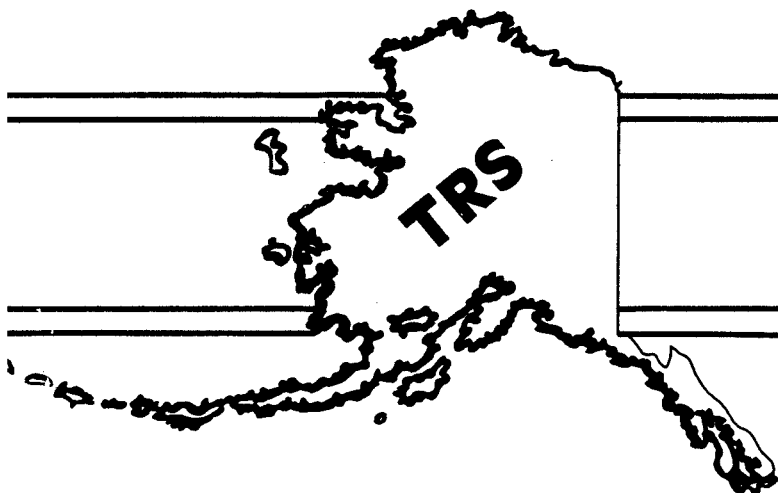


*Salley*



STATE OF ALASKA  
TEACHERS' RETIREMENT SYSTEM

ACTUARIAL VALUATION REPORT  
AS OF JUNE 30, 1988

Prepared by  
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INCORPORATED

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### HIGHLIGHTS

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

- (1) present the results of a valuation of the Alaska Teachers' Retirement System as of June 30, 1988;
- (2) review experience under the plan for the year ended June 30, 1988;
- (3) determine the contribution rates for the State and for each school district in the system;
- (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 plan provisions, provides information relating to the plan 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 the experience of the plan during the 1987-88 plan year, the current annual costs, and reporting and disclosure information.

The principle results are as follows:

Funding Status as of June 30:	<u>1987</u>	<u>1988</u>
(a) Valuation Assets*	\$1,225,009	\$1,331,905
(b) Accrued Liability*	1,210,909	1,347,859
(c) Funding Ratio, (a) / (b)	101.2%	98.8%
Contributions for Fiscal Year	<u>1990**</u>	<u>1991</u>
(a) Normal Cost	9.36%	11.86%
(b) Past Service Rate	1.80%	.41%
(c) Total Contribution Rate	11.16%	12.27%

\* In thousands.

\*\* Same as 1989 rates.

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions, in conjunction with employee data provided to us by the plan sponsor and financial information provided by the audited report from Peat, Marwick, Main and Company, to determine a sound value for the plan 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,



Robert F. Richardson, ASA, EA, MAAA  
Principal



Brian R. McGee, FSA  
Principal

RFR/BRM/js

March 28, 1989

## ANALYSIS OF THE VALUATION

→ The results of this year's actuarial valuation for the TRS show a modest decrease in the funding ratio, and a very large increase in the employer contribution rate. These changes can be explained by the four major deviations of actual experience in FY88 from our actuarial assumptions. Overall, there was an actuarial loss during the year of \$75,074,000, or 5.6% of the accrued liability. *(Exp. worse than hoped for)*

### Retiree Medical Insurance

*Retiree medical  
RIP - no Medicare offset under 65*

Last year there was an actuarial loss of \$37,182,000 due to the large increase in retiree medical premiums. More importantly, from a cost point of view, this increase resulted in a 3.12% increase in the employer contribution rate.

An analysis of retiree medical claims for the past two years shows a decrease in hospital admissions and hospital days per retiree per year, for both under and over age 65. However, total hospital expenses per retiree during these two years increased 18% for retirees over age 65, and 36% for those under age 65.

For many years, we have commented on the substantial increases in retiree medical insurance premiums. The following table summarizes the monthly premium, per benefit recipient, since retiree medical became a benefit of the TRS.

<u>Fiscal Year</u>	<u>Monthly Premium Per Retiree For Health Coverage</u>	<u>Annual Percentage Increase</u>	<u>Average Annual Increase Since 1978</u>
1977	\$ 34.75	--	--
1978	57.64	66%	--
1979	69.10	20%	20%
1980	64.70	- 6%	6%
1981	96.34	49%	19%
1982	96.34	0%	14%
1983	115.61	20%	15%
1984	156.07	35%	18%
1985	191.85	24%	19%
1986	168.25	-12%	14%
1987	165.00	- 2%	12%
1988	140.25	-15%	9%
1989	211.22	51%	13%
1990	252.83	20%	13%

In FY86, the upward spiral of retiree health insurance premiums reversed. At the time it was felt that some of this decrease was due to the cost containment measures which were established and some was due to a correction from the prior year's increase. This downward trend continued in 1987 and 1988. Unfortunately, medical premiums for retirees have once again reversed with an 80% increase in the last two years.

Certainly some of this increase is due to the influx of under-age-65 retirees from the Retirement Incentive Program with their correspondingly higher medical costs. This is because Medicare offsets much of the medical cost after a retiree reaches age 65. During the next few years, the percentage of retirees over age 65 should increase, relieving some of the upward pressure on retiree medical premiums.

The chart on page 7 shows medical claims for pre-65 retirees increasing faster than claims for post-65 retirees. This may reflect the impact of DRG reimbursement holding down claims for retirees over age 65 and eligible for Medicare, and a "cost shift" toward retirees under age 65 and not eligible for Medicare.

#### Investment Performance

The effect of "Black Monday" on stock market prices was still felt by the equity portion of the TRS portfolio by the end of the fiscal year. Based upon the fund's market value, the investment return during the year was only 1.87%. Valuation assets are based upon a three-year smoothing of actuarial values. Nevertheless, investment return based upon valuation assets was only 6.33% during the year. The net result was an actuarial loss from investment sources of \$32,561,000, which resulted in a .84% increase in the employer contribution rate.

#### Retirement Incentive Program

Primarily due to the Retirement Incentive Program, the number of retirees in the Teachers' Retirement System increased more than 40% during the last two years. Almost 10% of all active teachers took advantage of the RIP and retired earlier with larger benefits. The net increase in accrued liabilities during the last year due to the Retirement Incentive Program was slightly more than \$19,000,000.

#### Salary Increases

Somewhat offsetting the above-mentioned actuarial losses was an actuarial gain from salary increases which were less than anticipated. The actuarial gain from these less-than-anticipated salary increases was \$25,755,000, which resulted in a .67% decrease in the employer contribution rate.

### Volatility of Contribution Rates

For the last few years, the employer contribution rate to the Teachers' Retirement System has been quite volatile. This is primarily due to economic changes which are beyond the State's control. While the medical costs have been volatile, over the long run, of greatest importance is the investment performance of the Teachers' Retirement Fund. When the system was not fully funded, and when the percentage of equities was substantially less, investment performance was more stable. Even with the three-year smoothing approach used to dampen wide swings in market values from year to year, the investment performance realized by the Plan is subject to substantial variation. For the last few years, excellent investment performance contributed to a sharp decrease in employer contribution rates. This year, a lower return contributed to the increase. After the three-year smoothing, the Plan's investment performance was 2.67% below our actuarial assumption. This is not a large deviation! Nevertheless, an actuarial loss of this magnitude, by itself, led to an increase in employer contribution rates of .84% of TRS payroll.

The following table summarizes the sources of increase in the employer contribution rate:

(1) Last year's employer contribution rate . . . . .	8.19%
(2) Increase due to retiree medical insurance. . . . .	3.12%
(3) Increase due to RIP. . . . .	.50%
(4) Increase due to less-than-anticipated investment performance. . . . .	.84%
(5) Decrease due to lower salary raises. . . . .	- .67%
(6) Impact of all other factors. . . . .	<u>.29%</u>
(7) Employer contribution rate this year . . . . .	12.27%

### Recommended Change

It is our recommendation that the employer contribution rate be based upon a three-year average of the rates developed in the actuarial reports. This slight change in actuarial methodology will dampen the inevitable swings in employer contribution rates from year to year. The following table summarizes the effect of this recommendation on contribution rates over the last six years:

<u>Valuation Date</u>	<u>Employer Contribution Rate</u>	<u>Three-Year Average Rate</u>	<u>For Fiscal Year</u>
6-30-83	17.36%		FY86
6-30-84	17.36%		FY87
6-30-85	13.28%*	16.00%	FY88
6-30-86	11.16%	13.93%	FY89
6-30-87	8.19%	10.87%	FY90
6-30-88	12.27%	10.54%	FY91

\* Note: A change in actuarial assumptions on 6-30-85 lowered the contribution rate from 16.68% to 13.28%.

#### Additional Exhibits

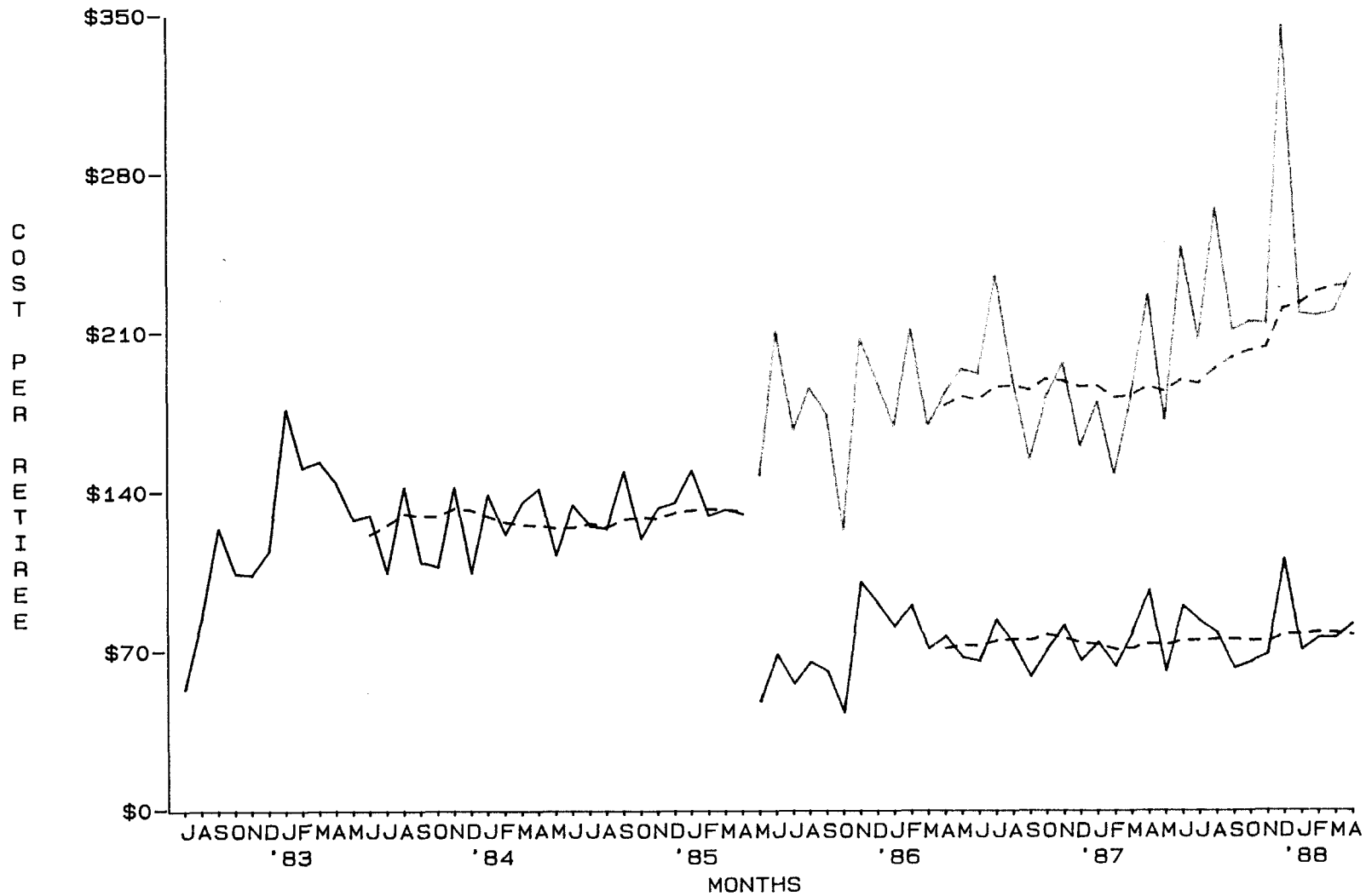
In this year's actuarial valuation report we have included several new graphs and exhibits. They show employee and retiree data, GASB No. 5 (Governmental Accounting Standards Board) information, and cash flow projections. These exhibits will be regular features of our reports in the coming years.

#### Summary

With a net actuarial loss of over \$75,000,000 and a substantial increase in retiree medical insurance premiums, FY88 was not a good year financially for the TRS. The funding ratio decreased slightly and the employer contribution rate showed a large increase. Nevertheless, the Plan is very well funded by all standards, as indicated by the 98.8% funding ratio.



STATE OF ALASKA  
RETIREE MEDICAL COVERAGE  
PLOT OF COST PER RETIREE EXPERIENCE



\_\_\_\_\_ INDIVIDUAL MONTH COSTS PER RETIREE UNDER AGE 65 AND AGE 65 AND OVER  
 ----- ROLLING 12-MONTH AVERAGE COSTS PER RETIREE UNDER AGE 65 AND AGE 65 AND OVER  
 \_\_\_\_\_ INDIVIDUAL MONTH COSTS PER RETIREE UNDER AGE 65  
 ----- ROLLING 12-MONTH AVERAGE COSTS PER RETIREE UNDER AGE 65  
 \_\_\_\_\_ INDIVIDUAL MONTHS COSTS PER RETIREE AGE 65 AND OVER  
 ----- ROLLING 12-MONTH AVERAGE COSTS PER RETIREE AGE 65 AND OVER

Section 1  
BASIS OF THE VALUATION

In this section, the basis of the valuation is presented and described. This information--the provisions of the plan 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 plan provisions is provided in Section 1.1 and participant census information is shown in Section 1.2.

The valuation is based upon the premise that the plan 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 plan in a reasonable and acceptable manner, are described in Section 1.3.

Section 1.1

SUMMARY 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 June 30, 1988.

(3) Administration of Plan

The Commissioner of Administration appoints 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 each certificated elementary or secondary teacher, certificated school nurse, and other certificated personnel who are employed on a full-time or part-time basis in positions which require teaching certificates as a condition of employment in the public schools of Alaska. Membership is also compulsory for the Commissioner of Education, supervisors within the Department of Education, and all full-time or part-time teachers of the University of Alaska and administrative personnel occupying full-time positions at the University of Alaska which require academic standings and are approved by the Administrator. Certain State legislators may also elect to be eligible for membership.

(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 accrued, unused sick leave as reflected by the records of the last employer once a member has been on retirement an equal amount of time, meets eligibility requirements and has completed an application for the credit.

(6) Contributions by Teachers

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

(7) Voluntary Supplemental Contributions

If a teacher who first joined the system before July 1, 1982 wishes to make his or her spouse or minor children eligible for a spouse's pension and/or survivor's allowance, the teacher may elect to make supplemental contributions of an additional 1% of base salary commencing not later than 90 days after marriage, or the birth or adoption of a child, or upon re-entry into the system provided there was at least a twelve (12) month break in service.

(8) Arrearage Contributions

Up to ten 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, may be credited for retirement purposes. For teachers first hired after July 1, 1978, the full actuarial cost of providing benefits for the service will be borne by the teacher. No fractional credit is granted for outside service.

Service as a teacher, a certificated person employed in a full-time position requiring a teaching certificate, or a professional educator, in an Alaska B.I.A. school or school system may be credited for retirement purposes. Contributions are required for service which is claimed. There is no limit on the amount of Alaska B.I.A. service that may be claimed. Fractional credit is granted for Alaska B.I.A. service and military service.

A maximum of five years of military service may be credited for retirement purposes; however, the maximum outside and military service credit may not exceed ten years, unless entry into the military is immediately preceded by TRS service and following discharge is continued by TRS service within one year. Contributions are required for service which is claimed. Fractional credit is granted for military 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 to the eligibility requirements, the teacher may elect to receive credit for 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 July 1, 1955.

(10) Employers' and State's Contributions

The employer contributes an 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 June 30, 1974, 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. Upon request, a terminated teacher will receive a refund of the balance of the member contribution account.

(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 total refund. 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) Normal Retirement Eligibility

Meeting the requirement of either (a) or (b) below:

(a) Upon attaining age 55 and meeting one of the following service requirements:

- (1) Eight years of fully-paid membership service, or
- (2) 15 years of fully-paid creditable service, the last five of which have been membership service; (after July 1, 1975 a new member needs eight years of fully-paid membership service); or
- (3) Five years of fully-paid membership service and three years of fully-paid Alaska B.I.A. service;

or;

(b) At any age after meeting one of the following service requirements:

- (1) 25 years of fully-paid creditable service, the last five of which are membership service; or
- (2) 20 years of fully-paid membership service; or
- (3) 20 years of fully-paid combined membership service and Alaska B.I.A. service, the last five of which are membership service.

- (4) 20 part-time years of fully-paid membership service (at least one-half year each).

A retired teacher who has been receiving a disability retirement benefit shall be eligible for a service retirement benefit upon satisfying normal retirement eligibility.

(15) Early Retirement Eligibility

Upon attaining age 50 and meeting one of the following service requirements:

- (1) Eight years of fully-paid membership service, or
- (2) 15 years of fully-paid creditable service, the last five of which have been membership service; (after July 1, 1975 a new member needs eight years of fully-paid membership service); or
- (3) Five years of fully-paid membership service and three years of fully-paid Alaska B.I.A. service during which the teacher received compensation for at least two-thirds of each school year.

(16) Computation of Average Base Salary

A teacher's average base salary is determined by averaging the teacher's highest base salary which the teacher received for any three 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 who meets the service requirements for normal retirement, but not the age requirements, may elect to have reduced payments commence as early as age 50. The reduced Early Retirement Benefit is equal to the actuarial equivalent of the normal retirement benefit.

(19) Indebtedness Owed At Retirement

If on the date of appointment to retirement, a teacher has not paid the full amount of his indebtedness including interest to the Retirement Fund, the retirement benefit will be reduced for life by an amount equal to the actuarial equivalent of the outstanding indebtedness at the time of retirement.

(20) Re-employment of a Retired Teacher

If a retired teacher is reemployed in a position covered under the System, the retirement benefit will be suspended during the period of reemployment.

During such period of reemployment, retirement contributions are mandatory.

(21) Disability Retirement Benefits

A disability retirement benefit may be paid if a teacher has become permanently disabled before 55 and has at least five years of fully-paid 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 40%.

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

(22) Cost-of-Living Allowance

An eligible retired teacher who remains in Alaska is entitled to receive an additional cost-of-living allowance equal to 10% of the base retirement benefit.

(23) Post-Retirement Pension Adjustment

When the administrator determines that the cost of living has increased and that the financial condition of the retirement fund permits, all retirement benefits may be increased. The amount of the increase shall be not more than the lesser of 4% compounded for each year of retirement, or the cost-of-living increase since the date of retirement, reduced by prior Post-Retirement Pension Adjustments.

(24) Lump Sum Non-Occupational and Occupational Death Benefit

Upon a non-occupational death of a member who has made no supplemental contributions or who made supplemental contributions for less than one year and has completed less than one year of membership service, a lump-sum benefit shall be paid to the designated beneficiary. The lump-sum benefit is the teacher's accumulated member contribution account. If the teacher is in active service at the time of death after completing at least one year of membership service but before becoming a vested member, an additional death benefit equal to \$1,000 plus \$100 for each year of membership service (the total not to exceed \$3,000), plus \$500 if the teacher is survived by one or more minor children is also payable.

Upon an occupational death of a member who has not made the required supplemental contributions, a monthly survivor's pension equal to 40% of the base salary at the time of death or disability, if earlier, may be payable. At the member's Normal Retirement Date, the benefit converts to a Normal Retirement benefit based on pay at date of disability or death and credited service, including period from date of disability or death to Normal Retirement Date.

If the teacher had received a retirement benefit prior to his death, payment shall be his accumulated contributions, plus interest, minus all benefits paid. However, if the teacher elected one of the joint and survivor options (50%, 66-2/3% or 75%) at retirement, an eligible spouse would receive a continuing monthly benefit for the rest of his or her life.

(25) Survivor's Allowance

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 five years and dies while on retirement or in deferred retirement status, and is survived by one or more minor children, his surviving spouse and/or minor children are 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 40%. The survivor's allowance commences the month following the member's death. When there is no longer an eligible minor child, this allowance ceases and a Spouse's Pension becomes payable.



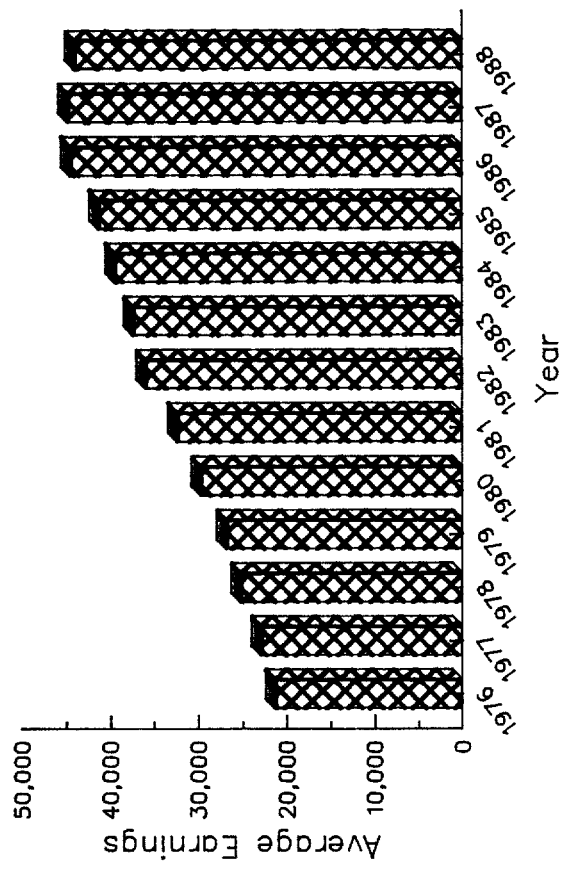
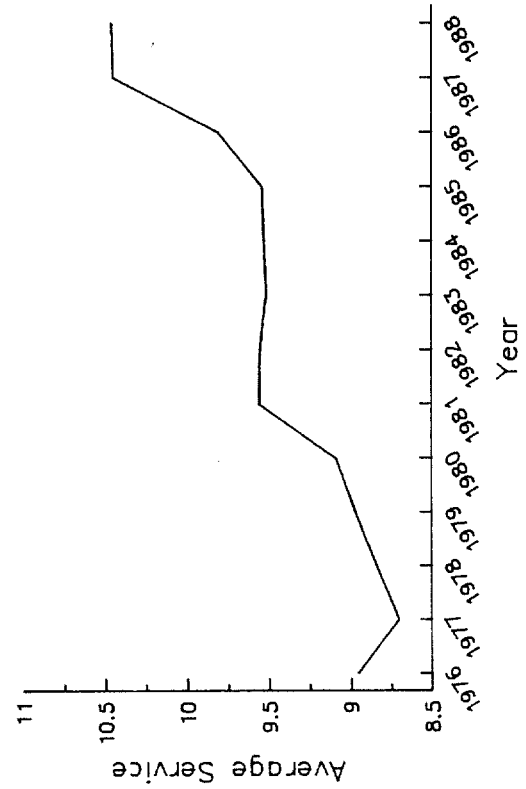
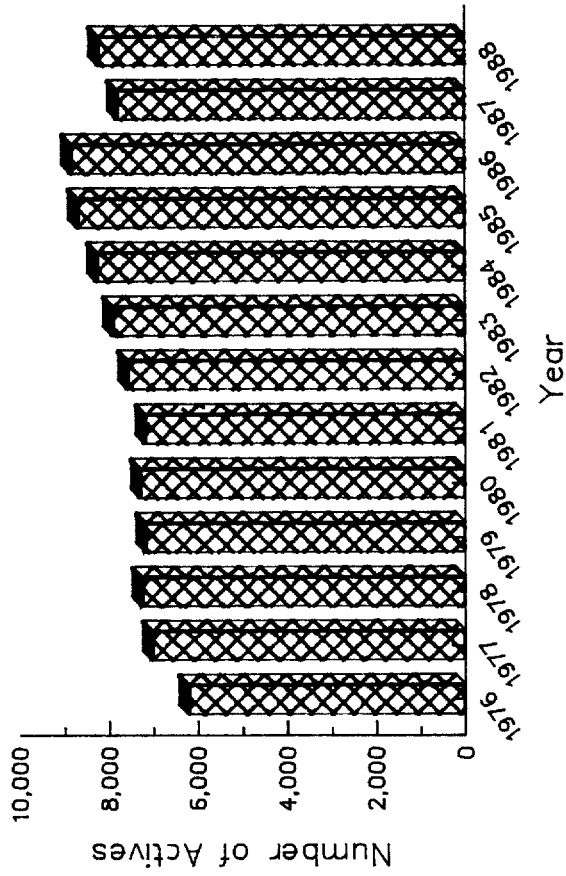
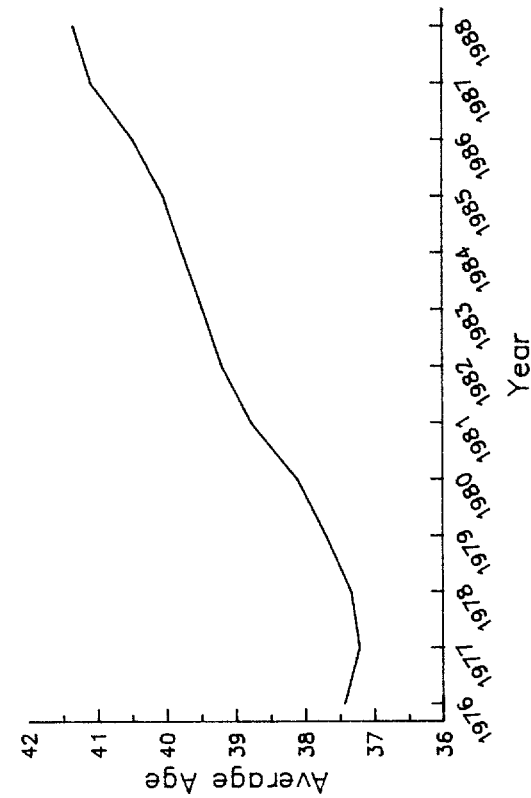
(26) Spouse's Pension

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 five 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 benefit that the deceased teacher was receiving or would have received. The Spouse's Pension commences the month following the member's death. The payment ceases when the spouse dies.

Section 1.2(a)  
PARTICIPANT CENSUS INFORMATION AS OF JUNE 30

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
<u>Active Members</u>					
(1) Number	8,259	8,684	8,824	7,797	8,218
(2) Number Vested			4,233	4,196	4,053
(3) Average Age	39.76	40.04	40.48	41.09	41.34
(4) Average Credited Service	9.53	9.54	9.81	10.45	10.46
(5) Average Annual Salary	\$39,416	\$41,238	\$44,440	\$44,710	\$43,966
<u>Retirees and Beneficiaries</u>					
(1) Number	1,764	2,022	2,098	2,376	2,972
(2) Average Age	63.17	62.75	63.18	62.83	61.41
(3) Average Monthly Benefit					
Base	\$ 1,060	\$ 1,176	\$ 1,205	\$ 1,304	\$ 1,460
C.O.L.A.	\$ 68	\$ 79	\$ 79	\$ 87	\$ 102
P.R.P.A.	\$ 188	\$ 279	\$ 258	\$ 268	\$ 208
Total	\$ 1,316	\$ 1,534	\$ 1,542	\$ 1,659	\$ 1,770
<u>Vested Terminations</u>					
(1) Number	509	335	481	777	408
(2) Average Age	46.75	45.49	47.74	47.92	44.26
(3) Average Monthly Benefit	\$ 944	\$ 850	\$ 1,178	\$ 1,391	\$ 847
<u>Not Vested Terminations With Account Balances</u>					
(1) Number	914	1,093	869	1,529	938
(2) Average Account Balance	\$ 5,573	\$ 6,649	\$ 8,356	\$ 9,421	\$ 9,773

# STATE OF ALASKA — TRS ACTIVES



Section 1.2(b)  
DISTRIBUTIONS OF ACTIVE PARTICIPANTS

STATE OF ALASKA - TRS ACTIVES				VALUATION DATE 6/30/1988			
----- ANNUAL EARNINGS BY AGE-----				----- ANNUAL EARNINGS BY SERVICE-----			
AGE GROUP	NUMBER OF PEOPLE	TOTAL ANNUAL EARNINGS	AVERAGE ANNUAL EARNINGS	SERVICE GROUP	NUMBER OF PEOPLE	TOTAL ANNUAL EARNINGS	AVERAGE ANNUAL EARNINGS
0-19	0	0.	0.	0	1510	54454484.	36063.
20-24	31	863911.	27868.	1	479	20760852.	43342.
25-29	483	15280175.	31636.	2	554	24083388.	43472.
30-34	1110	40866456.	36817.	3	818	34163716.	41765.
35-39	1998	83893576.	41989.	4	773	32589658.	42160.
40-44	2115	96918416.	45824.	0- 4	4134	166052256.	40167.
45-49	1475	72167576.	48927.	5- 9	2169	99572872.	45907.
50-54	665	33858696.	50915.	10-14	1226	59981992.	48925.
55-59	241	12322196.	51129.	15-19	566	29032750.	51295.
60-64	79	4085362.	51713.	20-24	112	5976706.	53363.
65-69	17	845195.	49717.	25-29	9	571143.	63460.
70-74	2	117415.	58707.	30-34	2	122366.	61183.
75-79	2	91028.	45514.	35-39	0	0.	0.
80+	0	0.	0.	40+	0	0.	0.
TOTAL	8218	361310016.	43966.	TOTAL	8218	361310080.	43966.

SERVICE GROUPS BY AGE GROUPS

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	0	0	0	0	0	0	0	0	0	0
20-24	31	0	0	0	0	0	0	0	0	31
25-29	440	43	0	0	0	0	0	0	0	483
30-34	799	275	36	0	0	0	0	0	0	1110
35-39	1110	581	280	27	0	0	0	0	0	1998
40-44	890	615	389	214	7	0	0	0	0	2115
45-49	522	394	307	197	55	0	0	0	0	1475
50-54	218	177	138	91	35	6	0	0	0	665
55-59	85	62	56	24	10	3	1	0	0	241
60-64	29	18	14	12	5	0	1	0	0	79
65-69	8	4	4	1	0	0	0	0	0	17
70-74	1	0	1	0	0	0	0	0	0	2
75-79	1	0	1	0	0	0	0	0	0	2
80+	0	0	0	0	0	0	0	0	0	0
TOTAL	4134	2169	1226	566	112	9	2	0	0	8218

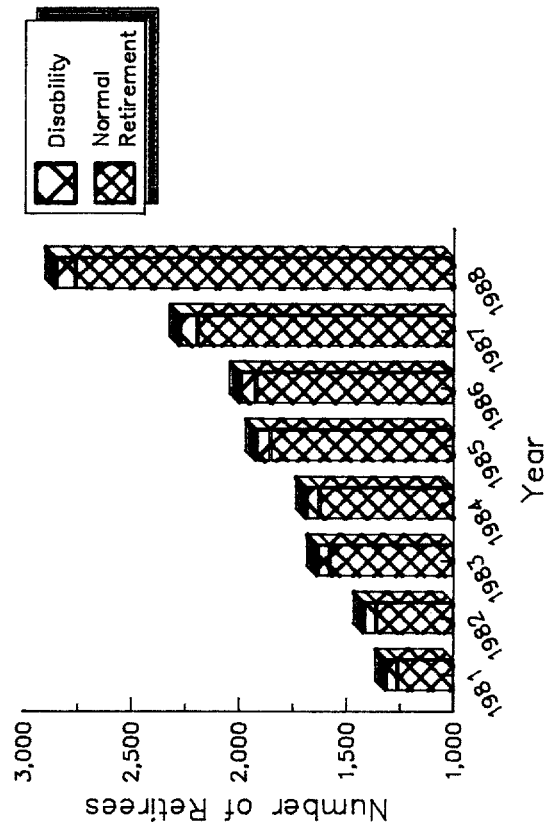
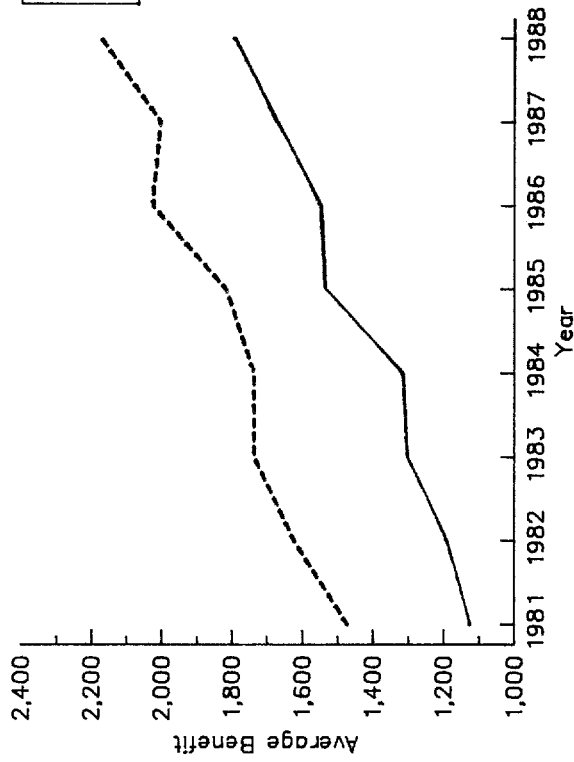
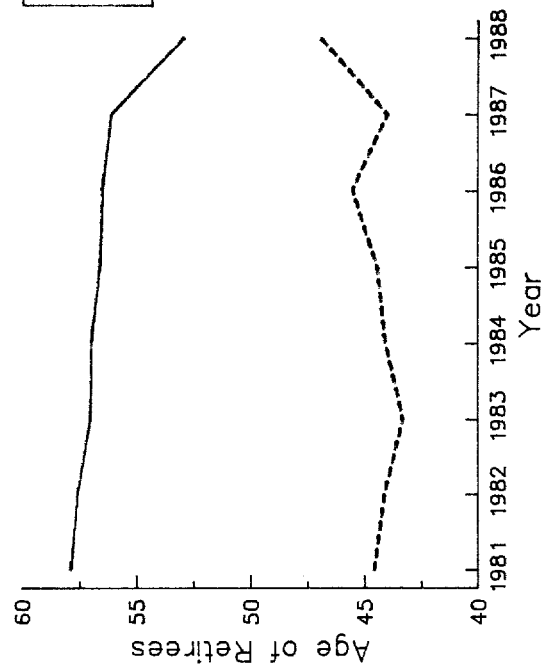
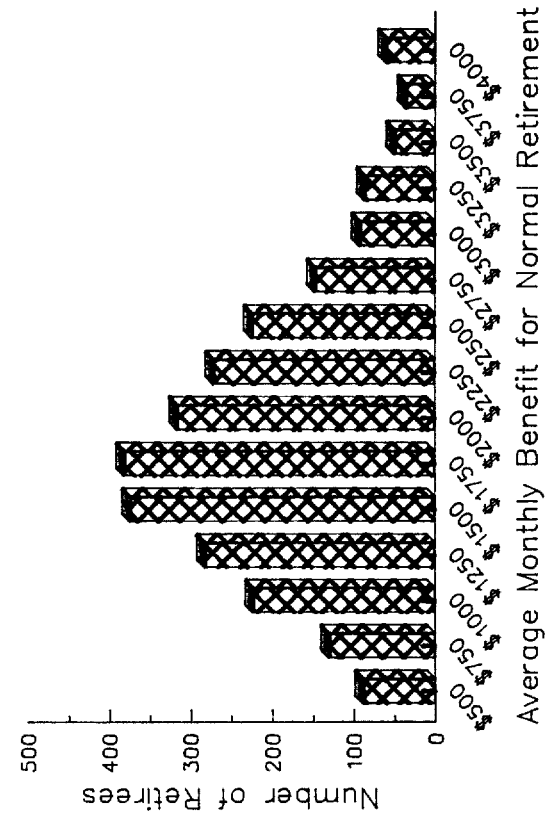
Section 1.2(c)  
STATISTICS ON NEW RETIREES DURING THE YEAR ENDING JUNE 30

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
<u>Service</u>					
Number	179	279	179	285	621
Average Age At Retirement	54.66	54.95	56.06	53.83	52.07
Average Monthly Benefit	\$ 1,770	\$ 2,011	\$ 1,968	\$ 2,124	\$ 2,224
<u>Disability</u>					
Number	5	6	7	13	15
Average Age At Retirement	52.60	48.57	43.48	45.14	46.28
Average Monthly Benefit	\$ 2,749	\$ 2,500	\$ 2,648	\$ 2,321	\$ 2,743
<u>Survivor</u>					
Number	8	4	3	3	3
Average Age At Retirement	53.65	46.78	45.47	46.43	47.39
Average Monthly Benefit	\$ 1,330	\$ 2,452	\$ 1,942	\$ 1,208	\$ 1,143
<u>Total</u>					
Number	192	289	189	301	639
Average Age At Retirement	54.53	54.70	55.43	53.38	51.91
Average Monthly Benefit	\$ 1,777	\$ 2,027	\$ 1,992	\$ 2,123	\$ 2,231

Section 1.2(d)  
STATISTICS ON ALL RETIREES AS OF JUNE 30

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
<u>Normal Retirement</u>					
Number, Prior Year	1,579	1,627	1,855	1,922	2,194
Net Change During Year	48	228	67	272	566
Number, This Year	1,627	1,855	1,922	2,194	2,760
Average Age At Retirement	56.96	56.57	56.47	56.06	55.11
Average Age Now	64.13	63.49	64.01	63.52	61.84
Average Monthly Benefit	\$1,317	\$1,537	\$1,549	\$1,672	\$1,793
<u>Surviving Spouse's Benefits</u>					
Number, Prior Year	42	40	64	69	70
Net Change During Year	(2)	24	5	1	15
Number, This Year	40	64	69	70	85
Average Age At Retirement	57.87	57.29	54.52	53.93	55.83
Average Age Now	64.87	66.20	63.98	63.49	66.74
Average Monthly Benefit	\$ 593	\$ 953	\$ 833	\$ 750	\$708
<u>Survivor's Benefits</u>					
Number, Prior Year	35	37	38	34	32
Net Change During Year	2	1	(4)	(2)	4
Number, This Year	37	38	34	32	36
Average Age At Retirement	35.47	36.23	35.29	39.04	36.15
Average Age Now	41.09	41.84	43.08	46.77	44.66
Average Monthly Benefit	\$1,247	\$1,501	\$1,584	\$1,746	\$1,513
<u>Disabilities</u>					
Number, Prior Year	56	60	65	73	80
Net Change During Year	4	5	8	7	11
Number, This Year	60	65	73	80	91
Average Age At Retirement	44.11	44.46	44.55	44.00	44.39
Average Age Now	49.64	50.30	50.64	49.93	49.87
Average Monthly Benefit	\$1,817	\$2,026	\$2,003	\$2,075	\$2,125

# STATE OF ALASKA — TRS RETIREES



Section 1.2(e)  
DISTRIBUTIONS OF ANNUAL BENEFITS OF RETIRED PARTICIPANTS

STATE OF ALASKA - TRS - ALL RETIREES				VALUATION DATE 6/30/1988			
----- ANNUAL BENEFIT BY AGE-----				---- ANNUAL BENEFIT BY SERVICE----			
AGE GROUP	NUMBER OF PEOPLE	TOTAL ANNUAL BENEFIT	AVERAGE ANNUAL BENEFIT	SERVICE GROUP	NUMBER OF PEOPLE	TOTAL ANNUAL BENEFIT	AVERAGE ANNUAL BENEFIT
0-19	3	14464.	4821.	0	168	1963132.	11685.
20-24	2	9389.	4694.	1	4	37199.	9300.
25-29	0	0.	0.	2	3	8835.	2945.
30-34	3	90731.	30244.	3	2	28430.	14215.
35-39	5	145531.	29106.	4	1	2995.	2995.
40-44	80	1868823.	23360.	0- 4	178	2040590.	11464.
45-49	268	6815782.	25432.	5- 9	97	1199820.	12369.
50-54	493	12389515.	25131.	10-14	231	2805130.	12143.
55-59	594	13740912.	23133.	15-19	556	8983938.	16158.
60-64	494	10336707.	20925.	20-24	928	20648040.	22250.
65-69	429	7953215.	18539.	25-29	755	19941940.	26413.
70-74	276	4744491.	17190.	30-34	182	5848644.	32135.
75-79	164	2484460.	15149.	35-39	34	1249466.	36749.
80+	161	2533077.	15733.	40+	11	409532.	37230.
TOTAL	2972	63127100.	21241.	TOTAL	2972	63127100.	21241.

SERVICE GROUPS BY AGE GROUPS

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	3	0	0	0	0	0	0	0	0	3
20-24	2	0	0	0	0	0	0	0	0	2
25-29	0	0	0	0	0	0	0	0	0	0
30-34	0	2	1	0	0	0	0	0	0	3
35-39	1	2	0	2	0	0	0	0	0	5
40-44	8	5	5	29	33	0	0	0	0	80
45-49	10	8	4	46	159	41	0	0	0	268
50-54	13	11	20	60	194	186	9	0	0	493
55-59	19	23	48	107	169	186	37	5	0	594
60-64	21	12	54	105	125	132	37	6	2	494
65-69	24	19	43	87	106	97	46	4	3	429
70-74	27	5	34	57	61	50	26	10	6	276
75-79	13	5	12	35	46	35	14	4	0	164
80+	37	5	10	28	35	28	13	5	0	161
TOTAL	178	97	231	556	928	755	182	34	11	2972



Section 1.3  
ACTUARIAL BASIS

Valuation of Liabilities

- 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. Actuarial funding surpluses are amortized over five 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 projected to retirement with salary scale 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 of the Plan 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 Plan. 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 expenses.                                 |
| 2. Salary Scale     | 6.5% per year for the first five years of employment and 5.5% per year thereafter. |
| 3. Health Inflation | 9% per year.   |
| 4. Mortality        | 1984 Unisex Pension Mortality Table set back 1-1/2 years.                          |

- |                         |  |
|-------------------------|--|
| 5. Turnover             | Based upon the 1981-85 actual total turnover experience. (See Table 1).  |
| 6. 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.            |
| 7. Retirement Age       | Retirement rates based on actual experience in accordance with Table 3.  |
| 8. Spouse's Age         | Wives are assumed to be four years younger than husbands.  |
| 9. Contribution Refunds | 100% of those terminating after age 35 with eight or more years of service will leave their contributions in the fund and thereby retain their deferred vested benefit. All others who terminate are assumed to have their contributions refunded. |
| 10. C.O.L.A.            | 54% of those receiving retirement benefits will be eligible for C.O.L.A.   |
| 11. Sick Leave          | 4.7 days of unused sick leave for each year of service will be available to be credited once the member is retired.  |
| 12. Expenses            | Expenses are covered in the interest assumption.   |

#### Valuation of Assets

Based upon the three-year average ratio between market and book values of the System's assets, except that fixed income investments are carried at book value. Assets are accounted for on an accrued basis. Valuation assets cannot be outside the range of book and actuarial values.

Valuation of Medical Benefits

Medical benefits for retirees are provided by the payment of premiums from the 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 increased with the health inflation assumption. The actuarial cost method used for funding retirement benefits is also used to fund health benefits.

For FY89, the pre-65 monthly premium is \$267.43 and the post-65 premium is \$76.37, based on a total blended premium of \$211.22. ←

TABLE 1  
ALASKA TRS  
TOTAL TURNOVER ASSUMPTIONS

<u>Select Rates of Turnover During the First 10 Years of Employment</u>		<u>Ultimate Rates of Turnover After the First 10 Years of Employment</u>	
<u>Year of Employment</u>	<u>Rate</u>	<u>Ages</u>	<u>Rate</u>
1	.17	20-39	.03
2	.15	40+	.02
3	.12		
4	.12		
5	.11		
6	.09		
7	.07		
8	.07		
9	.07		
10	.06		

TABLE 2  
ALASKA TRS - DISABILITY RATES  
ANNUAL RATES PER 1,000 EMPLOYEES

<u>Age</u>	<u>Rate</u>
20	.42
21	.43
22	.43
23	.44
24	.44
25	.45
26	.46
27	.47
28	.48
29	.49
30	.50
31	.52
32	.53
33	.54
34	.56
35	.58
36	.59
37	.62
38	.64
39	.67
40	.69
41	.72
42	.76
43	.82
44	.89
45	.97
46	1.06
47	1.15
48	1.24
49	1.34
50	1.44
51	1.56
52	1.72
53	1.91
54	2.13
55	2.40
56	2.75
57	3.20
58	3.66
59	4.32
60	5.06
61	5.85
62	6.78
63	7.83
64	8.94

TABLE 3  
ALASKA TRS - RETIREMENT RATES

<u>Age at Retirement</u>	<u>Retirement Rate</u>
50	.063
51	.063
52	.063
53	.063
54	.063
55	.117
56	.117
57	.117
58	.117
59	.117
60	.260
61	.180
62	.210
63	.240
64	.270
65	.540
66	.820
67	1.000

For ages less than 50, teachers are assumed to retire two years after the earliest age they are eligible to retire.

Section 2  
VALUATION RESULTS

This section sets forth the results of the actuarial valuation.

Section 2.1(a) shows the distribution of the assets as of June 30, 1988.

Section 2.1(b) shows the transactions of the plan's fund during the Fiscal Year 1988.

Section 2.1(c) develops the valuation assets.

Section 2.2 shows the actuarial present values as of June 30, 1988.

Section 2.3 calculates the total contribution rate for Fiscal Year 1991.

Section 2.4(a) calculates the actuarial gain or loss for FY88.

Section 2.4(b) shows the individual sources of gain and loss.

Section 2.1(a)  
STATEMENT OF NET ASSETS AS OF JUNE 30, 1988 (in thousands)

	<u>Book Value</u>	<u>Actuarial Value*</u>
Cash	\$ 4,641	\$ 4,641
Short-Term Investments	20,832	20,832
U.S. Government Bonds	496,188	496,188
Corporate Bonds	146,907	146,907
Common Stock	347,780	359,898
Foreign Stocks	51,756	91,246
Real Estate Equities	79,261	85,587
Mortgages (net of reserves)	98,141	98,141
Financial Futures	0	0
Accrued Receivables and Expenses	<u>28,465</u>	<u>28,465</u>
Total Assets	\$1,273,971	\$1,331,905

\* The actuarial value of assets is the fair market value of equities and the book value of fixed income investments, as provided in the audited financial statements.



Section 2.1(b)

CHANGES IN NET ASSETS DURING FISCAL YEAR 1988 (in thousands)

Net Assets, June 30, 1987, (market value)	\$1,303,464
--	-------------

Additions:

Employee Contributions	\$ 33,104	
Employer Contributions	69,363	
Dividend Income	15,156	
Interest Income	86,265	
Realized and Unrealized Gain (Loss) on Investments	<u>(76,748)</u>	127,140

Deductions:

Medical Benefits	\$ 5,040	
Retirement Benefits	60,939	
Refunds of Contributions	3,798	
Administrative Expenses	<u>4,252</u>	<u>74,029</u>

Net Assets, June 30, 1988, (market value)	\$1,356,575
--	-------------

Approximate Investment Return  
Rate During the Year:

Based on Market Values	1.87%
Based on Valuation Assets	6.33%

Section 2.1(c)  
DEVELOPMENT OF VALUATION ASSETS AS OF JUNE 30, 1988 (in thousands)

	<u>Actuarial Values</u>	<u>Book Values</u>	<u>Ratio (A/B)</u>
(1) June 30, 1988	\$1,331,905	\$1,273,971	1.0455
(2) June 30, 1987	1,267,159	1,146,583	1.1052
(3) June 30, 1986	1,077,878	1,005,289	1.0722
(4) Average Ratio			1.0743
(5) Book Value at June 30, 1988			\$1,273,971
(6) Valuation Assets at June 30, 1988 (4) x (5) but not outside the range of book and actuarial values			\$1,331,905

Section 2.2

ACTUARIAL PRESENT VALUES AS OF JUNE 30, 1988 (in thousands)

	<u>Normal Cost</u>	<u>Accrued Liabilities</u>
<u>Active Members</u>		
Retirement Benefits	\$ 40,240	\$ 509,183
Termination Benefits	1,242	10,083
Return of Contributions	1,747	10,317
Disability Benefits	305	6,619
Death Benefits	1,188	14,198
Medical Benefits	24,176	144,534
Indebtedness	0	(25,405)
Retirement Incentive Program Receivables	<u>0</u>	<u>(9,760)</u>
Subtotal	\$ 68,898	\$ 659,769
<u>Inactive Members</u>		
Not Vested		\$ 9,168
Vested Terminations - Retirement Benefits		17,496
- Medical Benefits		16,844
Retirees & Beneficiaries - Retirement Benefits		551,002
- Medical Benefits		<u>93,580</u>
Subtotal		\$ 688,090
<u>Totals</u>		\$1,347,859

Section 2.3

CALCULATION OF TOTAL CONTRIBUTION RATE (in thousands)

Normal Cost Rate

(1) Total Normal Cost	\$ 68,898
(2) Total Salaries	361,310
(3) Normal Cost Rate, (1) / (2)	19.07%
(4) Average Member Contribution Rate	7.21%
(5) Consolidated Employer Normal Cost Rate, (3) - (4)	11.86%

Past Service Rate

(1) Accrued Liability	\$1,347,859
(2) Valuation Assets	1,331,905
(3) Total Unfunded Liability, (1) - (2)	15,954
(4) Amortization Factor (25 year)	10.706612
(5) Past Service Cost, (3) / (4)	1,490
(6) Total Salaries	361,310
(7) Past Service Rate, (5) / (6)	.41%

<u>Total Employer Contribution Rate</u>	12.27%
---	--------

Section 2.4(a)

DEVELOPMENT OF ACTUARIAL GAIN/(LOSS) FOR FY88 (in thousands)

(1) Unfunded Liability, June 30, 1987	\$(14,100)
(2) Normal Cost for FY88	58,098
(3) Interest on (1) and (2) at 9%	3,960
(4) Employee Contributions for FY88	33,104
(5) Employer Contributions for FY88	69,363
(6) Interest on (4) and (5) at 9% for one-half year	4,611
(7) Expected Unfunded Liability, June 30, 1988, (1) + (2) + (3) - (4) - (5) - (6)	(59,120)
(8) Actual Unfunded Liability, June 30, 1988	15,954
(9) Actuarial Gain/(Loss) for the Year, (7) - (8)	(75,074)

Section 2.4(b)  
SOURCES OF ACTUARIAL GAIN/(LOSS) FOR FY88 (in thousands)

Actuarial Gains

Salary Increases	\$ 25,755
Turnover	<u>4,073</u>
Total Actuarial Gains	\$ 29,828

Actuarial Losses

Retirement Incentive Program	\$ 19,135
Investment	32,561
Retiree Medical Insurance	37,182
New Entrants	12,623
Mortality and Disability	2,990
Miscellaneous	<u>411</u>
Total Actuarial Losses	\$104,902

Net Actuarial Gain/(Loss) for FY88	\$ (75,074)
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STATE OF ALASKA - T. R. S.  
DISCLOSURE FOR G.A.S.B. STATEMENT NO. 5 ('000 OMITTED)

\*\*\* TOTALS FOR ALL EMPLOYERS \*\*\*

VALUATION DATE	*****PROJECTED BENEFIT OBLIGATION***** CURRENT RETIREES & TERMINATED	*****CURRENT EMPLOYEES***** CONTRIBS WITH INT	**EMPLOYER FINANCED** VESTED	NON-VESTED	TOTAL	NET ASSETS AVAILABLE FOR BENEFITS	UNFUNDED PENSION BENEFIT OBLIGATION	ASSETS AS PCT OF PBO
JUNE 30, 1987	578,468	210,493	353,326	68,622	1,210,909	1,225,009	-14,100	101%
JUNE 30, 1988	688,090	228,217	381,726	49,826	1,347,859	1,331,905	15,954	99%

Section 2.5  
DISCLOSURE FOR G.A.S.B. STATEMENT NO. 5

TABLE 1

State of Alaska TRS  
Financial Projections ('000 omitted)

	Investment Return 9.00% (nominal)			Salary Increases 6.04% (6.5/5.5 assumed)							
As of June 30	--Valuation Total Assets	Amounts on Accrued Liability	July 1-- Surplus* (Deficit)	-----Flow Total Employer Salaries Contribs		Amounts During Following 12 Months-- Employee Total Contribs		Benefit Payments	Net Contribs	Investment Earnings	Ending Asset Valuation
1988	1,331,905	1,347,859	(15,954)	413,556	59,004	37,885	96,889	78,902	17,987	126,075	1,475,967
1989	1,475,967	1,482,362	(6,395)	438,535	59,519	39,723	99,242	83,548	15,694	139,521	1,631,182
1990	1,631,182	1,628,457	2,725	465,022	57,897	38,667	96,564	88,385	8,179	153,781	1,793,142
1991	1,793,142	1,784,918	8,224	493,110	57,715	37,723	95,438	93,429	2,009	168,735	1,963,887
1992	1,963,887	1,952,792	11,094	522,893	60,979	39,897	100,876	98,692	2,183	184,802	2,150,872
1993	2,150,872	2,136,494	14,378	554,476	64,418	42,196	106,614	104,192	2,421	202,398	2,355,692
1994	2,355,692	2,337,571	18,121	587,967	68,040	44,627	112,667	109,945	2,722	221,675	2,580,089
1995	2,580,089	2,557,711	22,378	623,480	71,855	47,197	119,052	114,812	4,240	242,848	2,827,177
1996	2,827,177	2,799,971	27,206	661,138	75,870	49,916	125,786	125,013	773	265,931	3,093,880
1997	3,093,880	3,061,206	32,675	701,071	80,095	52,791	132,886	129,756	3,130	291,120	3,388,130
1998	3,388,130	3,349,291	38,839	743,415	84,542	55,830	140,372	138,434	1,938	318,741	3,708,810
1999	3,708,810	3,663,024	45,786	788,318	89,218	59,124	148,342	146,321	2,021	348,904	4,059,735
2000	4,059,735	4,006,144	53,591	835,932	94,136	62,695	156,831	151,330	5,501	382,066	4,447,302
2001	4,447,302	4,384,959	62,343	886,422	99,307	66,482	165,789	155,844	9,944	418,716	4,875,962
2002	4,875,962	4,803,804	72,158	939,962	104,740	70,497	175,237	165,218	10,019	459,035	5,345,017
2003	5,345,017	5,261,848	83,169	996,736	110,445	74,755	185,200	172,835	12,366	503,255	5,860,638

- \* Surpluses reduce employer contributions over 5 years  
\* Deficits increase employer contributions over 25 years

## PERCENTAGE RATIO RELATIONSHIPS OF ABOVE DATA

As of June 30	Funding Ratio	--As % of Salaries--				--As % of Assets--	
		Employer Contribs	Employee Contribs	Total Contribs	Benefit Payments	Net Contribs	Investment Earnings
1988	98.8	14.27%	9.16%	23.43%	19.08%	1.28%	9.00%
1989	99.6	13.57%	9.06%	22.63%	19.05%	1.01%	9.00%
1990	100.2	12.45%	8.32%	20.77%	19.01%	0.48%	9.00%
1991	100.5	11.70%	7.65%	19.35%	18.95%	0.11%	9.00%
1992	100.6	11.66%	7.63%	19.29%	18.87%	0.11%	9.00%
1993	100.7	11.62%	7.61%	19.23%	18.79%	0.11%	9.00%
1994	100.8	11.57%	7.59%	19.16%	18.70%	0.11%	9.00%
1995	100.9	11.52%	7.57%	19.09%	18.41%	0.16%	9.00%
1996	101.0	11.48%	7.55%	19.03%	18.91%	0.03%	9.00%
1997	101.1	11.42%	7.53%	18.95%	18.51%	0.10%	9.00%
1998	101.2	11.37%	7.51%	18.88%	18.62%	0.05%	9.00%
1999	101.2	11.32%	7.50%	18.82%	18.56%	0.05%	9.00%
2000	101.3	11.26%	7.50%	18.76%	18.10%	0.13%	9.00%
2001	101.4	11.20%	7.50%	18.70%	17.58%	0.21%	9.00%
2002	101.5	11.14%	7.50%	18.64%	17.58%	0.20%	9.00%
2003	101.6	11.08%	7.50%	18.58%	17.34%	0.22%	9.00%



TABLE 2

State of Alaska TRS  
Financial Projections ('000 omitted)

Investment Return 10.00% (nominal)				Salary Increases 6.04% (6.5/5.5 assumed)							
As of June 30	--Valuation Amounts on July 1--			-----Flow Amounts During Following 12 Months-----							Ending Asset Valuation
	Total Assets	Accrued Liability	Surplus* (Deficit)	Total Salaries	Employer Contribs	Employee Contribs	Total Contribs	Benefit Payments	Net Contribs	Investment Earnings	
1988	1,331,905	1,347,859	(15,954)	413,556	59,004	37,885	96,889	78,902	17,987	140,749	1,490,641
1989	1,490,641	1,482,362	8,279	438,535	57,237	39,723	96,960	83,548	13,413	157,188	1,661,242
1990	1,661,242	1,628,457	32,785	465,022	55,090	38,667	93,757	88,385	5,372	174,699	1,841,313
1991	1,841,313	1,784,918	56,394	493,110	53,216	37,723	90,939	93,429	(2,490)	193,213	2,032,036
1992	2,032,036	1,952,792	79,244	522,893	54,614	39,897	94,511	98,692	(4,181)	213,155	2,241,009
1993	2,241,009	2,136,494	104,515	554,476	56,000	42,196	98,195	104,192	(5,997)	235,006	2,470,018
1994	2,470,018	2,337,571	132,448	587,967	57,363	44,627	101,989	109,945	(7,956)	258,954	2,721,016
1995	2,721,016	2,557,711	163,306	623,480	58,692	47,197	105,890	114,812	(8,922)	285,261	2,997,355
1996	2,997,355	2,799,971	197,384	661,138	59,976	49,916	109,892	125,013	(15,122)	313,966	3,296,199
1997	3,296,199	3,061,206	234,994	701,071	61,199	52,791	113,990	129,756	(15,766)	345,313	3,625,746
1998	3,625,746	3,349,291	276,455	743,415	62,349	55,830	118,180	138,434	(20,254)	379,691	3,985,182
1999	3,985,182	3,663,024	322,159	788,318	63,406	59,124	122,530	146,321	(23,791)	417,255	4,378,646
2000	4,378,646	4,006,144	372,501	835,932	64,351	62,695	127,046	151,330	(24,284)	458,544	4,812,905
2001	4,812,905	4,384,959	427,946	886,422	65,161	66,482	131,643	155,844	(24,202)	504,145	5,292,848
2002	5,292,848	4,803,804	489,044	939,962	65,804	70,497	136,302	165,218	(28,917)	554,303	5,818,235
2003	5,818,235	5,261,848	556,386	996,736	66,248	74,755	141,003	172,835	(31,831)	609,323	6,395,726

\* Surpluses reduce employer contributions over 5 years

\* Deficits increase employer contributions over 25 years

## PERCENTAGE RATIO RELATIONSHIPS OF ABOVE DATA

As of June 30	Funding Ratio	-----As % of Salaries-----				--As % of Assets--	
		Employer Contribs	Employee Contribs	Total Contribs	Benefit Payments	Net Contribs	Investment Earnings
1988	98.8	14.27%	9.16%	23.43%	19.08%	1.28%	10.00%
1989	100.6	13.05%	9.06%	22.11%	19.05%	0.85%	10.00%
1990	102.0	11.85%	8.32%	20.16%	19.01%	0.31%	10.00%
1991	103.2	10.79%	7.65%	18.44%	18.95%	-0.13%	10.00%
1992	104.1	10.44%	7.63%	18.07%	18.87%	-0.20%	10.00%
1993	104.9	10.10%	7.61%	17.71%	18.79%	-0.26%	10.00%
1994	105.7	9.76%	7.59%	17.35%	18.70%	-0.31%	10.00%
1995	106.4	9.41%	7.57%	16.98%	18.41%	-0.31%	10.00%
1996	107.0	9.07%	7.55%	16.62%	18.91%	-0.48%	10.00%
1997	107.7	8.73%	7.53%	16.26%	18.51%	-0.46%	10.00%
1998	108.3	8.39%	7.51%	15.90%	18.62%	-0.53%	10.00%
1999	108.8	8.04%	7.50%	15.54%	18.56%	-0.57%	10.00%
2000	109.3	7.70%	7.50%	15.20%	18.10%	-0.53%	10.00%
2001	109.8	7.35%	7.50%	14.85%	17.58%	-0.48%	10.00%
2002	110.2	7.00%	7.50%	14.50%	17.58%	-0.52%	10.00%
2003	110.6	6.65%	7.50%	14.15%	17.34%	-0.52%	10.00%

TABLE 3

State of Alaska TRS  
Financial Projections ('000 omitted)

Investment Return				9.00% (nominal)		Salary Increases		5.04% (5.5/4.5 assumed)			
As of June 30	--Valuation Total Assets	Amounts on Accrued Liability	July 1-- Surplus* (Deficit)	-----Flow Total Salaries	Employer Contribs	Amounts During Employee Contribs	Following 12 Total Contribs	Months Benefit Payments	Net Contribs	Investment Earnings	Ending Asset Valuation
1988	1,331,905	1,347,859	(15,954)	409,656	58,541	37,584	96,126	78,590	17,536	126,055	1,475,495
1989	1,475,495	1,476,121	(626)	430,303	57,181	39,090	96,272	82,889	13,383	139,373	1,628,251
1990	1,628,251	1,614,564	13,687	451,990	55,328	37,668	92,995	87,343	5,653	153,391	1,787,295
1991	1,787,295	1,761,762	25,532	474,770	53,923	36,320	90,243	91,961	(1,718)	168,018	1,953,594
1992	1,953,594	1,918,539	35,056	498,699	55,872	38,051	93,922	96,757	(2,834)	183,608	2,134,368
1993	2,134,368	2,089,059	45,309	523,833	57,895	39,864	97,759	101,741	(3,982)	200,558	2,330,944
1994	2,330,944	2,274,591	56,353	550,234	59,995	41,763	101,757	106,927	(5,169)	218,993	2,544,767
1995	2,544,767	2,476,514	68,252	577,966	62,172	43,752	105,924	111,171	(5,247)	239,099	2,778,619
1996	2,778,619	2,697,541	81,078	607,096	64,429	45,836	110,265	120,690	(10,425)	260,860	3,029,054
1997	3,029,054	2,934,142	94,912	637,693	66,766	48,018	114,784	124,686	(9,901)	284,437	3,303,589
1998	3,303,589	3,193,767	109,822	669,833	69,185	50,304	119,490	132,547	(13,057)	310,115	3,600,647
1999	3,600,647	3,474,741	125,906	703,592	71,687	52,769	124,456	139,543	(15,087)	337,962	3,923,522
2000	3,923,522	3,780,270	143,252	739,053	74,272	55,429	129,701	143,580	(13,879)	368,383	4,278,026
2001	4,278,026	4,116,064	161,962	776,302	76,943	58,223	135,165	147,035	(11,869)	401,814	4,667,971
2002	4,667,971	4,485,809	182,162	815,427	79,696	61,157	140,853	155,255	(14,402)	438,375	5,091,944
2003	5,091,944	4,887,949	203,995	856,525	82,531	64,239	146,771	161,618	(14,847)	478,229	5,555,326

- \* Surpluses reduce employer contributions over 5 years  
\* Deficits increase employer contributions over 25 years

## PERCENTAGE RATIO RELATIONSHIPS OF ABOVE DATA

As of June 30	Funding Ratio	-----As % of Salaries-----				--As % of Assets--	
		Employer Contribs	Employee Contribs	Total Contribs	Benefit Payments	Net Contribs	Investment Earnings
1988	98.8	14.29%	9.17%	23.46%	19.18%	1.25%	9.00%
1989	100.0	13.29%	9.08%	22.37%	19.26%	0.86%	9.00%
1990	100.8	12.24%	8.33%	20.57%	19.32%	0.33%	9.00%
1991	101.4	11.36%	7.65%	19.01%	19.37%	-0.09%	9.00%
1992	101.8	11.20%	7.63%	18.83%	19.40%	-0.14%	9.00%
1993	102.2	11.05%	7.61%	18.66%	19.42%	-0.18%	9.00%
1994	102.5	10.90%	7.59%	18.49%	19.43%	-0.21%	9.00%
1995	102.8	10.76%	7.57%	18.33%	19.23%	-0.20%	9.00%
1996	103.0	10.61%	7.55%	18.16%	19.88%	-0.36%	9.00%
1997	103.2	10.47%	7.53%	18.00%	19.55%	-0.31%	9.00%
1998	103.4	10.33%	7.51%	17.84%	19.79%	-0.38%	9.00%
1999	103.6	10.19%	7.50%	17.69%	19.83%	-0.40%	9.00%
2000	103.8	10.05%	7.50%	17.55%	19.43%	-0.34%	9.00%
2001	103.9	9.91%	7.50%	17.41%	18.94%	-0.27%	9.00%
2002	104.1	9.77%	7.50%	17.27%	19.04%	-0.30%	9.00%
2003	104.2	9.64%	7.50%	17.14%	18.87%	-0.28%	9.00%

TABLE 4

State of Alaska TRS  
Financial Projections ('000 omitted)

As of June 30	Investment Return	10.00% (nominal)	Salary Increases			5.04% (5.5/4.5 assumed)			Ending Asset Valuation	
			Amounts During Following 12 Months		Net Contribs	Investment Earnings				
			Total Salaries	Flow Employer Contribs				Employee Contribs		Total Contribs
---Valuation Total Assets	Amounts on Accrued Liability	July 1--- Surplus* (Deficit)								
1988	1,331,905	(15,954)	409,656	58,541	37,584	96,126	78,590	17,536	140,727	1,490,167
1989	1,490,167	14,046	430,303	55,722	39,090	94,812	82,889	11,923	157,064	1,659,155
1990	1,659,155	1,614,564	451,990	52,441	37,668	90,109	87,343	2,766	174,350	1,836,270
1991	1,836,270	1,761,762	474,770	49,349	36,320	85,669	91,961	(6,293)	192,494	2,022,472
1992	2,022,472	1,918,539	498,699	49,439	38,051	87,489	96,757	(9,267)	211,896	2,225,101
1993	2,225,101	2,089,059	523,833	49,421	39,864	89,284	101,741	(12,456)	233,013	2,445,657
1994	2,445,657	2,274,591	550,234	49,281	41,763	91,044	106,927	(15,883)	256,000	2,685,773
1995	2,685,773	2,476,514	577,966	49,003	43,752	92,755	111,171	(18,417)	281,085	2,948,442
1996	2,948,442	2,697,541	607,096	48,568	45,836	94,404	120,690	(26,286)	308,272	3,230,428
1997	3,230,428	2,934,142	637,693	47,958	48,018	95,976	124,686	(28,709)	337,760	3,539,479
1998	3,539,479	3,193,767	669,833	47,154	50,304	97,458	132,547	(35,089)	369,891	3,874,281
1999	3,874,281	3,474,741	703,592	46,130	52,769	98,900	139,543	(40,643)	404,767	4,238,405
2000	4,238,405	3,780,270	739,053	44,863	55,429	100,292	143,580	(43,288)	442,868	4,637,985
2001	4,637,985	4,116,064	776,302	43,324	58,223	101,546	147,035	(45,488)	484,714	5,077,211
2002	5,077,211	4,485,809	815,427	41,475	61,157	102,632	155,255	(52,624)	530,476	5,555,063
2003	5,555,063	4,887,949	856,525	39,277	64,239	103,517	161,618	(58,101)	580,377	6,077,339

\* Surpluses reduce employer contributions over 5 years

\* Deficits increase employer contributions over 25 years

## PERCENTAGE RATIO RELATIONSHIPS OF ABOVE DATA

As of June 30	Funding Ratio	As % of Salaries			As % of Assets		
		Employer Contribs	Employee Contribs	Total Contribs	Benefit Payments	Net Contribs	Investment Earnings
1988	98.8	14.29%	9.17%	23.46%	19.18%	1.25%	10.00%
1989	101.0	12.95%	9.08%	22.03%	19.26%	0.76%	10.00%
1990	102.8	11.60%	8.33%	19.94%	19.32%	0.16%	10.00%
1991	104.2	10.39%	7.65%	18.04%	19.37%	-0.33%	10.00%
1992	105.4	9.91%	7.63%	17.54%	19.40%	-0.44%	10.00%
1993	106.5	9.43%	7.61%	17.04%	19.42%	-0.53%	10.00%
1994	107.5	8.96%	7.59%	16.55%	19.43%	-0.62%	10.00%
1995	108.4	8.48%	7.57%	16.05%	19.23%	-0.66%	10.00%
1996	109.3	8.00%	7.55%	15.55%	19.88%	-0.85%	10.00%
1997	110.1	7.52%	7.53%	15.05%	19.55%	-0.85%	10.00%
1998	110.8	7.04%	7.51%	14.55%	19.79%	-0.95%	10.00%
1999	111.5	6.56%	7.50%	14.06%	19.83%	-1.00%	10.00%
2000	112.1	6.07%	7.50%	13.57%	19.43%	-0.98%	10.00%
2001	112.7	5.58%	7.50%	13.08%	18.94%	-0.94%	10.00%
2002	113.2	5.09%	7.50%	12.59%	19.04%	-0.99%	10.00%
2003	113.6	4.59%	7.50%	12.09%	18.87%	-1.00%	10.00%