

**Teachers' Retirement System
State of Montana**

**ACTUARIAL VALUATION
(As of July 1, 1994)**

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Teachers' Retirement Board
State of Montana
1500 Sixth Avenue
Helena, Montana 59620-0139

Dear Members of the Board:

At your request, we have made an actuarial valuation of the Teachers' Retirement System of the State of Montana as of July 1, 1994. The results of the valuation are contained in the following report; they are summarized in section 1.

In brief, the current employer contribution rate, 7.47% of members' salaries, covers continuing actuarial costs of the System. A measure of the adequacy of the rate is the period required to amortize the unfunded actuarial liability. The following table compares this valuation's amortization period with that of the previous valuation:

Valuation Date	Amortization Period	
	Years From Valuation Date	Years From July 1, 1994
July 1, 1992	34.9	32.9
July 1, 1994	31.7	31.7

Your particular attention is called to Section 2 of this report. There we refer to the guidelines employed in the preparation of this report. We also comment on the sources and reliability of both the data and the actuarial assumptions upon which our findings depend. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief.

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We would like to express our appreciation to Mr. David L. Senn, Executive Secretary of the System, and to members of his staff, who gave substantial assistance in supplying the data on which this report is based.

Respectfully submitted,



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Consulting Actuary



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RGC/KIS/jr

**Teachers' Retirement System
State of Montana**

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Section 1

Summary of the Findings

As a result of the actuarial valuation of the benefits in effect under the Montana Teachers' Retirement System as of July 1, 1994, we recommend that the current employer contribution rate, 7.47% of members' salaries, remain in effect.

This rate is sufficient to meet the actuarial cost of the System accruing on the valuation date and to amortize the unfunded actuarial liability over 31.7 years. The actuarial costs are calculated using the entry age actuarial cost method.

The July 1, 1992 actuarial valuation found that the period then required to amortize the unfunded actuarial liability was 34.9 years. Thus, the expected amortization period as of July 1, 1994 was two years less, 32.9 years. The actual amortization period as of July 1, 1994 is less than the expected period because of net actuarial losses during the past two years, which were offset by gains due to the adoption of new assumptions. The changes in actuarial assumptions were presented in our separate report on the Investigation of Experience, July 1, 1989 - June 30, 1992, and were adopted by the Board effective July 1, 1994. The net losses increased the amortization period by about 0.9 years, and the changes in actuarial assumptions decreased the amortization period by about 2.1 years.

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Section 2

Scope of the Report

This report presents the actuarial valuation of the Montana Teachers' Retirement System as of July 1, 1994.

A summary of the findings resulting from this valuation is presented in the previous section. Section 3 describes the assets of the System. A summary of the assets is set forth in Table 1. Sections 4 and 5 describe how the obligations of the System are to be met under the actuarial cost method in use.

Section 6 discloses actuarial information based on the requirements of Statement No. 5 of the Governmental Accounting Standards Board.

The actuarial procedures and assumptions used in this valuation are described in Appendix A.

The current benefit structure, as determined by the provisions of the governing law on January 1, 1994, is summarized in Appendix B. Schedules of valuation data classifying the data used in the valuation by various categories of contributing members, former contributing members, and beneficiaries make up Appendix C.

Appendix D provides a brief summary of the System's recent experience. Comparative statistics are presented on the System's membership and contribution rates. Appendix E is a glossary of actuarial terms used in this report.

In preparing our report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. The participant data used for the valuation were submitted by the staff on computer disks. In our examination of these data, we found them to be reasonably consistent and comparable with data used in prior valuations.

We believe the actuarial assumptions used in the valuation, as summarized in Appendix A, are reasonably related to the experience of the System. The assumptions for the active members have been revised to be consistent with those recommended in our recent study of the System's experience and adopted by the Board for the July 1, 1994 actuarial valuation. The assumptions represent our best estimate of future conditions affecting the System.

In choosing the assumptions and preparing this report, we have conformed to generally recognized and accepted actuarial principles and practices that are consistent with the principles prescribed by the Actuarial Standards Board (ASB) and the Code of Professional Conduct and Qualification Standards for Public Statements of Actuarial Opinion of the American Academy of Actuaries.

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Section 3

Assets

In many respects, an actuarial valuation can be regarded as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is July 1, 1994. On that date the assets available for the payment of benefits are appraised. These assets are compared with the actuarial liabilities, which are generally well in excess of the assets. The actuarial process thus leads to a method of determining what contributions by members and their employers are needed to strike a balance.

For the July 1, 1989 valuation, the prior actuary adopted a new asset valuation method based on a three-year smoothing between the System's cost value and market value. This method is currently being used by the Montana Public Employee Retirement System, but with a four-year smoothing period. We recommend that the current smoothing method be retained, but reviewed for reasonableness from year to year.

The total assets of the System are reduced by a minor portion that is set aside for the payment of current liabilities. The Fullam Fund is also excluded. The resulting net assets equal the total fund balance available for the payment of benefits.

Table 1 summarizes the actuarial value of the net assets available for benefits on July 1, 1994, based on the method adopted by the Board for the July 1, 1989 valuation. The actuarial value of net assets is 101.9% of the market value as of July 1, 1994.

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Table 1

Summary of Assets

	Total Fund Balances		Cumulative Unrealized Gain	Increase During Year	Smoothing Weights	Smoothed Portions of Gain
	Cost Value	Market Value				
July 1, 1992	\$ 839,020,635	\$ 992,146,136	\$ 153,125,501	\$ 153,125,501	100.00%	\$ 153,125,501
July 1, 1993	924,131,095	1,107,994,664	183,863,569	30,738,068	66.67	20,492,045
July 1, 1994	999,593,170	1,136,361,547	136,768,377	(47,095,192)	33.33	<u>(15,698,397)</u>
						\$ 157,919,149

Actuarial Assets

July 1, 1994 Cost Value	\$ 999,593,170
Smoothed Portion of Gain	<u>157,919,149</u>
July 1, 1994 Actuarial Value	\$1,157,512,319

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Section 4

Actuarial Liabilities

In the previous section, an actuarial valuation was related to an inventory process, and an analysis was given of the inventory of assets of the System as of the valuation date, July 1, 1994. In this section, the discussion will focus on the commitments of the System, which will be referred to as its actuarial liabilities.

Table 2 contains an analysis of the actuarial present value of all future benefits for contributing members, for former contributing members, and for beneficiaries. The analysis is given by type of benefit and by sex.

The actuarial liabilities summarized in Table 2 include the actuarial present value of all future benefits expected to be paid with respect to each member. For an active member, this value includes a measure of both benefits already earned and future benefits to be earned. Thus, for all members, active and retired, the value extends over benefits earnable and payable for the rest of their lives and, if an optional benefit is chosen, for the lives of their surviving beneficiaries.

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Table 2

**Actuarial Present Value of Future Benefits
for Contributing Members, Former Contributing
Members, and Beneficiaries**

July 1, 1994

(All amounts are actuarial present values in millions)

	<u>Male</u>	<u>Female</u>	<u>Total</u>
A. Active members			
Service retirement	\$ 530.0	\$ 645.0	\$1,175.0
Disability retirement	13.5	18.3	31.8
Survivors' benefits	27.9	12.6	40.5
Vested Retirement	11.8	21.0	32.8
Refund of Member Contributions	<u>14.9</u>	<u>24.5</u>	<u>39.4</u>
Total	\$ 598.1	\$ 721.4	\$1,319.5
B. Inactive members and annuitants			
Service retirement	\$ 407.2	\$ 269.7	\$ 676.9
Disability retirement	6.7	7.4	14.1
Beneficiaries*	6.4	38.7	45.1
Vested terminated participants	10.5	14.5	25.0
Nonvested terminated participants	<u>2.2</u>	<u>5.3</u>	<u>7.5</u>
Total	\$ 433.0	\$ 335.6	\$ 768.6
C. Grand Total	\$1,031.1	\$1,057.0	\$2,088.1

**Includes survivors of active and retired members, and children's benefits.*

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Section 5

Employer Contributions

In the previous two sections, attention has been focused on the assets and actuarial liabilities of the System. A comparison of Tables 1 and 2 indicates that there is a shortfall in current assets to meet the total actuarial liabilities. This is the universal experience in all but a fully closed-down fund, where no further contributions of any sort are anticipated.

In an active system, there will always be a difference between the actuarial liabilities and the assets. This difference has to be funded with future contributions and investment returns. An actuarial valuation sets a schedule of future contributions that will deal with this funding in an orderly fashion.

The method used to determine the incidence of the contributions in various years is called the actuarial cost method. For this valuation, the entry age actuarial cost method has been used. Under this method, or essentially any actuarial cost method, the contributions required to meet the difference between current assets and current actuarial liabilities are allocated each year between two elements:

- A normal cost amount, which ideally is relatively stable as a percentage of salary over the years; and
- Whatever amount is left over, which is used to amortize what is called the unfunded actuarial liability.

The two items described above, normal cost and unfunded actuarial liability, are the keys to understanding the actuarial cost method. Let us first discuss the normal cost.

The normal cost is the theoretical contribution rate which will meet the ongoing costs of a group of average new employees. Suppose that a group of new employees were covered under a separate fund from which all benefits and to which all contributions and associated investment return were to be paid. Under the entry age actuarial cost method, the normal cost contribution rate is that level percentage of pay which would be exactly right to maintain this fund on a stable basis. If experience were to follow the actuarial assumptions exactly, the fund would be completely liquidated with the last payment to the last survivor of the group.

We have determined the normal cost rates separately by type of employee and by type of benefit under the System. These are summarized in Table 3. Prior assumptions did not specifically recognize a probability of refund of contributions upon termination of a vested member. The new assumption, shown in Table A-6, allows the termination benefits to be shown separately between expected refunds and expected vested retirements.

The normal costs as of July 1, 1992 and July 1, 1994 include .031% to fund the additional cost of the changes to the Vietnam service credit.

The term "fully funded" is often applied to a system where contributions for everyone at the normal cost rate will fully pay for the benefits of existing as well as new employees. More often than not, systems are not fully funded, either because of benefit improvements in the past which have not been completely paid for or actuarial deficiencies which have occurred because experience has not been as favorable as anticipated. Under these circumstances, an unfunded actuarial liability (UAL) exists.

Table 4 shows how the UAL was derived for the System. Lines A and B show, respectively, the total present value of future benefits and the portion of the future liability that is expected to be paid from future normal cost contributions, both employer and employee. Line C shows the actuarial liability: the portion of the present value of future benefits not provided by future normal cost contributions. Line D shows the assets available for benefits. Finally, Line E shows the unfunded actuarial liability.

As can be seen from this discussion, a key consideration in the adequacy of the funding of the System is how the UAL is being amortized. Table 5 shows that the current employer and member contribution rates are adequate to pay the total normal cost rate (9.494% of pay), with enough left over to amortize the UAL in 31.7 years. Therefore, the current basis is sufficient to meet future requirements.

The amortization of the UAL assumes continued contributions of 2.503% of pay for members of the Optional Retirement Plan (ORP) until June 30, 2027. The 1993 legislation modified the ORP contribution rate to be set at 2.503% from July 1, 1993 through June 30, 1997, and, effective July 1, 1997 through June 30, 2033, an adjusted rate will be determined based on the actual experience of the members of the Montana university system. Until the adjusted rate is determined, we have assumed contributions of 2.503% are payable until June 30, 2027, 40 years after the establishment of the ORP in accordance with the initial ORP funding requirements.

The unfunded actuarial liability at any date after establishment of a system is affected by any actuarial gains or losses arising when the actual experience of the system varies from the experience anticipated by the actuarial assumptions used in the valuations. To the extent actual experience as it develops differs from the assumptions used, so also will the actual emerging costs differ from the estimated costs.

In 1985, a target period of 40 years was established for the amortization of the unfunded liability generated at each valuation. Table 6 contains the schedule of unfunded actuarial liability accounts. Also shown is the employer contribution required to meet the 40-year goal, 14.881%. This exceeds the current statutory contribution of 14.514%. The funding target is not met by the current employer contribution rate. With an overall unfunded actuarial liability funding period of 31.7 years, however, we believe the System is actuarially sound and that increases to the statutory contribution rates are not required.

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Table 3

**Normal Cost Contribution Rates
As Percentages of Salary**

	July 1, 1994			July 1, 1992
	Male	Female	Total	Total
Service retirement	5.926%	7.252%	6.687%	6.522%
Disability retirement	0.237	0.287	0.265	0.225
Survivors' benefits	0.411	0.184	0.280	0.175
Vested retirement	0.541	0.575	0.560	2.954*
Refund of member contributions	<u>1.854</u>	<u>1.589</u>	<u>1.702</u>	<u>- *</u>
Total	8.969%	9.887%	9.494%	9.876%

**1992 assumptions treated vested retirement and refund of member contributions as one category, termination benefits.*

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Table 4

**Unfunded Actuarial Liability
(All dollar amounts in millions)**

	July 1, 1994	July 1, 1992
A. Actuarial present value of all future benefits for present and former members and their survivors (Table 2)	\$ 2,088.1	\$ 1,821.8
B. Less actuarial present value of total future normal costs for present members	375.2	287.9
C. Actuarial liability	\$ 1,712.9	\$ 1,533.9
D. Less actuarial value of assets available for benefits (Table 1)	1,157.5	954.5
E. Unfunded actuarial liability	\$ 555.4*	\$ 579.4

**Of this amount, approximately \$20.0 million will be paid by contributions to TRS of 2.503% of the salaries of the participants in the Optional Retirement Plan (ORP).*

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Table 5

**Recommended Contribution Rates
As Percentages of Salary**

	<u>July 1, 1994</u>	<u>July 1, 1992</u>
A. Employer contribution rate	7.470%	7.459%
B. Member contribution rate	<u>7.044</u>	<u>7.044</u>
C. Total contribution rate	14.514%	14.503%
D. Less total normal cost rate (Table 3)	<u>9.494</u>	<u>9.876</u>
E. Amount available to amortize unfunded actuarial liability*	5.020%	4.627%
F. Amortization period from July 1, 1994	31.7 years	32.9 years

**In addition, 2.503% of salaries of the participants in the Optional Retirement Plan (ORP) is available to help amortize the unfunded actuarial liability.*

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Table 6

Unfunded Actuarial Liability Amortization Schedule

<u>Date Established</u>	<u>Balance on July 1, 1992</u>	<u>Interest Charge on Balance</u>	<u>Contribution Allocated to Unfunded Liability</u>	<u>Interest Credit on Contribution</u>	<u>Balance on July 1, 1994</u>
July 1, 1985	\$ 717,612,330	\$ 119,410,692	\$ 60,334,033	\$ 4,849,465	\$ 771,839,524
July 1, 1987	(13,320,392)	(2,216,513)	(1,119,926)	(90,016)	(14,326,963)
July 1, 1989	(31,567,244)	(5,252,789)	(2,654,050)	(213,324)	(33,952,659)
July 1, 1992	(93,324,694)	(15,529,229)	(7,846,375)	(630,668)	(100,376,880)
July 1, 1994					<u>(67,783,022)</u>
					\$ 555,400,000

Required Contribution Rates

<u>Date Established</u>	<u>Remaining Years to Fund</u>	<u>Required Amortization Rates</u>
July 1, 1985	31 Years	7.365%
July 1, 1987	33	(0.313)
July 1, 1989	35	(0.297)
July 1, 1992	38	(0.828)
July 1, 1994	40	<u>(0.540)</u>
		5.387%
Plus Normal Cost Rate		<u>9.494</u>
Total Contribution Rate		14.881%

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Section 6

Actuarial Information for Accounting Purposes

Statement No. 5 of the Governmental Accounting Standards Board (GASB) requires disclosure of certain pension information by public employee retirement systems. Each system's funding status on a going-concern basis is determined by comparing its pension benefit obligation (PBO) to the net assets available to fund benefits. Each system is to analyze its funding progress by following the trend of its funding status.

The pension benefit obligation (PBO) is that portion of the actuarial present value of benefits attributable to service earned to date, adjusted for the effects of projected salary increases. It is intended as a standardized disclosure measure which will allow comparisons among different public employee retirement systems. The determination of the PBO is independent of the actuarial cost method, but is dependent upon the actuarial assumptions used to calculate the actuarial present values.

The PBO determined as of July 1, 1994 is shown in Table 7 and is based on the actuarial assumptions used in the valuation as described in Appendix A. It is analyzed separately for inactive members and annuitants and for active members. The active members' PBO is also divided between the employee-financed (accumulated member contributions) and employer-financed portions, with the employer-financed portion shown separately for benefits payable to vested and nonvested members.

The unfunded PBO is the excess of the PBO over the net assets available for benefits, determined in accordance with the method used to value assets for the System's balance sheet purposes. The net asset amount shown on line B was furnished to us, without audit, by the System. The unfunded PBO is shown on line C.

As shown in Table 8, the unfunded PBO has decreased from 141.2% of annual salaries as of July 1, 1993 to 133.2% of annual salaries as of July 1, 1994. The unfunded PBO expressed as a percentage of annual salaries helps to adjust for the effects of salary inflation in the dollar amounts of PBO.

The comparability of the data from year to year can be affected by changes in actuarial assumptions, benefit provisions, accounting policies, etc. Specifically, the July 1, 1994 PBO was based on the newly adopted assumptions, whereas the July 1, 1993 PBO was based on the previous assumptions. As a result of the change in assumptions, we estimate that the present value of the PBO is reduced by approximately 6%.

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Table 7

**Unfunded Pension Benefit Obligation
(All dollar amounts in millions)**

	<u>July 1, 1994</u>	<u>July 1, 1993**</u>
A. Pension benefit obligation		
Inactive members		
Retirees and beneficiaries	\$ 736,051,087	\$ 634,549,416
Other terminated employees	<u>32,518,975</u>	<u>33,778,152</u>
Total Inactive	\$ 768,570,062	\$ 668,327,568
Active members		
Accumulated member contributions	\$ 459,775,565	\$ 439,208,159
Employer-financed vested	342,269,591	424,421,945
Employer-financed nonvested	<u>15,485,479</u>	<u>21,111,397</u>
Total Active	<u>817,530,635</u>	<u>884,741,501</u>
Total pension benefit obligation	\$ 1,586,100,697	\$ 1,553,069,069
B. Less net assets available for benefits*	<u>999,593,170</u>	<u>924,131,095</u>
C. Unfunded pension benefit obligation	\$ 586,507,527	\$ 628,937,974

**Assets are valued at cost for the System's balance sheet purposes. Net assets are total assets less fund liabilities. Market value of net assets on January 1, 1994 is \$1,136,361,547.*

***July 1, 1993 values were based on the June 30, 1992 census, projected to July 1, 1993 on an approximate basis.*

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Table 8

**Analysis of Funding Progress
(All dollar amounts in millions)**

Reporting Date (July 1)	(1) Net Assets*	(2) Pension Benefit Obligation(PBO)	(3) Percentage of PBO Funded (1)/(2)	(4) Unfunded PBO (2)-(1)	(5) Annual Salaries	(6) Unfunded PBO as Percentage of Annual Salaries (4)/(5)
1989	624,755,142	1,107,492,899	56.4%	\$482,737,757	\$362,464,600	133.2%
1990	689,225,147	1,206,792,010	57.1	517,566,863	396,235,432	130.6
1991	761,462,699	1,320,000,000	57.7	558,537,301	404,256,229	138.2
1992	839,020,635	1,449,482,394	57.9	610,461,759	425,125,516	143.6
1993	924,131,095	1,553,069,069	59.5	628,937,974	445,390,838	141.2
1994	999,593,170	1,586,100,697	63.0	586,507,527	440,462,948	133.2

**Assets are valued at cost for the System's balance sheet purposes. Net assets are total assets less fund liabilities.*

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Appendix A

Actuarial Procedures and Assumptions

The actuarial assumptions used in this valuation were adopted by the Board for the July 1, 1994 Actuarial Valuation. The assumptions were changed as a result of our Investigation of Experience, July 1, 1989 - June 30, 1992. These assumptions are summarized in Table A-1.

Tables A-2 through A-5 give rates of decrement for service retirement, disablement, mortality, and other terminations of employment. These rates of decrement are referred to in actuarial literature as the absolute rate of decrement, or q'_x . Table A-6 shows the assumed probability of immediate refund of contributions among members terminating with five or more years of service.

Actuarial Cost Method

The actuarial valuation was prepared using the entry age actuarial cost method. Under this method, the actuarial present value of the projected benefits of each individual included in the valuation is allocated as a level percentage of the individual's projected compensation between entry age and assumed exit. The portion of this actuarial present value allocated to a valuation year is called the normal cost. The normal cost was first calculated for each individual member. The normal cost rate was defined to equal the total of the individual normal costs, divided by the total pay rate as of July 1, 1994.

The portion of this actuarial present value not provided for at a valuation date by the sum of (a) the actuarial value of the assets, and (b) the actuarial present value of future normal costs is called the unfunded actuarial liability. The unfunded actuarial liability is amortized as a level percentage of the projected salaries of present and future members of the System.

Records and Data

The data used in the valuation consist of financial information; records of age, sex, service, salary, contribution rates, and account balances of contributing members; and records of age, sex, and amount of benefit for retired members and beneficiaries. All of the data were supplied by the System and are accepted for valuation purposes without audit.

Replacement of Terminated Members

The ages at entry and distribution by sex of future members are assumed to average the same as those of the present members they replace. If the number of active members should increase, it is further assumed that the average entry age of the larger group will be the same, from an actuarial standpoint, as that of the present group. Under these assumptions, the normal cost rates for active members will not vary with the termination of present members.

Employer Contributions

At the time of this valuation, the total employer contribution rate for normal costs and amortization of the unfunded actuarial liability was 7.470% of members' salaries.

Administrative Expense

The administrative expenses of the System are assumed to be funded by investment earnings in excess of 8% per year.

Valuation of Assets - Cost Basis

Bonds: Bonds are valued at amortized book value.

Mortgages: Mortgages are valued at par value.

Common Stocks: Each issue of common stock is valued at cost.

Other Assets: Other assets are carried on a book (cost) basis.

Premiums and discounts are amortized using the straight-life method over the life of the securities (8 years for mortgages).

Valuation of Assets - Actuarial Basis

The difference between the total market value of assets and the cost value of assets is added to the cost value on a 3-year smoothed basis.

Investment Earnings

The annual rate of investment earnings of the assets of the System is assumed to be 8% per year, compounded annually.

Interest on Member Contributions

Interest on member contributions is assumed to accrue at a rate of 7% per annum, compounded annually.

Postretirement Benefit Increases

No future postretirement benefit increases are assumed.

Future Salaries

The composite rate of future salary increases is assumed to be 6.5% per year, compounded annually. This is the sum of a 6.0% general wage increase assumption and an assumption of 0.5% individual salary increase due to promotion and longevity. This assumption was adopted July 1, 1994.

Service Retirement

Table A-2 shows the annual assumed rates of retirement among members eligible for service retirement. Separate rates are used when a member is eligible for reduced benefits, for the first year a member is eligible for full benefits, and for the years following the first year a member is eligible for full benefits. These rates were adopted July 1, 1994.

Disablement

The rates of disablement used in this valuation are illustrated in Table A-3. These rates were adopted July 1, 1994.

Mortality

The mortality rates used in this valuation are illustrated in Table A-4. A written description of each table used is included in Table A-1.

Other Terminations of Employment

The rates of assumed future withdrawal from active service for reasons other than death, disability or retirement are shown for representative ages in Table A-5. These rates were adopted July 1, 1994.

Benefits for Terminating Members

Members terminating with less than five years of service are assumed to request an immediate withdrawal of their contributions with interest. Table A-6 shows the assumed probability of immediate refund of contributions among members terminating with five or more years of service. These rates were adopted July 1, 1994.

The data provided for current terminated vested members did not include their accrued benefit. We estimated each member's accrued benefit based on the available contribution account and service information.

Part-Time Employees

The valuation data for active members identify part-time members, but give no indication as to the number of hours worked. As done in the past, we imputed a "part-time percentage" by comparing the pay received to the average pay for recently hired full-time members. Part-time members earning less than \$1,000 during the last year were valued at their current member contribution balance.

Optional Retirement Program

The total contribution received based on ORP payroll for the fiscal year ending June 30, 1994 was \$787,837. Based on a contribution rate of 2.503%, we assumed the total ORP payroll for the fiscal year to be \$31,475,709 (\$787,837 divided by 2.503%).

**Teachers' Retirement System
State of Montana**

Table A-1

Summary of July 1, 1994 Valuation Assumptions

I. Economic assumptions

A. General wage increases	6.00%
B. Individual salary increase due to promotion and longevity	0.50%
C. Investment return	8.00%
D. Growth in membership	0.00%
E. Postretirement benefit increases	0.00%
F. Interest on member accounts	7.00%

II. Demographic assumptions

A. Retirement	Table A-2
B. Disablement	Table A-3
C. Mortality among contributing members	Table A-4
1983 Group Annuity Mortality (GAM) Table, with ages set back two years	
D. Mortality among service retired and disabled members and beneficiaries	Table A-4
1983 GAM Table, with ages set back one year.	
E. Other terminations of employment	Table A-5
F. Refund of contributions upon termination of vested members	Table A-6

**Teachers' Retirement System
State of Montana**

Table A-2

Retirement

Annual Rates

<u>Age</u>	<u>Eligible for Reduced Benefits</u>	<u>First Year Eligible for Full Benefits</u>	<u>Thereafter</u>
50	5.0%	15.4%	10.0%
51	5.3	15.6	10.0
52	5.6	15.8	10.0
53	6.0	16.1	10.0
54	6.3	16.4	10.0
55	6.7	16.9	12.5
56	7.1	17.4	12.5
57	7.5	18.2	12.5
58	8.0	19.1	12.5
59	8.5	20.4	12.5
60	*	22.0	20.0
61		22.0	20.0
62		22.0	20.0
63		22.0	20.0
64		22.0	20.0
65		22.0	20.0
66		22.0	20.0
67		22.0	20.0
68		22.0	20.0
69		22.0	20.0
70		**	**

**All benefits are unreduced after attaining age 60.*

***Immediate retirement is assumed at age 70 or over.*

Teachers' Retirement System
State of Montana

Table A-3

Disablement

Annual Rates

<u>Age</u>	<u>Disablement</u>
25	.01%
30	.02
35	.04
40	.07
45	.12
50	.18
55	.28
60	.42

Teachers' Retirement System
State of Montana

Table A-4

Mortality

Annual Rates*

Age	Men	Women
25	.05%	.03%
30	.06	.03
35	.09	.05
40	.12	.07
45	.22	.10
50	.39	.16
55	.61	.25
60	.92	.42
65	1.56	.71
70	2.75	1.24
75	4.46	2.40
80	7.41	4.29
85	11.48	6.99

**Rates shown are set back one year for retirees and two years for active members.*

**Teachers' Retirement System
State of Montana**

Table A-5

**Other Terminations of Employment
Among Members Not Eligible to Retire**

Annual Rates

<u>Age</u>	<u>Rates</u>
25	13.78%
30	11.41
35	8.30
40	5.84
45	4.19
50	3.60
55	3.02
60	2.67

Teachers' Retirement System
State of Montana

Table A-6

Refund of Contributions Upon Termination of Vested Members

<u>Age</u>	<u>Probabilities of Immediate Refund</u>
25	60%
30	54
35	48
40	42
45	36
50	24
55	0

**Teachers' Retirement System
State of Montana**

Appendix B

Summary of Benefit Provisions

Effective Date	September 1, 1937
Vesting Period	5 years. No benefits are payable unless the member has a vested right, except the return of employee contributions with interest.
Final Compensation	Average of highest 3 consecutive years of earned compensation.
Normal Form of Benefits	Life only annuity. All benefits cease upon death; however, in no event will the member receive less than the amount of employee contributions with interest.
Normal Retirement Benefits	
Eligibility:	25 years of service or age 60 and 5 years of service.
Benefit:	The retirement benefit is equal to 1/60 of final compensation for each year of service.
Early Retirement Benefits	
Eligibility:	5 years of service and age 50.
Benefit:	The retirement benefit is calculated in the same manner as described for normal retirement, but the benefit is reduced 1/2 of 1% for each of the first 60 months early and 3/10 of 1% for each of the next 60 months early.
Death Benefit	
Eligibility:	5 years of service.
Benefit:	The death benefit is equal to 1/60 of final compensation for each year of service accrued at date of death, with an actuarial adjustment based on the relation of the member's age at death to the beneficiary's age. A monthly benefit of \$200 is paid to each child until age 18. In addition, a lump-sum benefit of \$500 is paid upon the death of an active or retired member.

Disability Benefit

Eligibility: 5 years of service.

Benefit: The disability benefit is equal to 1/60 of final compensation for each year of service accrued at date of disability. The minimum benefit is 1/4 of the final compensation.

Withdrawal Benefits

With less than 5 years of service, the accumulated employee contributions with interest are returned. With more than 5 years, the member may elect a refund of contributions with interest or leave the contributions and interest in the System and retain a vested right to retirement benefits.

Tax Sheltered Annuity

The System sponsors a tax-deferred annuity program for the benefit of its members. The policies of this program have been established in accordance with the guidelines set by the Internal Revenue Service. The benefits provided by this program are determined solely by the value of the member's account (voluntary contributions plus interest) using actuarial tables provided by the Retirement Board.

Contributions

Member: 7.044% of compensation.
Employer: 7.470% of compensation.

**Teachers' Retirement System
State of Montana**

Appendix C

Valuation Data

This valuation is based upon the membership of the System as of July 1, 1994. Membership data were supplied by the System and accepted for valuation purposes without audit. However, tests were performed to ensure that the data are sufficiently accurate for valuation purposes.

Table C-1 contains summaries of the data for contributing members. For full-time members, values shown in the tables are the numbers of members and their total and average annual salaries. For part-time members, only the numbers of members are shown. All information is shown separately for males and females.

Members	Full-Time Members	Part-Time Members*	Total Contributing Members*	Annual Full- Time Salaries in Thousands
Male	5,470	407	5,877	\$ 181,511
Female	<u>9,468</u>	<u>1,853</u>	<u>11,321</u>	<u>235,457</u>
Total	14,938	2,260	17,198	\$ 416,968

**Excludes 377 part-time members with salaries under \$1,000.*

Table C-2 presents distributions of the following:

- Members receiving service retirement benefits.
- Members receiving disability retirement benefits.
- Survivors of deceased retired members receiving benefits.
- Survivors of deceased active members.
- Child beneficiaries.
- Terminated vested members.

The valuation also includes liabilities attributable to nonvested members who have terminated employment but have not withdrawn their contributions. There are 5,722 such members.

Type of Annuitant	Number	Annual Benefits in Thousands
Service Retirement		
Male	2,820	\$ 41,162
Female	3,695	30,423
Disability Retirement		
Male	79	656
Female	130	776
Survivors of Deceased Retired Members		
Male	64	312
Female	346	2,570
Survivors of Deceased Active Members		
Male	104	440
Female	249	1,741
Child Beneficiaries	<u>43</u>	<u>103</u>
Total Annuitants	7,530	\$ 78,183

Teachers Retirement System - State of Montana
Active Members - Full Time
Distribution Of Employees and Salaries as of July 1, 1994

Number of Employees - By Age Group - Males

Age	Completed Years of Service												Totals	
	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+		
< 25	6	20	4	1										31
25 to 29	61	116	98	90	46									411
30 to 34	22	42	54	102	174	40								434
35 to 39	18	46	40	86	191	232	76							689
40 to 44	15	46	27	62	161	219	346	120						996
45 to 49	21	34	41	61	103	152	226	560	140					1,338
50 to 54	14	17	14	31	56	66	87	208	390	60				943
55 to 59	8	7	7	19	27	35	27	58	119	120	18			445
60 to 64	2	4	3	4	10	17	9	16	28	34	28	1		156
65 to 69	1	1			3	2	1	6	3	1	1			19
70 and up	1	1		2	1		1	1				1		8
Totals	169	334	288	458	772	763	773	969	680	215	47	2		5,470

Annual Salaries in Thousands - By Age Group - Males

Age	Completed Years of Service												Totals	
	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+		
< 25	23	385	81	25										514
25 to 29	239	2,178	2,050	2,009	1,139									7,614
30 to 34	55	915	1,189	2,365	4,710	1,208								10,442
35 to 39	137	989	987	2,203	5,446	7,403	2,601							19,767
40 to 44	32	920	593	1,651	4,702	7,465	12,636	4,441						32,440
45 to 49	159	899	1,255	1,786	3,277	5,722	8,551	21,574	5,511					48,735
50 to 54	116	470	388	927	1,823	2,446	3,563	8,558	15,823	2,437				36,552
55 to 59	42	214	258	734	867	1,379	1,113	2,293	5,213	4,929	729			17,771
60 to 64	1	130	101	125	345	668	314	669	1,277	1,643	1,248	55		6,575
65 to 69	0	31			190	61	75	265	166	49	107			945
70 and up	2	1		6	9		51	39				49		157
Totals	804	7,132	6,903	11,831	22,508	26,353	28,903	37,841	27,989	9,059	2,084	104		181,511

Table C-1
(Continued)

Teachers Retirement System - State of Montana
Active Members - Full Time
Distribution Of Employees and Salaries as of July 1, 1994

Average Annual Salary - By Age Group - Males

Age	Completed Years of Service											Totals		
	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39		40+	
< 25	3,824	19,233	20,312	24,811										16,569
25 to 29	3,912	18,772	20,922	22,319	24,763									18,527
30 to 34	2,500	21,781	22,011	23,187	27,068	30,211								24,060
35 to 39	7,622	21,509	24,681	25,616	28,511	31,909	34,225							28,689
40 to 44	2,147	19,990	21,981	26,624	29,202	34,086	36,520	37,012						32,570
45 to 49	7,554	26,444	30,612	29,284	31,820	37,644	37,838	38,526	39,361					36,424
50 to 54	8,251	27,654	27,738	29,917	32,554	37,059	40,950	41,145	40,573	40,621				38,761
55 to 59	5,205	30,590	36,808	38,638	32,113	39,413	41,216	39,540	43,809	41,077	40,480			39,936
60 to 64	412	32,406	33,515	31,150	34,524	39,317	34,842	41,798	45,591	48,325	44,587	55,479		42,148
65 to 69	273	31,167			63,384	30,670	74,957	44,204	55,242	48,989	107,362			49,747
70 and up	1,584	1,450		3,017	8,874		51,044	39,015				48,863		19,608
Totals	4,760	21,352	23,967	25,832	29,155	34,539	37,391	39,051	41,161	42,133	44,350	52,171		33,183

Table C-1
(Continued)

Teachers Retirement System - State of Montana
Active Members - Full Time
Distribution Of Employees and Salaries as of July 1, 1994

Number of Employees - By Age Group - Females

Age	Completed Years of Service												Totals	
	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+		
< 25	38	89	25											152
25 to 29	181	221	166	240	97									905
30 to 34	71	116	99	189	397	127								999
35 to 39	86	117	95	177	369	427	98							1,369
40 to 44	100	124	110	255	445	411	468	191						2,104
45 to 49	62	85	107	195	388	312	303	423	111					1,986
50 to 54	43	31	40	73	167	183	210	190	197	43				1,177
55 to 59	22	9	14	34	54	62	100	107	89	42	17			550
60 to 64	6	5	3	5	10	23	30	29	39	22	10	5		187
65 to 69		3	1	2	4	1	4	2	5	6	3			31
70 and up	1		1	1	1		1		2			1		8
Totals	610	800	661	1,171	1,932	1,546	1,214	942	443	113	30	6		9,468

Annual Salaries in Thousands - By Age Group - Females

Age	Completed Years of Service												Totals	
	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+		
< 25	181	1,501	455											2,137
25 to 29	673	3,615	3,052	4,841	2,124									14,304
30 to 34	268	1,789	1,771	3,812	9,267	3,395								20,302
35 to 39	465	1,726	1,667	3,550	8,516	12,157	3,062							31,143
40 to 44	416	1,658	1,820	5,189	10,842	12,100	15,196	6,771						53,990
45 to 49	199	1,135	1,866	4,006	9,713	9,510	10,209	14,960	4,092					55,688
50 to 54	193	360	771	1,472	4,223	5,558	7,044	6,674	7,275	1,535				35,104
55 to 59	72	90	208	581	1,238	1,785	3,097	3,724	3,157	1,536	621			16,110
60 to 64	17	16	55	92	223	691	913	988	1,419	767	350	165		5,696
65 to 69		51	0	5	63	35	117	72	183	191	112			830
70 and up	4		6	3	7		13		84			36		152
Totals	2,488	11,941	11,671	23,549	46,216	45,232	39,650	33,189	16,210	4,029	1,083	200		235,457

Table C-1
(Continued)

Teachers Retirement System - State of Montana
Active Members - Full Time
Distribution Of Employees and Salaries as of July 1, 1994

Average Annual Salary - By Age Group - Females

Age	Completed Years of Service											Totals		
	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39		40+	
< 25	4,762	16,865	18,188											14,057
25 to 29	3,719	16,357	18,385	20,169	21,895									15,806
30 to 34	3,781	15,420	17,887	20,170	23,344	26,730								20,322
35 to 39	5,409	14,752	17,544	20,054	23,080	28,470	31,249							22,749
40 to 44	4,161	13,368	16,545	20,347	24,363	29,440	32,470	35,449						25,661
45 to 49	3,203	13,351	17,438	20,542	25,033	30,481	33,692	35,367	36,865					28,040
50 to 54	4,479	11,605	19,278	20,166	25,289	30,374	33,541	35,127	36,928	35,688				29,825
55 to 59	3,260	10,054	14,884	17,092	22,922	28,794	30,972	34,805	35,469	36,571	36,528			29,291
60 to 64	2,904	3,248	18,414	18,316	22,263	30,060	30,426	34,077	36,378	34,876	34,984	32,923		30,460
65 to 69		17,163	93	2,674	15,662	35,399	29,153	35,867	36,656	31,873	37,373			26,773
70 and up	3,545		6,041	2,691	6,925		13,162		42,078			35,636		19,020
Totals	4,078	14,926	17,656	20,110	23,921	29,257	32,661	35,233	36,591	35,656	36,098	33,375		24,869

Table C-1
(Continued)

Teachers Retirement System - State of Montana
Active Members - Part Time
Distribution Of Employees and Salaries as of July 1, 1994

Number of Employees - By Age Group - Males

Age	Completed Years of Service											Totals	
	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39		40+
< 25	16	3	4										23
25 to 29	68	27	4	1	1								101
30 to 34	16	8	6	3	6	1							40
35 to 39	15	8	5	2	10	7							47
40 to 44	7	11	7	13	9	5	8	3					63
45 to 49	8	6	1	5	5	5	7	7	4				48
50 to 54	6	3	1	4	7	5	2	7	5				40
55 to 59	4	1		1		1	2	2	6	4			21
60 to 64	1	3	1	1	3	2	2		3	4	1		21
65 to 69		1											1
70 and up			1						1				2
Totals	141	71	30	30	41	26	21	19	19	8	1	0	407

Number of Employees - By Age Group - Females

Age	Completed Years of Service											Totals	
	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39		40+
< 25	43	12	10	1									66
25 to 29	128	64	27	19	10								248
30 to 34	53	42	22	24	27	17	1						186
35 to 39	68	48	44	67	45	34	9						315
40 to 44	71	79	50	87	68	28	22	16					421
45 to 49	44	42	52	59	50	26	19	17	7				316
50 to 54	26	15	24	30	28	24	11	8	3	4			173
55 to 59	6	4	9	12	16	11	6	4	4		1		73
60 to 64			1	8	11	3	7	3		2	1		36
65 to 69		4	2	2	3	1	1	1					14
70 and up			1	1	3								5
Totals	439	310	242	310	261	144	76	49	14	6	2	0	1,853

Total of Above	2,260
Part Time Participants with Salary Less Than \$1,000	377
Total Part Time Participants	2,637

Table C-2

**Teachers Retirement System - State of Montana
Distribution of Inactive Lives**

Members Receiving Service Retirement Benefits as of July 1, 1994

Age	Number of Persons		Annual Benefits in Thousands		Average Annual Benefits	
	Male	Female	Male	Female	Male	Female
<50	35	22	590	350	16,845	15,922
50 to 54	262	146	4,325	1,938	16,507	13,274
55 to 59	430	268	7,710	3,568	17,930	13,313
60 to 64	617	428	10,426	4,739	16,897	11,071
65 to 69	536	504	7,996	5,182	14,919	10,282
70 to 74	414	513	5,604	4,166	13,536	8,122
75 to 79	252	587	2,533	4,129	10,050	7,033
80 to 84	150	539	1,252	2,942	8,349	5,459
85 to 89	81	446	472	2,168	5,828	4,862
90 and up	43	242	254	1,240	5,915	5,124
Total	2,820	3,695	41,162	30,423	14,596	8,233

Members Receiving Disability Retirement Benefits as of July 1, 1994

Age	Number of Persons		Annual Benefits in Thousands		Average Annual Benefits	
	Male	Female	Male	Female	Male	Female
<50	9	10	69	64	7,642	6,423
50 to 54	11	10	95	68	8,610	6,846
55 to 59	14	19	116	166	8,318	8,715
60 to 64	12	11	120	68	10,039	6,143
65 to 69	12	18	93	116	7,720	6,440
70 to 74	7	17	62	84	8,882	4,953
75 to 79	9	23	63	102	6,984	4,415
80 to 84	4	10	34	51	8,498	5,061
85 to 89	1	7	4	32	4,280	4,578
90 and up		5		26		5,189
Total	79	130	656	776	8,308	5,970

Table C-2
(continued)

Teachers Retirement System - State of Montana
Distribution of Inactive Lives

Survivors of Deceased Retired Members as of July 1, 1994

Age	Number of Persons		Annual Benefits in Thousands		Average Annual Benefits	
	Male	Female	Male	Female	Male	Female
<50	7	12	30	67	4,298	5,590
50 to 54	4	7	15	91	3,758	12,964
55 to 59	5	15	17	146	3,486	9,736
60 to 64	6	28	45	292	7,569	10,420
65 to 69	5	39	26	360	5,218	9,219
70 to 74	9	70	51	517	5,622	7,389
75 to 79	5	49	26	415	5,285	8,469
80 to 84	14	54	62	298	4,401	5,514
85 to 89	4	52	18	279	4,539	5,370
90 and up	5	20	21	106	4,294	5,292
Total	64	346	312	2,570	4,880	7,428

Survivors of Deceased Active Members as of July 1, 1994

Age	Number of Persons		Annual Benefits in Thousands		Average Annual Benefits	
	Male	Female	Male	Female	Male	Female
<50	36	58	117	243	3,257	4,195
50 to 54	13	27	45	258	3,476	9,568
55 to 59	7	24	28	178	3,980	7,418
60 to 64	6	31	39	280	6,508	9,030
65 to 69	13	32	65	293	5,013	9,156
70 to 74	10	34	56	265	5,605	7,797
75 to 79	5	13	23	61	4,556	4,654
80 to 84	2	16	10	89	5,037	5,578
85 to 89	2	8	10	39	5,139	4,826
90 and up	10	6	46	35	4,650	5,833
Total	104	249	440	1,741	4,233	6,992

Table C-2
(continued)

**Teachers Retirement System - State of Montana
Distribution of Inactive Lives**

**Terminated Vested Members as of July 1, 1994
Number of Persons**

Age	Male	Female	Total
<25		1	1
25 to 30		2	2
30 to 35	14	54	68
35 to 40	36	133	169
40 to 45	68	160	228
45 to 50	100	154	254
50 to 55	76	122	198
55 to 60	62	74	136
60 to 65	18	21	39
65 and up	4	6	10
Total	378	727	1,105

There were 8 records without a date of birth and 9 records included in the active data for a total of 1,122 records.

**Child Beneficiaries as of July 1, 1994 *
Number of Persons**

Age	Number
<5	
5 to 6	1
7 to 8	3
9 to 10	3
11 to 12	5
13 to 14	11
15 to 16	8
17 and up	12
Total	43

* Child Beneficiaries all receive \$200 per month, for a total of \$103,200 per year.

**Teachers' Retirement System
State of Montana**

Appendix D

Comparative Schedules

This section contains tables that summarize the experience of the System shown in present and past valuation reports.

Table D-1 shows a summary of the active members and the annuitants covered as of the various valuation dates.

Table D-2 summarizes the contribution rates determined by each annual actuarial valuation.

Teachers' Retirement System State of Montana

Table D-1

Membership Data

Valuation Date (July 1)	Active Members						
	Full-Time Members	Part-Time Members	Total Contributing Members	Annual Full- Time Salaries in Thousands	Average Full- Time Annual Salary	Average Age	Average Years of Service
1987	13,105	1,955	15,060	\$340,481	\$25,981	*	*
1989	12,546	2,541	15,087	339,866	27,090	*	*
1992	13,502	3,141	16,643	401,092	29,706	42.4	11.6
1994	14,938	2,637	17,575	416,968	27,914	42.5	11.0

Valuation Date (July 1)	Annuitants		
	Number	Annual Benefits in Thousands	Average Annual Benefit
1987	6,036	\$43,236	\$7,163
1989	6,330	49,546	7,827
1992	6,927	63,483	9,165
1994	7,530	78,183	10,383

**Not available.*

MILLIMAN & ROBERTSON, INC.

Teachers' Retirement System State of Montana

Table D-2

Contribution Rates

Valuation Date (July 1)	Normal Cost Rate		UAL Rate	Total Employer Rate	Total Rate
	Employee	Employer			
1989*	7.044%	1.783%	5.676%	7.459%	14.503%
1992	7.044%	2.832%	4.627%	7.459%	14.503%
1994	7.044%	2.450%	5.020%	7.470%	14.514%

**Valuation performed by Hendrickson, Miller & Associates, Inc.*

MILLIMAN & ROBERTSON, INC.

**Teachers' Retirement System
State of Montana**

Appendix E

Glossary

The following definitions are largely excerpts from a list adopted in 1981 by the major actuarial organizations in the United States. In some cases the definitions have been modified for specific applicability to the Teachers' Retirement System Retirement System. Defined terms are capitalized throughout this Appendix.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement, and retirement; changes in compensation, rates of investment earnings, and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; and other relevant items.

Actuarial Cost Method

A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Liability.

Actuarial Gain (Loss)

A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.

Actuarial Present Value

The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions.

Actuarial Valuation

The determination, as of a valuation date, of the Normal Cost, Actuarial Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.

Actuarial Value of Assets

The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an Actuarial Valuation.

Actuarially Equivalent

Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.

Amortization Payment

That portion of the pension plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Liability.

Entry Age Actuarial Cost Method

A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a valuation date by the Actuarial Present Value of future Normal Costs is called the Actuarial Liability.

Normal Cost

That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

Actuarial Liability

That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.

Unfunded Actuarial Liability

The excess of the Actuarial Liability over the Actuarial Value of Assets.

Accrued Benefit

The amount of an individual's benefit (whether or not vested) as of a specific date, determined in accordance with the terms of a pension plan and based on compensation and service to that date.

Projected Benefits

Those pension plan benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits.

Unaccrued Benefit

The excess of an individual's Projected Benefits over the Accrued Benefits as of a specified date.