of the previous contributions to the System including any interest paid. The reinstatement indebtedness bears compound interest at the rate prescribed by regulation to the date of repayment or the date of retirement, whichever occurs first.

(14) Minimum Service Requirements

- (1) 8 years of membership service, or
- (2) 15 years of creditable service, the last five of which have been membership service; (after July 1, 1975 a new member needs 8 years of membership service); or
- (3) 25 years of creditable service, the last 5 of which are membership service; or
- (4) 20 years of membership service.

(15) Normal Retirement Eligibility

A teacher may retire and receive full benefits

- (1) Upon attaining age 55 and meeting the minimum service requirements; or
- (2) At any age after 25 years of creditable service, the last 5 of which are membership service; or
- (3) At any age after 20 years of membership service.

A retired teacher who has been receiving a disability retirement salary shall be eligible for a service retirement salary upon or after attaining age 55.

(16) Computation of Average Base Salary

A teacher's average base salary is determined by averaging the teacher's highest base salary which he received for any three out of the last 10 years of membership service.

(17) Normal Retirement Benefit

The normal retirement benefit is 2% of the teacher's Average Base Salary multiplied by the total number of years of creditable service.

(18) Early Retirement Benefit

A teacher is eligible for early retirement benefits if he has completed the minimum service requirements and has attained the age of 50. If the teacher does not apply for retirement benefits to start prior to his 55th birthday, he is eligible to receive the normal retirement benefit. If the retiring teacher elects to have payments of the benefit begin prior to his 55th birthday, the annual annuity is equal to his normal retirement benefit based on his average base salary and creditable service to his retirement date, reduced by one-half of 1% per month for each month by which his age at retirement is less than 55 years.

(19) Deferred Vested Benefit

A teacher is eligible for a deferred vested benefit if he

- (1) terminates his membership after completing eight years of membership service, and
- (2) he does not withdraw his retirement contributions.

Payment of this benefit is deferred until the first of the month following the teacher's 55th birthday or the first of the month in which the application for benefit is filed, whichever is later.

(20) Indebtedness Owing At Retirement

If on the date of making application for retirement, a teacher has not paid the full amount of his indebtedness including interest to the Retirement Fund, one of the following options may be chosen:

Option 1: The retirement benefit can be withheld until the amount withheld is equal to the outstanding indebtedness.

Option 2: A reduced annuity, completed by deducting 10% of the outstanding indebtedness at the time of retirement from the annual retirement benefit, can be paid to the teacher.

(21) Re-employment of a Retired Teacher

If a retired teacher is re-employed as a full-time teacher, his retirement salary will be suspended during the period of employment.

Retirement Contributions are made at the option of such teacher and an additional retirement benefit may be accrued.

(22) Disability Retirement Benefits

A disability retirement annuity may be paid if a teacher has become permanently disabled and has at least five years of membership service.

The benefit will be equal to 50% of the disabled teacher's base salary immediately prior to becoming disabled. This benefit will be increased by 10% of the teacher's base salary for each minor child up to a maximum of four minor children until the child ceases to be a minor.

When the disabled teacher attains age 55, the disability salary will automatically terminate. A normal retirement salary will be computed as if the teacher had been in membership service during the period of disability, and a service retirement will be granted. The base salary used will be the same used in computing the disability benefit.

(23) Cost-of-Living Allowance

A retired teacher whose permanent residence is in Alaska subsequent to retirement and/or whose absence is of a temporary nature, not to exceed 60 days, for travel or vacation purposes is entitled to receive a cost-of-living allowance, not to exceed 10% of his retirement benefit in addition to his retirement benefit.

(24) Post-Retirement Adjustment

This adjustment is promulgated by regulation and payable to a retired teacher when the administrator determines that the cost of living has increased and the financial condition of the fund permits payment of the adjustment. The amount of increase shall not exceed 4% compounded for each year on retirement.

(25) Exemption from Taxation and Process

Teachers' retirement benefits are exempt from Alaska state and municipal taxes, are not subject to execution, attachment, garnishment or other process, but must be reported to the Internal Revenue Service for federal tax purposes.

(26) Lump Sum Death Benefit

Upon death of a member who has made no supplemental contributions

or who made supplemental contributions for less than one year, a lump-sum benefit shall be paid to the designated beneficiary. The lump-sum benefit is the teacher's accumulated mandatory contributions with interest thereon. If the teacher is in active service at the time of death, an additional death benefit equal to \$1,000 plus \$100 for each year of completed service plus \$500 if the teacher is survived by one or more minor children is also payable. In no case shall the additional benefit exceed \$3,000.

If the teacher had received a retirement benefit prior to his death, payment shall be his accumulated contributions, plus interest, minus all benefits paid.

If a member failed to designate a beneficiary, or if no designated beneficiary survives the member, payment shall be made:

- (1) to his surviving spouse or if there is no surviving spouse,
- (2) to his surviving children in equal parts, or if there are none surviving,
- (3) to his surviving parents in equal parts, or, if there are none surviving,
- (4) to his estate.

(27) Survivor's Allowance

If a teacher dies while in service or while receiving a service or disability retirement benefit, is survived by one or more

minor children and has made supplemental contributions for at least one year before his death, his surviving spouse is entitled to the survivor's allowance. The amount of the benefit is 35% of the teacher's base salary immediately prior to his death or becoming disabled for his spouse and 10% for each minor child up to a maximum of four.

(28) Spouse's Pension

If a teacher has made supplemental contributions for at least one year and dies while in membership service, or while receiving a disability benefit, or if a teacher has made supplemental contributions for at least 5 years and dies while on retirement or in deferred retirement status, the surviving spouse is entitled to receive the spouse's pension. The amount of the benefit is 50% of the service retirement salary that the deceased teacher was receiving or would have received. The spouse's pension commences on the spouse's 55th birthday or date of total and permanent disability. The payment ceases when the spouse dies or remarries.

1.2 MISCELLANEOUS INFORMATION

AS OF JUNE 30

	<u>Active Members</u>			
	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
(1) Number of Active Members	6,209	7,024	7,255	7,170
(2) Average Age	37.42	37.20	37.33	37.69
(3) Average Service to Date	8.95	8.70	8.84	8.97
(4) Average Annual Salary	\$21,267	\$22,887	\$25,193	\$26,807

	<u>Retirees and Beneficiaries</u>			
(1) Number of Retirees and Beneficiaries	793	891	1,072	1,136
(2) Average Age	63.55	63.39	62.71	62.95
(3) Average Monthly Benefit Base	\$ 720	\$ 749	\$ 787	\$ 807
C.O.L.A.	\$ 40	\$ 42	\$ 46	\$ 46
P.R.P.A.	\$ 20	\$ 70	\$ 141	\$ 129
Total	\$ 780	\$ 861	\$ 974	\$ 982

1.3 RETIREMENT STATISTICS

	----- Retirements in Year Ending June 30 -----				
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
<u>Normal:</u>					
Number	90	106	110	77	108
Average Age	60.13	60.61	59.24	55.92	57.06
Ave. Benefit	\$794.71	\$917.85	\$931.55	\$1,072.87	\$1,110.18
 <u>Early:</u>					
Number	6	40	54	20	31
Average Age	51.64	51.87	51.71	50.55	50.48
Ave. Benefit	\$943.82	\$987.35	\$937.83	\$1,171.76	\$1,268.30
 <u>Disability:</u>					
Number	5	10	9	8	9
Average Age	49.64	46.33	47.41	46.56	48.03
Average Benefit	\$1,006.97	\$1,012.53	\$1,674.55	\$1,289.71	\$1,546.41
 <u>Survivor:</u>					
Number	3	1	5	5	12
Average Age	57.49	35.71	55.59	48.45	49.85
Ave. Benefit	\$625.89	\$1,172.44	\$577.78	\$1,110.36	\$549.63
 <u>Total:</u>					
Number	104	157	178	110	160
Average Age	59.06	57.31	56.26	53.92	54.74
Ave. Benefit	\$811.54	\$943.21	\$961.09	\$1,108.32	\$1,123.32

----- FARNINGS BY AGE-----			----- ANNUAL EARNINGS BY SERVICE-----		
AGE GROUP	NUMBER OF PEOPLE	TOTAL ANNUAL EARNINGS	SERVICE GROUP	NUMBER OF PEOPLE	TOTAL ANNUAL EARNINGS
0-19	0	0.	0	277	5929462.
20-24	210	3391049.	1	719	13529380.
25-29	1616	33377290.	2	444	8935596.
30-34	1601	37515048.	3	483	10552319.
35-39	1405	37269696.	4	469	10293273.
40-44	966	27233922.	0-4	2392	49240076.
45-49	664	19824766.	5-9	1889	46202248.
50-54	439	13595636.	10-14	1525	42689048.
55-59	244	7364593.	15-19	855	25830142.
60-64	85	2502683.	20-24	411	12876261.
65-69	18	529470.	25-29	147	4801674.
70-74	5	118081.	30-34	30	918836.
75-79	2	54000.	35-39	4	128606.
80+	0	0.	40+	2	89388.
TOTAL	7255	182776240.	TOTAL	7255	182776288.

SERVICE GROUPS BY AGE GROUPS

AGE GROUP	S	E	R	V	I	C	E	G	R	O	U	P	40 +	TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 +	0	0	0	0	0
0-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	210	0	0	0	0	0	0	0	0	0	0	0	0	210
25-29	1262	353	1	0	0	0	0	0	0	0	0	0	0	1616
30-34	445	826	328	2	0	0	0	0	0	0	0	0	0	1601
35-39	228	387	601	188	1	0	0	0	0	0	0	0	0	1405
40-44	107	155	278	330	96	0	0	0	0	0	0	0	0	966
45-49	61	85	163	155	160	40	0	0	0	0	0	0	0	664
50-54	39	49	90	109	96	49	7	0	0	0	0	0	0	439
55-59	25	29	49	52	39	35	13	2	0	0	0	0	0	244
60-64	7	5	12	17	13	19	9	1	2	0	0	0	0	85
65-69	4	0	2	2	5	3	1	1	0	0	0	0	0	18
70-74	3	0	0	0	1	1	0	0	0	0	0	0	0	5
75-79	1	0	1	0	0	0	0	0	0	0	0	0	0	2
80+	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2392	1889	1525	855	411	147	30	4	2	0	0	0	0	7255

## 1.4 ACTUARIAL METHOD AND ASSUMPTIONS

### Valuation of Liabilities

- A. Actuarial Method - Attained Age Normal, also known as Aggregate Method with Supplemental Liability. The unfunded accrued benefit liability is amortized over 30 years.
- B. Actuarial Assumptions -
1. Interest 6% per year, compounded annually, net of investment expenses.
  2. Salary Scale 6% per year until age 39 and 5% per year for ages 40 and up.
  3. Mortality 1971 Group Annuity Mortality Table.
  4. Turnover Based upon the 1976-77 actual total turnover experience. (See Table 1).
  5. Disability Incidence rates in accordance with Table 2. Post-disability mortality in accordance with rates published by the Pension Benefit Guaranty Corporation to reflect mortality of those receiving disability benefits under Social Security.
  6. Retirement Age The average of age 60 and the earliest age for which unreduced retirement benefits will be available.
  7. Spouse's Age Wives are assumed to be four years younger than husbands.
  8. Contribution Refunds 85% of those terminating before age 50 with 8 to 12 years of service will leave their contributions and thereby retain their deferred vested benefit. All others who terminate after becoming vested are assumed to keep their contributions in the System.
  9. C.O.L.A. 49% of those receiving retirement benefits will be eligible for C.O.L.A.
  10. Sick Leave 4.7 days of sick leave will be available for each year of service.
  11. Expenses No loading for expenses.

Valuation of Assets

Based upon the three-year average ratio between market and book values of the System's assets.

Valuation of Medical Benefits

Medical benefits for retirees are provided by the payment of premiums from the trust fund. A pre-65 cost and lower post-65 cost (due to Medicare) were assumed such that the total rate for all retirees equals the present premium rate. These medical premiums are then funded with the same actuarial method as other retirement benefits.

TABLE 1  
 TEACHERS' RETIREMENT SYSTEM  
 STATE OF ALASKA  
 EMPLOYEE TURNOVER RATES

<u>Age</u>	<u>Male</u>	<u>Female</u>
20	.0600	.0600
21	.0582	.0607
22	.0563	.0614
23	.0537	.0623
24	.0511	.0669
25	.0485	.0715
26	.0456	.0761
27	.0432	.0809
28	.0448	.0888
29	.0464	.0967
30	.0480	.1046
31	.0496	.1125
32	.0510	.1204
33	.0562	.1200
34	.0614	.1195
35	.0666	.1190
36	.0718	.1195
37	.0769	.1181
38	.0791	.1109
39	.0813	.1037
40	.0835	.0965
41	.0857	.0893
42	.0880	.0823
43	.0882	.0800
44	.0884	.0777
45	.0886	.0754
46	.0888	.0731
47	.0889	.0714
48	.0890	.0707
49	.0880	.0700
50 and up	.0870	.0700

TABLE 2  
TEACHERS' RETIREMENT SYSTEM  
STATE OF ALASKA  
DISABILITY RATES  
ANNUAL RATES PER 1,000 EMPLOYEES

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	.70	45	1.62
21	.71	46	1.76
22	.72	47	1.91
23	.73	48	2.07
24	.74	49	2.23
25	.75	50	2.40
26	.76	51	2.60
27	.78	52	2.86
28	.80	53	3.18
29	.82	54	3.56
30	.84	55	4.00
31	.86	56	4.59
32	.88	57	5.34
33	.90	58	6.10
34	.93	59	7.20
35	.96	60	8.43
36	.99	61	9.75
37	1.03	62	11.30
38	1.07	63	13.05
39	1.11	64	14.90
40	1.15		
41	1.20		
42	1.27		
43	1.36		
44	1.48		

SECTION 2  
DETAILED VALUATION RESULTS

This section presents in detail the results of the actuarial valuation that were outlined in the Summary.

2.1 DISTRIBUTION OF ASSETS

AS OF JUNE 30, 1979

	<u>Book Value</u>	<u>Market Value</u>
Cash	\$ 60,882	\$ 60,882
Repurchase Agreements	2,473,202	2,473,202
Short Term Issues	54,887,940	54,887,940
Intermediate/Long Term Issues:		
Government	64,399,973	64,116,174
Other	23,148,905	23,148,905
Common Stock	13,340,752	17,021,946
Loans & Mortgages	103,726,174	103,726,174
Alaska Savings Certificates	<u>400,000</u>	<u>400,000</u>
Total Assets	\$262,437,828	\$265,835,222

2.2 DEVELOPMENT OF VALUATION ASSETS

AS OF JUNE 30, 1979

	<u>Market Value</u>	<u>Book Value</u>	<u>Ratio (M/B)</u>
(1) June 30, 1979	\$265,835,222	\$262,437,828	1.0129
(2) June 30, 1978	212,888,370	215,370,551	.9885
(3) June 30, 1977	184,323,044	177,345,469	1.0393
(4) Average Ratio			1.0136
(5) Book Value at June 30, 1979			\$262,437,828
(6) Valuation Assets at June 30, 1979 (4) x (5)			\$266,006,982

2.3 BREAKDOWN OF PRESENT VALUE  
OF BENEFITS

	<u>Present Value of Accrued Benefit</u>	<u>Present Value of Fully Projected Benefit</u>
Retirement Benefits	\$113,277,676	\$289,878,218
Termination Benefits	68,240,984	185,976,707
Death Benefits	2,624,582	5,941,187
Disability Benefits	7,180,601	11,556,413
Medical Benefits	8,235,649	20,589,122
Liability for Inactive Members	<u>21,605,417</u>	<u>21,605,417</u>
 Total Present Value of Benefits for all Non-Retired Members	 <u>\$221,164,909</u>	 <u>\$535,547,064</u>
 Present Value of Benefits for Retirees	 \$149,031,867	 \$149,031,867
 Total Present Value of Benefits	 <u>\$370,196,776</u>	 <u>\$684,578,931</u>

2.4 DEVELOPMENT OF NORMAL COST RATE  
FOR FISCAL YEAR 1980-81

(1) Present Value of Fully Projected Benefits	\$684,578,931
(2) Present Value of Accrued Benefits	370,196,776
(3) Present Value of Future Member Contributions	108,332,256
(4) Present Value of Future Supplemental Contributions	4,408,649
(5) Present Value of Arrearage Indebtedness	13,690,588
(6) Present Value of Future Consolidated Employer Contributions (1) - (2) - (3) - (4) - (5)	187,950,662
(7) Present Value of Future Salaries	1,584,351.948
(8) Normal Cost Rate (6) ÷ (7)	11.86%

2.5 CALCULATION OF TOTAL CONTRIBUTION RATE  
FOR FISCAL YEAR 1980-81

(1) Present Value of Accrued Benefits	\$370,196,776
(2) Valuation Assets	266,006,982
(3) Total Unfunded Liability	104,189,794
(4) 30-Year Amortization Factor	14.590721
(5) Past Service Payment	7,140,826
(6) Total Salaries	192,205,744
(7) Past Service Rate	3.72%
(8) Normal Cost Rate	11.86%
(9) Total Contribution Rate	15.58%