

#### ARKANSAS TEACHER RETIREMENT SYSTEM

ANNUAL ACTUARIAL VALUATION OF ACTIVE AND INACTIVE MEMBERS
JUNE 30, 2007

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November 21, 2007

Board of Trustees Arkansas Teacher Retirement System Little Rock, Arkansas

The results of the annual actuarial valuation of non-retired members as of June 30, 2007 are presented in this report. This valuation is based upon the Arkansas Teacher Retirement System laws, as described in Section C of this report.

The census and financial operations data necessary for the actuarial valuation were furnished by the Retirement System. Preparation of this data requires considerable staff time. The helpful cooperation of the Executive Director and his staff in furnishing the data is acknowledged with appreciation.

*Liabilities Covering Retirees and Beneficiaries*. The June 30<sup>th</sup> annual valuation of retired lives receiving monthly benefits indicates the liabilities for future benefit payments to existing retirees. These liabilities are covered in a separate report.

*The actuarial assumptions* used in the actuarial valuation are summarized in the Appendix of this report. These assumptions reflect experience during the period July 1, 1997 to June 30, 2002.

The valuation was completed using generally accepted actuarial principles and in accordance with standards of practice prescribed by the Actuarial Standards Board. To the best of our knowledge, this report is complete and accurate and the methods and assumptions produced results which are reasonable.

Respectfully submitted,

Brian B. Murphy, FSA, MAAA

Judith A. Kermans, EA, MAAA

JAK:mrb

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EXECUTIVE SUMMARY

#### **EXECUTIVE SUMMARY**

*General Financial Objective*. Section 24-3-103 of the Arkansas Code provides as follows (emphasis added):

"6.01. (1) The general financial objective of each Arkansas public employee retirement plan shall be to establish and receive contributions which, expressed as percents of active member payroll, will remain approximately level from generation to generation of Arkansas citizens. More specifically, contributions received each year shall be sufficient both to (i) fully cover the costs of benefit commitments being made to members for their service being rendered in such year and (ii) make a level payment which if paid annually over a reasonable period of future years will fully cover the unfunded costs of benefit commitments for service previously rendered....."

Arkansas Teacher Retirement System Status: Based upon the results of June 30, 2007 actuarial valuations, ATRS is satisfying the financial objective of level-contribution-percent financing.

This report contains the results of the June 30, 2007 valuation. The table below shows a summary of the data used in the valuation. This data was the basis for determining valuation results and recommended employer contribution rates.

	Number	Average	Type of Average
Active not in TDROP	69,226	\$31,645	Pay
Active in TDROP	4,709	57,433	Pay
Deferred Vested	10,689	4,233	Annual Projected Benefit
Retired	25,611	18,920	Annual Current Benefit
<b>Total Members</b>	110,235		

The June 30, 2007 valuation results are used to determine the contribution rate for the plan year beginning July 1, 2008.

Employer Contribution Rate Complied for fiscal year beginning July 1, 2008

	Pero	ents of Active	Member Full Payroll		
<b>Computed Contributions for</b>	Teachers	Support	Combined	Prior Year	
Normal Cost	13.33%	11.39%	12.77%	12.88%	
Average Member Contributions	4.80%	3.54%	4.44%	4.16%	
Net Employer Normal Cost	8.53%	7.85%	8.33%	8.72%	
Unfunded Actuarial Accrued Liabilities			5.67%	5.28%	
<b>Employer Contribution Rate</b>			14.00%	14.00%	
Amortization Years			19.1	36.0	

#### **EXECUTIVE SUMMARY - (CONCLUDED)**

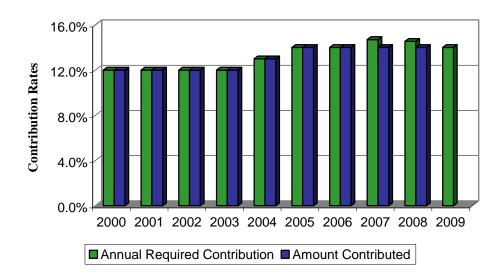
Market investment experience for the year ending June 30, 2007 was favorable. The amortization period this year is 19 years, a decrease from last year's 36-year period. The market value of assets exceeded the actuarial value of assets by \$1,118 million at the valuation. If experience in Fiscal year 2008 is reasonably in line with expectations, the funding period is likely to decrease again next year.

Since the previous actuarial valuation, there were three changes to benefit provisions.

- 1) Act 296 of 2007. Beginning July 1, 2007, beneficiaries of deceased active members or retirees need 10 (formerly 5) or more years of ATRS credited service to be eligible to receive a lump sum benefit. In addition, the lump sum death benefit of \$10,000 payable to each dependent child of a deceased member with 5 or more years of ATRS credited service was removed.
- 2) Act 297 of 2007. For all members retiring on or after July 1, 2008, a minimum of 10 (formerly 5) years of ATRS credited service is required to receive the \$75 per month stipend.
- 3) Act 93 of 2007. Effective July 1, 2007, all noncontributory members may elect to change to contributory status. The election is irrevocable.

The Arkansas Teacher Retirement System is 85.3% funded as of June 30, 2007, indicating a solid financial position and significant progress in recovering from one of the worst investment markets since the Great Depression.

The following graph is a 10 year history of the amount contributed vs. the annual required contribution (ARC).



In the year beginning June 30, 2008, the amount contributed will once again equal the ARC.

### **SECTION B**

**VALUATION RESULTS** 

# EMPLOYER CONTRIBUTION RATE COMPUTED AS OF JUNE 30, 2007 FOR THE FISCAL YEAR BEGINNING JULY 1, 2008

	Percents of Active Member Full Payroll					
Computed Contributions for	Teachers	Support	Combined	Prior Year		
Normal Cost						
Age & Service Annuities	10.76%	8.35%	10.06%	10.12%		
Deferred Annuities	1.29%	1.59%	1.38%	1.44%		
Survivor Benefits	0.29%	0.24%	0.28%	0.29%		
Disability Benefits	0.62%	0.52%	0.59%	0.61%		
Refunds of Member Contributions	0.37%	0.69%	0.46%	0.42%		
Total	13.33%	11.39%	12.77%	12.88%		
Average Member Contributions	4.80%	3.54%	4.44%	4.16%		
Net Employer Normal Cost	8.53%	7.85%	8.33%	8.72%		
Unfunded Actuarial Accrued Liabilities			5.67%	5.28%		
<b>Employer Contribution Rate</b>			14.00%	14.00%		
Amortization Years			19.1	36.0		

The length of an amortization period is a matter of judgment, not a matter of solving an algebraic equation. No one amortization period is "correct" --- there is a range of reasonable judgment. In its pursuit of level-percent contributions, the Teacher Retirement System has used a variety of amortization periods from time to time, extending to 40 years on occasions. Market investment experience was favorable this year for ATRS. As additional unrealized investment gains flow into the valuation over the next year, the amortization period could decrease if investment return continues to be positive.

# COMPUTED EMPLOYER CONTRIBUTION RATES 10 -YEAR COMPARATIVE STATEMENT

	Active Members				Consumer Price		<b>Employer Contribution</b>	
Valuation	in Val	uation			(Infla	ation)	Computed	Total
Date		Annual	Average A	Annual Pay	Inc	dex	Financing	Employer
June 30	Number	Payroll	Amount	% Change	Value	% Change	Period	Rate
1998#*&	58,528	\$1,368	\$23,380	2.3 %	163.0	1.7 %	12	12.0 %
1999#	59,499	1,429	24,019	2.7 %	166.2	2.0 %	4	12.0 %
2000#!	60,147	1,485	24,696	2.8 %	172.4	3.7 %	30	12.0 %
2001	61,389	1,557	25,365	2.7 %	178.0	3.2 %	125	12.0 %
2002&	62,011	1,628	26,254	3.5 %	179.9	1.1 %	38	12.0 %
2003#	62,432	1,683	26,963	2.7 %	183.7	2.1 %	36	13.0 %
2004#	63,185	1,748	27,660	2.6 %	189.7	3.3 %	31	14.0 %
2005	65,793	1,962	29,826	7.8 %	194.5	2.5 %	38	14.0 %
2006	67,710	2,080	30,714	3.0 %	202.9	4.3 %	36	14.0 %
2007	69,226	2,191	31,645	3.0 %	208.4	2.7 %	21	14.0 %
2007#	69,226	2,191	31,645	3.0 %	208.4	2.7 %	19	14.0 %

<sup>\*</sup> Revised financial assumptions.

<sup>#</sup> Legislated benefit or contribution rate changes.

<sup>&</sup>amp; Revised decrement assumptions.

<sup>!</sup> Benefit increases proposed for 2001 and assuming 8% investment return for Fiscal Year Ended 6/30/2001.

# COMPUTED ACTUARIAL LIABILITIES AS OF JUNE 30, 2007

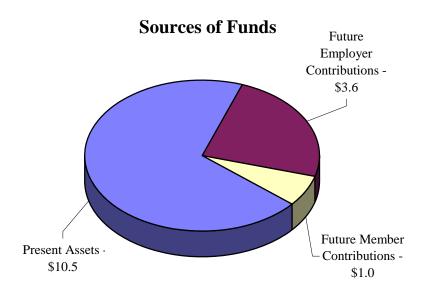
		Entry Age Actuarial Cost Meth		
Actuarial Present Value of	(1) Total Present Value	(2) Portion Covered by Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1)-(2)	
Age and service retirement allowances based on total service likely to be rendered by present active members.	\$ 6,816,251,629	\$2,127,944,455	\$ 4,688,307,174	
Age and service retirement allowances based on total service likely to be rendered by present T-DROP members.	2,155,094,155	36,784,998	2,118,309,157	
Vested Deferred Benefits likely to be paid present active and inactive members.	766,029,469	300,383,699	465,645,770	
Survivor benefits expected to be paid on behalf of present active members.	138,568,126	59,268,122	79,300,004	
Disability Benefits expected to be paid on behalf of present active members.	217,826,046	124,507,396	93,318,650	
Refunds of Member contributions expected to be paid on behalf of Present active members.	17,207,365	93,025,929	(75,818,564)	
Benefits payable to present retirees and beneficiaries.	4,879,922,733	0	4,879,922,733	
Lump Sum Death benefits payable to present retirees and beneficiaries.	79,650,079	0	79,650,079	
Total	\$15,070,549,602	\$2,741,914,599	\$12,328,635,003	
Applicable Assets	10,519,229,198	0	10,519,229,198	
Liabilities to be Covered by Future Contributions	\$ 4,551,320,404	\$2,741,914,599	\$ 1,809,405,805	

# LIABILITIES FOR ANNUITIES BEING PAID JULY 1, 2007 TABULATED BY TYPE OF ANNUITY BEING PAID

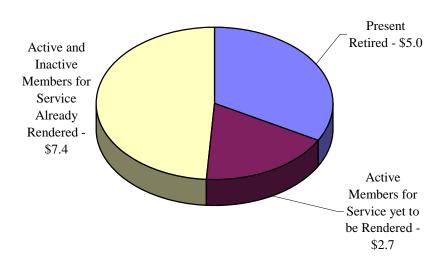
	Liabilities July 1, 2007*			
Type of Annuity	Men	Women	Totals	
RETIREM	ENT RESERVE	ACCOUNT		
Age & Service Annuities				
Option 1 (Straight Life)	\$ 700,413,96		\$ 3,295,451,631	
Option A (100% Joint & Survivor)	334,977,52	· · · · ·	555,031,384	
Option B ( 50% Joint & Survivor)	211,446,56		414,566,510	
Option C (10 Years Certain & Life)	41,659,34	· · · · ·	138,352,751	
Beneficiaries	15,334,10	4 64,156,665	79,490,769	
Total Age & Service	1,303,831,50	7 3,179,061,538	4,482,893,045	
Disability Annuities				
Option 1	33,537,54	· · · · ·	201,232,493	
Option A	15,423,51		33,834,961	
Option B	4,408,00	, , ,	11,807,786	
Option C	1,417,49		6,412,480	
Beneficiaries	13,736,24	9 18,438,482	32,174,731	
m . 15' 1'''	<0. <b>522</b> .00	216020645	205 452 451	
Total Disability	68,522,80	6 216,939,645	285,462,451	
Act 793			17,983,587	
			17,703,307	
Total Retirement Reserve Account			4,786,339,083	
SURVIVO	ORS' BENEFIT A	ACCOUNT		
Beneficiaries of				
Deceased Members	\$ 23,016,46	1   \$ 40,465,104	\$ 63,481,565	
0.5		TEG.		
0.	THER LIABILIT	IES	1	
Act 808			30,102,085	
/ACT 000			30,102,003	
RETIRE	MENT SYSTEM	TOTALS	1	
Total Annuity Liabilities			\$ 4,879,922,733	

<sup>\*</sup> Does not include liabilities associated with lump sum death benefit.

# FINANCING \$15.1 BILLION\* OF BENEFIT PROMISES FOR PRESENT ACTIVE AND RETIRED MEMBERS JUNE 30, 2007



#### **Uses of Funds**



<sup>\*</sup> Present value of future benefits. All amounts are in billions.

#### **SHORT CONDITION TEST**

ATRS' funding objective is to meet long term benefit promises through contributions that remain approximately level from year to year as a percent of member payroll. If the contributions to the System are level in concept and soundly executed, the System will *pay all promised benefits when due -- the ultimate test of financial soundness*. Testing for level contribution rates is *the* long term test.

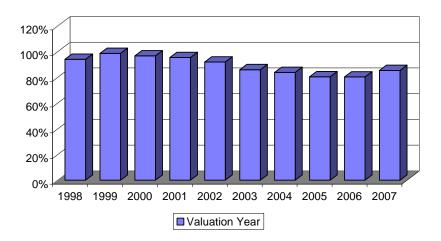
A short condition test is one means of checking a system's progress under its funding program. In a short condition test, the plan's present assets (cash and investments) are compared with: 1) Member contributions on deposit; 2) The liabilities for future benefits to present retired lives; 3) The liabilities for service already rendered by members. In a system that has been following the discipline of level percent-of-payroll financing, the liabilities for member contributions on deposit (liability 1) and the liabilities for future benefits to present retired lives (liability 2) will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by members (liability 3) will be partially covered by the remainder of present assets. The larger the funded portion of liability 3, the stronger the condition of the system. Liability 3 being fully funded is unusual.

The schedule below illustrates the history of liability 3 of the System and is indicative of the ATRS objective of following the discipline of level percent-of-payroll financing.

			(3)					
		(2)	Active and		P	ortion o	f Prese	nt
Val.	(1)	Retirees	Inactive Members	Present	V	alues C	overed l	Эy
Date	Member	and	(Employer	Valuation		Present	t Assets	
June 30	Contrb.	Benef.	Financed Portion)	Assets	(1)	(2)	(3)	Total
			\$ Millions					
1998#	435	2,173	3,553	5,815	100%	100%	90%	94%
1999#	447	2,566	3,821	6,740	100%	100%	98%	99%
2000#	454	2,888	4,537	7,620	100%	100%	94%	97%
2001#	470	3,200	4,891	8,166	100%	100%	92%	95%
2002*	490	3,441	5,131	8,328	100%	100%	86%	92%
2003#	521	3,706	5,218	8,113	100%	100%	74%	86%
2004	547	3,985	5,518	8,424	100%	100%	71%	84%
2005	586	4,276	6,111	8,817	100%	100%	65%	80%
2006	630	4,617	6,376	9,332	100%	100%	64%	80%
2007	679	4,960	6,716	10,519	100%	100%	73%	85%
2007#	679	4,960	6,690	10,519	100%	100%	73%	85%

<sup>\*</sup> Revised actuarial assumptions or methods.

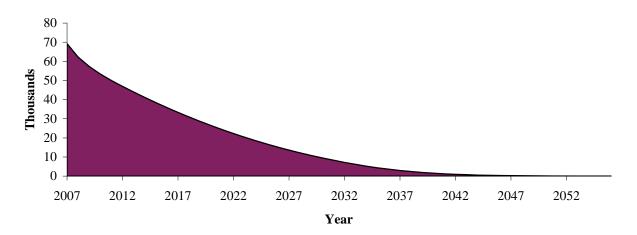
### Actuarial Value of Assets as Percents of Accrued Liabilities (Funded Ratio)

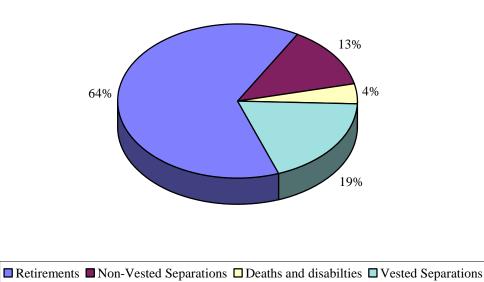


<sup>#</sup> Legislated benefit and contribution rate change.

# EXPECTED DEVELOPMENT OF PRESENT POPULATION JUNE 30, 2007

#### **Closed Group Population Projection**





The charts show the expected future development of the present population in simplified terms. The retirement system presently covers 69,226 active members. Eventually, 13% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. Approximately 83% of the present population is expected to receive monthly retirement benefits either by retiring directly from active service, retiring from T-DROP, or retiring from vested deferred status. Approximately 4% of the present population is expected to become eligible for death-in-service or disability benefits. Within 10 years, over half of the covered membership is expected to consist of new hires.

### **SECTION C**

SUMMARY OF BENEFITS

### SUMMARY OF PROVISIONS JUNE 30, 2007

- 1. **Voluntary Retirement.** A member may retire at age 60 with 5 or more years of credited service, or after 28 years of credited service regardless of age.
- 2. **Early Retirement.** A member who has more than 25 but less than 28 years of credited service and has not attained age 60 years may retire and receive an immediate early retirement annuity. The early annuity is an age & service annuity reduced by the lesser of (i) and (ii) below:
  - (i) 5/12 of 1% multiplied by the number of months by which early retirement precedes completion of 28 years of service or
  - (ii) 5/12 of 1% multiplied by the number of months by which early retirement precedes the attainment of age 60 years.
- 3. **Deferred Retirement.** An inactive member who has 5 or more years of credited service will be entitled to an age & service annuity beginning at age 60, provided accumulated contributions are left on deposit with the retirement system.
- 4. **Disability Retirement.** An active member, with 5 or more years of credited service, who becomes totally and permanently disabled may be retired and receive a disability annuity computed in the same manner as an age & service annuity.
- 5. **Final Average Salary (FAS).** A member's final average salary is the average of the annual salaries paid during the period of 3 years of credited service producing the highest annual average. Beginning 7/1/05, no salary paid in any year which is utilized in the computation of the members' final average salary, shall exceed 110% of the salary earned in the preceding year.
- 6. **Age & Service Annuity and Disability Annuity.** The annuity payable will not be less than the total of: years of contributory service times 2.15% of FAS; plus years of non-contributory service times 1.39% of FAS; plus \$900 for all members with 5 or more years of ATRS credited service. For a member who elected to contribute on only the first \$7,800 of each annual salary after June 30, 1969, each annual salary used in computing FAS is limited to a maximum of \$7,800.

# **SUMMARY OF PROVISIONS JUNE 30, 2007 (CONTINUED)**

- 7. **Minimum Straight Life Annuity.** If a contributory member has 5 or more years of credited service, the straight life annuity will not be less than \$100 per month. The minimum benefit for a non-contributory member is \$64 per month. If a contributory member has 10 or more years of credited service, the straight life annuity will not be less than \$150 per month. The minimum benefit for a non-contributory member is \$94 per month.
- 8. **T-DROP.** A member with 28 or more years of service may participate in the Teacher Deferred Retirement Option Plan (T-DROP, Act 1096 of 1995). An amount equal to the amount that would have been paid had the member retired, reduced by 1% for each year of contributory and 6/10% for each year of non-contributory service, is deposited into a T-DROP account. Members who enter T-DROP with less than 30 years of service are subject to an additional 6% reduction for each year less than 30 years. The annual addition to the T-DROP account is increased each year by 3% of the member's annuity at the initial participation date and the account is credited with 2% less than the system's rate of return (but not less than 2%, nor greater than 6% interest on the mean balance) each year. Deposits and interest to T-DROP cease at the earlier of 10 years of T-DROP participation or separation from service. T-DROP participants may continue in covered employment after 10 years of participation, but do not accumulate additional service credit or make member contributions. Upon actual retirement the member may receive the T-DROP account balance in the form of a lump sum or as an additional annuity.
- 9. **Post-Retirement Increases.** Each July 1, annuities are adjusted to be equal to the base annuity times 100% plus 3% for each full year in the period from the effective date of the base annuity to the current July 1. The base annuity is the amount of the member's annuity on the later of July 1, 2001 or the effective date of retirement, as redetermined by Acts 396 of 1999 and 992 of 1997.
- 10. **Survivor Benefits.** Upon the death of an active member, who has 5 or more years of credited service (which includes the year immediately preceding his death), the following annuities are payable:
  - (a) The surviving spouse receives an annuity computed in the same manner as if the member had (i) retired the date of his death with entitlement to an annuity, (ii) elected Option A 100% Survivor Annuity, and (iii) nominated the spouse as joint

### SUMMARY OF PROVISIONS JUNE 30, 2007 (CONTINUED)

beneficiary. If the member has attained age 60 and has acquired 5 years of credited service or has acquired 20 years of credited service regardless of age, the annuity begins immediately; or, if the member has acquired 15 years of credited service but has not attained age 60, the annuity begins when the spouse is 50; otherwise the annuity begins at age 62. The spouse's annuity cannot be less than the greater of (i) 10% of the deceased member's covered salary at time of death or (ii) \$50 monthly. Under certain circumstances, a lump sum distribution may be made to the beneficiary(ies) of the deceased member.

- (b) Each dependent child receives an annuity of the greater of (i) 10% of covered salary at the time of death or (ii) \$50 monthly; provided, that if there are 3 or more dependent children, each receives an annuity of an equal share of the greater of (i) 25% of covered salary at time of death or (ii) \$125 monthly. A child is dependent until the child's death, marriage, or attainment of age 18 (age 23 if the child is a full-time student).
- (c) If there is neither a spouse nor a dependent child at the time of the member's death, each dependent parent receives an allowance of the greater of (i) 10% of covered salary or (ii) \$50 monthly.
- (d) Survivor benefits based on both contributory and non-contributory service will be prorated between contributory benefits and non-contributory benefits.
- 11. **Lump Sum Death Benefit.** Beneficiaries of deceased active members or retirees with 10 or more years of ATRS credited service are eligible to receive a lump sum death benefit of up to \$10,000 (\$6,667 for non-contributory service-benefit is prorated).
- 12. **Members' Contributions.** Members contribute 6% of their salaries (by individual election, members who became members before July 1, 1971 could contribute on only the first \$7,800 of their annual salaries). If a member leaves service prior to becoming eligible to retire, the accumulated contributions are returned upon request. No interest is credited to a member's contributions for the first year of membership; after 1 year, interest credits are 6% annually. Effective July 1, 1986, a non-contributory plan was created. Effective July 1, 1993, all new members including any former active members were automatically non-contributory members. By individual election, members could choose to contribute. The benefit accrual rate for

#### SUMMARY OF PROVISIONS JUNE 30, 2007 (CONTINUED)

non-contributory members is reduced. Effective July 1, 1999 the default choice for new members is contributory. All current members had until July 1, 2000 to make a final election. Effective July 1, 1997, all future member contributions are tax-deferred in accordance with §414(h) of the Internal Revenue Code of the United States. Effective July 1, 2005, all non-contributory members whose status changes from support to teacher (contracted for more than 181 days), will become contributory. Effective July 1, 2006 and each July 1 thereafter, members who previously elected to be non-contributory may elect to change to contributory status under Act 385 of 2005. Effective July 1, 2007, all noncontributory members may elect to change to contributory status. The election is irrevocable.

- 13. **Act 808 Retirement.** Any employee of a state agency who was an active member of the Arkansas Teacher Retirement System on April 8, 1987, and who qualified for retirement before January 1, 1988, could become a member of the Arkansas Public Employees Retirement System and retire from that system. All credited service was transferred to that system but the member's contributions were retained by the Arkansas Teacher Retirement System and the benefit amount is transferred monthly to the Arkansas Public Employees Retirement System. Each July 1, annuities are adjusted by 3% (compound escalator).
- 14. **Act 793 Retirement.** Any employee who was a member of the rehabilitation services in 1977 was permitted to become a member of the Arkansas Public Employees Retirement System. Liabilities associated with prior service earned through 6/30/1978 remain in the Arkansas Teacher Retirement System. Future service is allocated to the Arkansas Public Employees Retirement System. Each July 1, annuities are adjusted by 3% (compound escalator).
- 15. **Retiree Health Stipend.** Each retired member with 5 or more years of ATRS credited service receives \$75 per month toward retiree health care premiums. Members in T-DROP do not receive the \$75 per month until actual retirement. For all members retiring on or after July 1, 2008, a minimum of 10 years of ATRS credited service is required to receive the \$75 per month stipend.

#### SUMMARY OF PROVISIONS JUNE 30, 2007 (CONCLUDED)

#### 16. Optional Forms of Benefits:

#### **Option 1** (Straight Life Annuity)

A member will receive the maximum monthly benefit for which he/she qualifies, throughout his/her lifetime. No monthly benefits will be paid to his/her beneficiary after the member's death. Should a member die before he/she has drawn in benefits an amount equal to his/her contributions plus earned interest, the balance will be paid to a designated beneficiary. The designated beneficiary may be anyone chosen by the member.

#### Option A (100% Survivor Annuity)

Under this option a member will receive a reduced annuity throughout his/her lifetime. Upon the member's death, the designated beneficiary will receive the same annuity for the balance of his/her lifetime.

#### **Option B** (50% Survivor Annuity)

Under this option a member will receive a reduced annuity throughout his/her lifetime. Upon the member's death, the designated beneficiary will receive one-half (1/2) of this annuity for the balance of his/her lifetime.

#### **Option** C (Annuity for Ten Years Certain and Life Thereafter)

A reduced monthly benefit payable for 120 months. After that time, a member's monthly allowance will revert to the amount he/she would have received under the regular plan and continue for life. If the member dies before receiving 120 payments, the designated beneficiary will receive a monthly benefit in the same amount until monthly benefits to both the member and the beneficiary equal 120 monthly payments. No further benefits are then payable to the beneficiary.

Option Factors are based upon an 8.0% interest rate and the 1971 Group Annuity Mortality Table projected to 1984, with a 75% unisex mix.

# SAMPLE BENEFIT COMPUTATIONS FOR A MEMBER RETIRING JUNE 30, 2007

The data for the Example member is shown below.

A.	\$35,000	Final Average Compensation
B.	32	Total Service Credit
C.	27	Contributory Service Credit
D.	60	Age of Retiree
E.	55	Age of Spouse
F.	100%	Percentage of Retirement Allowance to
		Continue to Spouse after Retiree's Death
		(Retiree Chooses this Percentage)

The computations that would be made for this case are:

		Annual Amount
G.	Non-Contributory Base: 0.0139 x A x B	\$15,568
H.	Extra for Contributory: 0.00760 x A x C	7,182
I.	Total Benefit: G + H	22,750
J.	Adjustment for Line F election:	
	(1 - 0.83037) x I	<u>3,859</u>
K.	Annual Amount Payable	\$18,891

Projected Benefits, taking into account increases after retirement would be:

Year Ended June 30	Annual Amount
2008	\$18,891
2009	19,458
2010	20,025
2011	20,592
2012	21,159

Thereafter, the amount would increase by \$567 annually for life.

# SAMPLE T-DROP BENEFIT COMPUTATIONS FOR A MEMBER ENTERING T-DROP JUNE 30, 2007

The data for the Example member is shown below.

A.	\$35,000	Final Average Compensation
B.	28	Total Service Credit
C.	28	Contributory Service Credit
D.	55	Age of Retiree

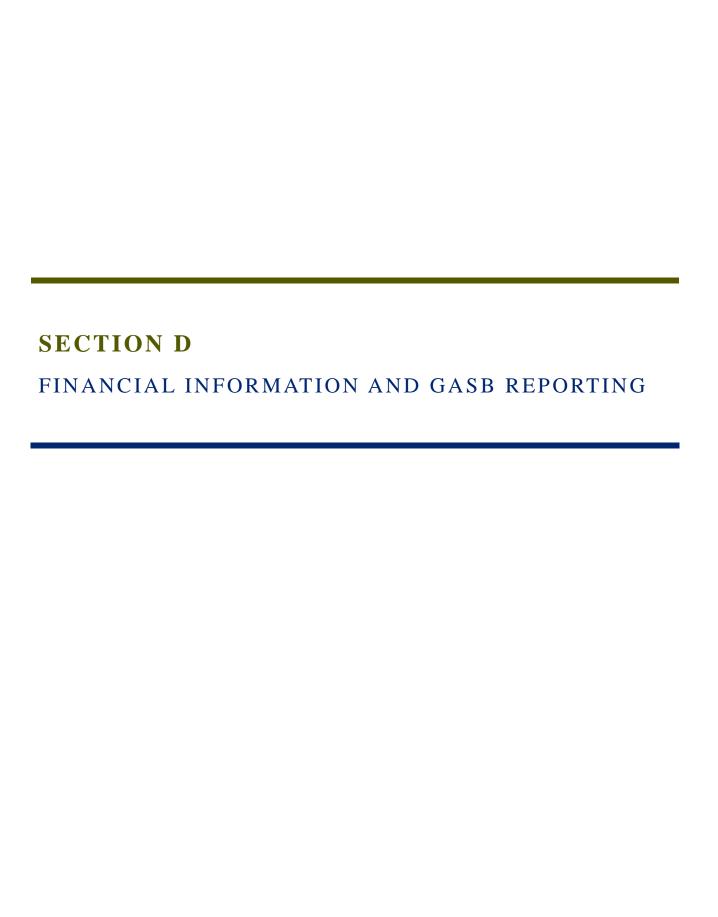
The computations that would be made for this case are:

		Annual Amount
E. F.	Non-Contributory Base: 0.0139 x A x B Extra for Contributory: 0.00760 x A x C	\$13,622 7,448
G.	Reduction for T-DROP Plan: (1% for each year of contributory service) 0.28 x (E+F)	5,900
H.	Reduction for Entering T-DROP with less than 30 years of service (6% for each year less than 30): $0.12 \times (E + F)$	2,528
I.	Annual Amount Payable E + F - G - H	\$12,642

Projected Deposits, taking into account increases after DROP, and 5 years duration would be:

Year Ended June 30	<b>Amount Deposited</b>
2008	\$12,642
2009	13,021
2010	13,400
2011	13,779
2012	14,158
Total	67,000

The total amount deposited, together with credited interest can be paid as a lump sum or as an annuity.



#### ASSET VALUATION METHOD

An essential step in the valuation process is comparing valuation assets with computed liabilities. Valuation assets are those assets that are recognized for funding purposes.

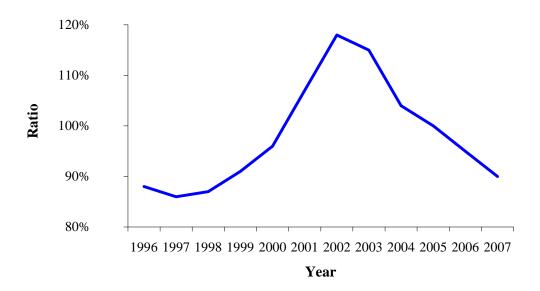
Asset valuation methods are distinguished by the timing of the recognition of investment income. Total investment income is the sum of ordinary income and capital value changes. Under a pure market value approach, ordinary investment income and all capital value changes would be recognized immediately. Because of market volatility, use of pure market values in retirement funding can result in volatile contribution rates and unstable financial ratios, contrary to ATRS objectives.

Under the ATRS asset valuation method (see page D-3), assumed investment return is recognized fully each year. Differences between actual and assumed investment return are phased in over a closed 4-year period. During periods when investment performance exceeds the assumed rate, the funding value will tend to be less than the market value. Conversely, during periods when investment performance is less than the assumed rate, funding value will tend to be greater than market value. If assumed rates are exactly realized for 3 consecutive years, funding value will become equal to market value.

A multi-year comparison of market value to funding (actuarial) value is on the following page.

Valuation Date June 30	Market Value of Assets (1)	Actuarial Value of Assets (2)	Ratio of AV to MV (2) / (1)
1996	\$4,750	\$4,186	88%
1997	5,747	4,956	86%
1998	6,656	5,815	87%
1999	7,403	6,740	91%
2000	7,978	7,620	96%
2001	7,643	8,166	107%
2002	7,084	8,328	118%
2003	7,050	8,113	115%
2004	8,122	8,424	104%
2005	8,811	8,817	100%
2006	9,868	9,332	95%
2007	11,637	10,519	90%

#### **Ratio of Actual Value to Market Value**



This year, the market value of assets exceeds the actuarial value by approximately 5%. To prevent unreasonably large differences between market value and funding value, there is a requirement that the recognized assets must always be between 80% and 120% of the market value (See page D-3).

#### **DEVELOPMENT OF FUNDING VALUE OF ASSETS**

Year Ended June 30:	2005	2006	2007	2008		2009	2010
A. Funding Value Beginning of Year	\$ 8,423,579,265	\$ 8,817,254,313	\$ 9,331,667,789				
B. Market Value End of Year	8,811,146,753	9,868,311,510	11,636,934,713				
C. Market Value Beginning of Year	8,122,004,035	8,811,146,753	9,868,311,510				
D. Non-Investment Net Cash Flow	(83,846,072)	(110,130,248)	(118,415,605)				
E. Investment Return							
E1. Market Total: B - C - D	772,988,790	1,167,295,005	1,887,038,808				
E2. Amount for Immediate Recognition (8%)	670,532,498	700,975,135	741,796,799				
E3. Amount for Phased-In Recognition: E1-E2	102,456,292	466,319,870	1,145,242,009				
F. Phased-In Recognition of Investment Return							
F1. Current Year: 0.25 x E3	25,614,073	116,579,968	286,310,502	J	Jnknown	Unknown	Unknown
F2. First Prior Year	135,675,672	25,614,073	116,579,968	\$ 286	,310,502	Unknown	Unknown
F3. Second Prior Year	(354,301,124)	135,675,672	25,614,073	116	,579,968	\$286,310,502	Unknown
F4. Third Prior Year		(354,301,124)	135,675,672	25	,614,073	116,579,966	\$ 286,310,504
F5. Accelerated Market Value Recognition							
F6. Total Recognized Investment Gain	(193,011,379)	(76,431,411)	564,180,215	428	,504,543	402,890,468	286,310,504
G. Funding Value End of Year:							
G1. Preliminary Funding Value End of Year: A+D+E2+F6	8,817,254,313	9,331,667,789	10,519,229,198				
G2. Upper Corridor Limit: 120% x B	10,573,376,104	11,841,973,812	13,964,321,656				
G3. Lower Corridor Limit: 80% x B	7,048,917,402	7,894,649,208	9,309,547,770				
G4. Funding Value End of Year	8,817,254,313	9,331,667,789	10,519,229,198				
H. Actual/Projected Difference between Market							
and Funding Value	(6,107,560)	536,643,721	1,117,705,515	689	,200,972	286,310,504	-
I. Market Rate of Return	9.57 %	13.33 %	19.24 %				
J. Funding Rate of Return	5.70 %	7.13 %	14.08 %				
K. Ratio of Funding Value to Market Value	100.07 %	94.56 %	90.40 %				

The Funding Value of Assets recognizes assumed investment return (line E2) fully each year. Differences between actual and assumed investment income (line E3) are phased in over a closed 4-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than Market Value. *The Funding Value of Assets is unbiased with respect to Market Value*. At any time it may be either greater or less than Market Value. If assumed rates are exactly realized for 3 consecutive years, it will become equal to Market Value.

*The assets* of the Retirement System, as of June 30, 2007, were reported to your actuary to be \$11,636,934,713. This amount, together with a market value adjustment of \$(1,117,705,515), is used to finance the Retirement System liability.

	Assets at June 30				
Accounts	2007	2006			
Regular Accounts					
Members' Deposit Accounts					
Contributions	\$ 656,382,162	\$ 606,191,379			
Interest	6,916,232,477	5,451,947,369			
Total	7,572,614,639	6,058,138,748			
T-Drop Member Deposit Accounts					
Contributions	22,286,243	23,389,140			
Interest	64,413,268	63,178,939			
Total	86,699,511	86,568,079			
Employer's Accumulation Account	(1,328,251,686)	(1,209,546,673)			
Retirement Reserve Account	4,766,630,952	4,431,278,061			
Act 808 Retirement Reserve Account	29,304,893	30,910,014			
T-Lump Payable	435,927,804	396,066,329			
Survivors Benefit Account	59,775,461	56,490,859			
Total Regular Accounts	11,622,701,574	9,849,905,417			
Other Accounts					
Income Expense Account	14,233,139	18,406,093			
Other Special Reserves	-	-			
Miscellaneous	-	-			
Total Other Accounts	14,233,139	18,406,093			
Total Accounting Value of Assets	11,636,934,713	9,868,311,510			
Market Value Adjustment	(1,117,705,515)	(536,643,721)			
Funding Value of Assets	\$10,519,229,198	\$ 9,331,667,789			

### MARKET VALUE OF ASSETS

The net market value of assets at year end was \$11,636,934,713 and was invested as shown below.

	Market Value at June 30				
	2007	2006			
Cash	\$ 31,909,110	\$ 25,823,790			
Receivables					
Unsettled Trades and Accrued Return	191,213,525	81,747,545			
Member Contributions	13,045,014	11,003,937			
Employer Contributions	44,603,623	38,956,955			
Other	59,780	55,631			
Total Receivables	248,921,942	131,764,068			
Investments					
Short Term	298,776,298	204,958,737			
Common and Preferred	2,705,612,225	2,507,594,446			
International	1,584,082,413	1,531,511,882			
Corporate Bonds	423,630,296	518,610,391			
Alternative Investments	1,072,971,482	839,665,692			
Market Valuation	2,113,503,767	1,293,710,180			
Real Estate	101,859,129	94,152,743			
Mortgage Loans	54,309,933	57,545,473			
Revenue Bonds	-	-			
Government Securities	365,946,053	296,308,861			
Other Investments	3,056,637,345	2,610,076,052			
Repurchase Agreements	-	-			
Total Investments	11,777,328,941	9,954,134,457			
Invested Securities Lending	1,292,638,364	1,157,070,059			
Net Equipment	256,714	253,294			
Total Assets	13,351,055,071	11,269,045,668			
Liabilities					
Escrow Payables	-	-			
Other Payables	1,503,787	1,298,941			
Securities Related Payables	419,978,207	242,365,158			
Securities Lending Collateral	1,292,638,364	1,157,070,059			
Total Liabilities	1,714,120,358	1,400,734,158			
Net Market Value	\$11,636,934,713	\$9,868,311,510			
Change from Prior Year	1,768,623,203	1,057,164,757			

### MARKET VALUE RECONCILIATION

Market value reconciliation assets during the year developed as follows:

	Year Endo	ed June 30
	2007	2006
Net Market Value July 1	\$ 9,868,311,510	\$ 8,811,146,753
Additions		
Employer Contributions	331,891,210	311,713,735
Employee Contributions	100,093,372	92,005,600
Appreciation	820,052,603	388,546,113
Interest	662,481,772	340,323,248
Dividends	436,344,868	463,542,471
Real Estate	6,292,882	6,564,957
Other	366,376	270,690
Securities Lending Activity	67,523,197	45,220,869
Total Additions	2,425,046,280	1,648,187,683
Deductions		
Age & Service Benefits	426,655,184	395,519,711
Disability Benefits	24,531,282	23,489,045
Option Benefits	12,388,886	11,081,484
Survivor Benefits	6,259,378	5,925,462
Reciprocal Service	16,732,846	14,726,557
Act 808	4,228,777	4,278,616
Refunds	5,179,850	6,207,622
Active Member Death	950,829	658,633
T-DROP Benefits	53,473,155	51,962,453
Investment Expense	100,211,285	71,206,675
Administrative Expense	5,811,605	5,966,668
Total Deductions	656,423,077	591,022,926
Miscellaneous	_	_
Net Market Value June 30	\$11,636,934,713	\$ 9,868,311,510

# SCHEDULE OF FUNDING PROGRESS (DOLLAR AMOUNTS IN MILLIONS)

	(1)			(4)		(6)
Valuation	Actuarial	(2)	(3)	Funding	(5)	UAAL as %
Date	Value of	Entry Age	UAAL	Ratio	Annual	of Payroll
June 30	Assets	AAL	(2)-(1)	(1)/(2)	Payroll	(3)/(5)
1991+*	\$2,434	\$ 2,762	\$ 328	88.1%	\$ 909	36.1%
1992+	2,729	3,329	600	82.0%	1,077	55.7%
1993+	3,051	3,712	661	82.2%	1,120	59.0%
1994	3,307	3,960	653	83.5%	1,167	56.0%
1995*	3,626	4,257	631	85.2%	1,234	51.1%
1996	4,186	4,635	449	90.3%	1,260	35.6%
1997+	4,956	5,403	447	91.7%	1,302	34.3%
1998+*	5,815	6,188	373	94.0%	1,368	27.3%
1999+	6,740	6,834	94	98.6%	1,429	6.6%
2000+	7,620	7,879	259	96.7%	1,485	17.4%
2001+	8,166	8,561	395	95.4%	1,557	25.4%
2002*	8,328	9,062	734	91.9%	1,628	45.1%
2003+	8,113	9,445	1,332	85.9%	1,683	79.1%
2004	8,424	10,050	1,626	83.8%	1,748	93.0%
2005	8,817	10,973	2,156	80.4%	1,962	109.9%
2006	9,332	11,623	2,291	80.3%	2,080	110.1%
2007	10,519	12,354	1,835	85.1%	2,191	83.8%
2007+	10,519	12,329	1,810	85.3%	2,191	82.6%

<sup>+</sup> Legislated benefit or contribution rate change.

<sup>\*</sup> Revised actuarial assumptions.



COVERED MEMBER DATA

### TOTAL ACTIVE MEMBERS IN VALUATION JUNE 30, 2007 BY ATTAINED AGE AND YEARS OF SERVICE

		Yea		Totals					
Attained									Valuation
Age	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Payroll
Under 20	96							96	\$ 492,617
20-24	1,825	21						1,846	31,473,464
25-29	4,868	963	4					5,835	167,478,671
30-34	3,582	3,036	679	2				7,299	224,100,279
35-39	3,624	2,428	2,373	538	5			8,968	279,047,346
40-44	3,277	2,376	1,821	1,802	590	1		9,867	303,743,562
45-49	2,672	2,237	1,945	1,585	1,838	679		10,956	374,801,692
50-54	2,091	1,811	1,723	1,739	1,198	1,388	107	10,057	357,871,508
55-59	1,769	1,369	1,283	1,417	1,336	775	99	8,048	281,249,413
60	334	260	168	247	237	147	12	1,405	46,753,836
61	261	180	158	183	200	97	8	1,087	34,754,093
62	203	150	99	122	111	66	5	756	23,785,626
63	195	149	85	65	86	45	7	632	18,477,096
64	188	109	64	66	59	37	8	531	14,077,322
									, ,
65	151	75	57	40	51	30	7	411	10,621,190
66	137	57	27	19	22	15	3	280	6,594,458
67	131	39	9	5	2	2	1	189	2,668,333
68	119	37	8	6	2	4	1	177	2,622,139
69	102	44	11	2	2	2		163	2,302,997
									, ,
70 & Up	347	222	29	13	9	2	1	623	7,742,600
									, ,
Totals	25,972	15,563	10,543	7,851	5,748	3,290	259	69,226	\$2,190,658,242

This schedule does not include T-DROP members.

Group Averages:

Age: 44.4 years Service: 9.3 years

### WOMEN ACTIVE MEMBERS IN VALUATION JUNE 30, 2007 BY ATTAINED AGE AND YEARS OF SERVICE

		Yea		Totals					
Attained									Valuation
Age	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Payroll
Under 20	50							50	\$ 285,226
20-24	1,367	9						1,376	24,496,658
25-29	3,822	774	1					4,597	130,347,890
30-34	2,933	2,360	528	1				5,822	168,467,779
35-39	3,036	2,004	1,870	443	4			7,357	216,594,398
40-44	2,699	2,020	1,486	1,405	494	1		8,105	236,031,808
45-49	2,102	1,875	1,637	1,288	1,447	558		8,907	289,788,374
50-54	1,553	1,412	1,412	1,487	1,007	1,069	84	8,024	275,413,449
55-59	1,207	1,019	1,035	1,223	1,163	647	71	6,365	216,718,806
60	220	195	120	195	211	116	9	1,066	34,495,545
61	169	120	112	148	175	88	6	818	25,755,621
62	128	97	65	98	98	60	4	550	17,187,497
63	125	106	58	52	76	40	6	463	13,280,021
64	131	78	51	45	51	31	5	392	9,990,500
									, ,
65	95	44	44	33	45	27	7	295	7,822,618
66	79	35	24	16	19	14	2	189	4,291,681
67	72	21	3	4	2	1	1	104	1,408,363
68	56	21	6	6	2	4	1	96	1,555,593
69	55	25	4	2	2	2		90	1,216,328
				_		_			,= = =,= <b>=</b> 0
70 & Up	207	111	12	6	6	1	1	344	3,821,894
l									- ,,-,
Totals	20,106	12,326	8,468	6,452	4,802	2,659	197	55,010	\$1,678,970,049

This schedule does not include T-DROP members.

#### Group Averages:

Age: 44.2 years Service: 9.5 years

### MEN ACTIVE MEMBERS IN VALUATION JUNE 30, 2007 BY ATTAINED AGE AND YEARS OF SERVICE

		Yea	rs of Serv	vice to Va	luation I	Date		ı	Totals
Attained									Valuation
Age	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Payroll
Under 20	46							46	\$ 207,391
20-24	458	12						470	6,976,806
25-29	1,046	189	3					1,238	37,130,781
30-34	649	676	151	1				1,477	55,632,500
35-39	588	424	503	95	1			1,611	62,452,948
40-44	578	356	335	397	96			1,762	67,711,754
45-49	570	362	308	297	391	121		2,049	85,013,318
50-54	538	399	311	252	191	319	23	2,033	82,458,059
55-59	562	350	248	194	173	128	28	1,683	64,530,607
60	114	65	48	52	26	31	3	339	12,258,291
61	92	60	46	35	25	9	2	269	8,998,472
62	75	53	34	24	13	6	1	206	6,598,129
63	70	43	27	13	10	5	1	169	5,197,075
64	57	31	13	21	8	6	3	139	4,086,822
65	56	31	13	7	6	3		116	2,798,572
66	58	22	3	3	3	1	1	91	2,302,777
67	59	18	6	1		1		85	1,259,970
68	63	16	2					81	1,066,546
69	47	19	7					73	1,086,669
70 & Up	140	111	17	7	3	1		279	3,920,706
									, ,
Totals	5,866	3,237	2,075	1,399	946	631	62	14,216	\$511,688,193

This schedule does not include T-DROP members.

#### Group Averages:

Age: 45.2 years Service: 8.7 years

### SUMMARY OF ACTIVE MEMBERS (EXCLUDES T-DROP)

	To	eachers	S	upport	Total Active Members		
	No. Payroll		No.	Payroll	No.	Payroll	
Women	27,083	\$1,188,380,685	27,927	\$ 490,589,364	55,010	\$1,678,970,049	
Men	7,090	357,678,595	7,126	154,009,598	14,216	511,688,193	
All	34,173	\$1,546,059,280	35,053	\$ 644,598,962	69,226	\$2,190,658,242	

	Teachers	Support	Total
Members Contributing Now	27,647	15,699	43,346
Members Not Contributing	6,526	19,354	25,880
All	34,173	35,053	69,226

		Group Averages			Active Member
June 30	Number	Age	Service	Annual Earnings	Payroll (\$ Millions)
1997	56,997	43.2	9.8	22,847	1,302
1998	58,528	43.4	9.7	23,380	1,368
1999	59,499	43.5	9.8	24,019	1,429
2000	60,147	43.6	9.6	24,696	1,485
2001	61,389	43.7	9.5	25,365	1,557
2002	62,011	43.8	9.4	26,254	1,628
2003	62,432	44.0	9.5	26,963	1,683
2004	63,185	44.2	9.5	27,660	1,748
2005	65,793	44.2	9.4	29,826	1,962
2006	67,710	44.3	9.3	30,714	2,080
2007	69,226	44.4	9.3	31,645	2,191

The figures on this historical schedule are affected by the inclusion of new non-teaching employees beginning July 1, 1989.

### DEFERRED VESTED MEMBERS AT JUNE 30, 2007 BY ATTAINED AGE

		Estimated	Contribution
Age	Number	Annual Benefits	Balance
Below 40	1,799	\$ 6,957,993	\$ 7,959,132
40	324	1,239,543	1,120,992
41	315	1,200,644	1,076,096
42	377	1,432,962	1,101,585
43	430	1,548,596	1,379,315
44	413	1,534,431	1,430,199
45	444	1,692,583	1,735,295
46	449	1,798,626	1,921,837
47	383	1,477,332	1,874,724
48	450	1,934,303	2,205,866
49	416	1,745,029	2,217,519
50	459	2,021,926	2,913,065
51	437	1,883,515	2,302,680
52	433	2,017,217	3,226,578
53	417	1,909,347	2,942,715
54	411	1,939,006	3,061,424
		4 00 4 704	2 101 177
55	407	1,996,733	3,401,457
56	367	1,836,294	3,241,749
57	418	2,120,784	4,253,163
58	365	1,839,435	3,794,559
59	369	2,207,859	5,241,427
60 & Up	744	2,648,671	4,710,277
Totals	10,627	\$44,982,829	\$63,111,654

An inactive member is no longer actively working and has sufficient service credit to qualify for a monthly benefit at retirement age.

This valuation also includes 62 beneficiaries of deceased retirees who are eligible for a pension at age 62.

# ALL MEMBERS PARTICIPATING IN T-DROP AT JUNE 30, 2007 BY ATTAINED AGE

		<b>Current T-DROP</b>	Original T-DROP	T-DROP	_
Age	Number	Contribution	Contribution	Account Balance	Pay
45	1	\$ 887	\$ 861	\$ 889	\$ 30,124
47	2	32,799	31,317	71,989	93,390
48	2	22,422	21,228	43,329	106,224
49	11	208,907	202,953	279,642	583,708
50	86	1,576,417	1,593,720	1,782,586	4,467,065
51	178	3,244,657	3,116,537	4,910,635	9,697,178
52	242	4,614,088	4,399,668	8,804,678	13,275,887
53	373	7,202,850	6,734,729	18,182,241	21,198,470
54	411	7,694,171	7,135,749	23,982,836	22,831,428
55	429	8,212,670	7,544,965	32,203,545	24,750,840
56	422	8,207,538	7,426,593	37,501,823	24,190,549
57	437	8,515,026	7,610,133	43,152,417	25,279,379
58	443	8,806,055	7,754,027	48,875,427	26,010,391
59	428	8,557,638	7,432,360	51,967,840	24,963,622
60	394	7,796,345	6,687,449	49,169,769	22,686,313
61	232	4,752,410	4,037,511	31,422,626	13,698,965
62	182	3,725,160	3,177,888	23,753,454	10,693,910
63	142	3,159,286	2,680,272	20,800,491	9,025,184
64	115	2,447,677	1,955,466	16,731,092	6,551,971
65	75	1,991,146	1,272,590	10,315,586	4,366,852
66	46	1,264,306	771,162	7,152,312	2,589,186
67	26	735,918	431,398	4,120,607	1,483,045
68	9	258,296	139,879	1,725,254	522,294
69	9	240,401	153,952	1,673,333	529,014
70	8	276,087	181,026	2,121,365	457,099
71	1	33,307	18,221	231,830	62,658
72	3	106,248	59,836	721,612	197,549
73	1	31,807	17,096	255,488	51,675
75	1	43,442	18,293	369,649	59,316
Totals	4,709	\$93,757,961	\$82,606,879	\$442,324,345	\$ 270,453,286

A T-DROP member continues to work, but does not accrue retirement benefits. A reduced benefit is paid into the T-DROP account (see page C-2) during T-DROP participation.

# MEMBERS PARTICIPATING IN T-DROP AT JUNE 30, 2007 BY ATTAINED AGE ENTERING T-DROP BEFORE SEPTEMBER 2003

		<b>Current T-DROP</b>	Original T-DROP	T-DROP	
Age	Number	Contribution	Contribution	Account Balance	Pay
50	2	\$ 27,410	\$ 24,771	\$ 128,341	\$ 114,367
51	2	31,500	29,766	135,737	116,805
52	18	304,506	274,974	1,326,954	1,043,792
53	89	1,635,654	1,467,758	7,148,724	5,127,276
54	170	3,092,346	2,782,620	14,225,466	9,356,304
55	256	4,857,550	4,363,180	25,174,108	15,017,158
56	288	5,609,111	4,964,576	32,370,771	16,762,135
57	311	6,127,671	5,344,692	38,425,073	18,274,511
58	326	6,636,294	5,683,720	44,759,658	19,722,394
59	332	6,865,787	5,828,521	48,757,313	19,736,291
60	296	6,175,285	5,167,401	46,063,577	17,594,072
61	179	3,770,463	3,102,658	29,472,771	10,869,231
62	127	2,780,124	2,283,578	21,890,537	7,797,249
63	109	2,491,906	2,035,469	19,689,819	7,149,787
64	88	1,997,713	1,534,050	15,758,669	5,154,806
65	54	1,612,068	904,246	9,612,332	3,202,027
66	36	1,098,330	616,740	6,807,581	2,079,604
67	22	680,195	378,961	3,954,230	1,322,104
68	8	254,505	136,401	1,713,689	497,613
69	8	217,322	132,779	1,602,925	464,058
70	8	276,087	181,026	2,121,365	457,099
71	1	33,307	18,221	231,830	62,658
72	3	106,248	59,836	721,612	197,549
73	1	31,807	17,096	255,488	51,675
75	1	43,442	18,293	369,649	59,316
Totals	2,735	\$ 56,756,631	\$ 47,351,333	\$ 372,718,219	\$ 162,229,881

A partial employer contribution is made to ATRS on behalf of these individuals in accordance with Act 992 of 2003.

# MEMBERS PARTICIPATING IN T-DROP AT JUNE 30, 2007 BY ATTAINED AGE ENTERING T-DROP AFTER AUGUST 2003

		<b>Current T-DROP</b>	Original T-DROP	T-DROP	
Age	Number	Contribution	Contribution	<b>Account Balance</b>	Pay
45	1	\$ 887	\$ 861	\$ 889	\$ 30,124
47	2	32,799	31,317	71,989	93,390
48	2	22,422	21,228	43,329	106,224
49	11	208,907	202,953	279,642	583,708
50	84	1,549,007	1,568,949	1,654,245	4,352,698
51	176	3,213,157	3,086,771	4,774,898	9,580,373
52	224	4,309,582	4,124,694	7,477,724	12,232,095
53	284	5,567,196	5,266,971	11,033,517	16,071,194
54	241	4,601,825	4,353,129	9,757,370	13,475,124
55	173	3,355,120	3,181,785	7,029,437	9,733,682
56	134	2,598,427	2,462,017	5,131,052	7,428,414
57	126	2,387,355	2,265,441	4,727,344	7,004,868
58	117	2,169,761	2,070,307	4,115,769	6,287,997
59	96	1,691,851	1,603,839	3,210,527	5,227,331
60	98	1,621,060	1,520,048	3,106,192	5,092,241
61	53	981,947	934,853	1,949,855	2,829,734
62	55	945,036	894,310	1,862,917	2,896,661
63	33	667,380	644,803	1,110,672	1,875,397
64	27	449,964	421,416	972,423	1,397,165
65	21	379,078	368,344	703,254	1,164,825
66	10	165,976	154,422	344,731	509,582
67	4	55,723	52,437	166,377	160,941
68	1	3,791	3,478	11,565	24,681
69	1	23,079	21,173	70,408	64,956
Totals	1,974	\$ 37,001,330	\$ 35,234,373	\$ 69,535,718	\$ 108,158,449

A full employer contribution is made to ATRS on behalf of these individuals in accordance with Act 992 of 2003.

## ANNUITIES BEING PAID RETIREES AND BENEFICIARIES JULY 1, 2007 BY TYPE OF ANNUITY BEING PAID

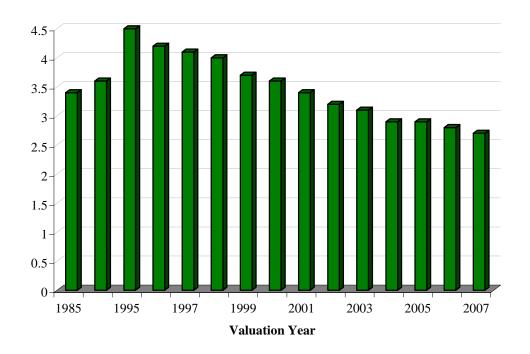
		Annual Amounts					
		Original	Base	Current			
Type of Annuity	No.	Annuities	Annuities	Annuities			
RETI	REMENT R	ESERVE ACCO	UNT				
Age & Service							
Option 1 (Basic single life)	17,800	\$ 220,794,349	\$ 274,718,907	\$ 341,176,693			
Option A (Joint & 100% S.)	2,206	32,670,541	36,375,688	44,065,839			
Option B (Joint & 50% S.)	1,336	26,271,047	30,392,519	37,611,533			
Option C (10 year certain)	600	9,467,303	9,848,466	11,588,456			
Beneficiaries	577	7,295,617	7,749,333	9,639,960			
Totals	22,519	296,498,857	359,084,913	444,082,481			
Dischiller							
Disability Ontion 1	1.506	12 007 950	16 692 709	20, 200, 222			
Option 1	1,596	13,097,859	16,683,798	20,309,333			
Option A	213	1,917,925	2,227,886	2,640,908			
Option B	61	763,442	864,575	1,017,062			
Option C	56	463,001	478,726	538,027			
Beneficiaries	274	2,238,471	2,811,085	3,455,370			
Totals	2,200	18,480,698	23,066,070	27,960,700			
Act 793	201	1,236,070	1,996,034	1,996,034			
Totals	24,920	316,215,625	384,147,017	474,039,215			
SUR	<u> </u> VIVOR'S BI	L ENEFIT ACCOU	J <b>NT</b>				
Beneficiaries of							
Deceased Members	573	4,036,702	5,218,774	6,250,603			
	AC	T 808					
Act 808	118	1,983,024	4,260,573	4,260,573			
RETIREMENT SYSTEM TOTALS							
Total Annuities Being Paid	25,611	\$ 322,235,351	\$ 393,626,364	\$ 484,550,391			

**The Original Annuity** is the annuity at the date of retirement.

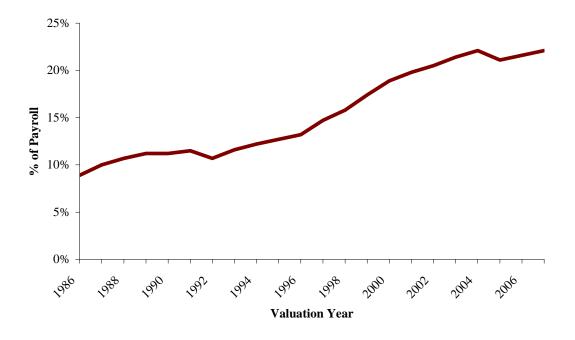
**The Base Annuity** is the amount from which the 3.0% COLA is calculated.

**The Current Annuity** is the annuity payable at July 1, 2007.

#### **Active Members Per Retired Life**



# Retirement Benefits Being Paid as a Percent of Member Payroll



# BENEFIT CHANGES DURING RECENT YEARS OF RETIREMENT & RELATED CHANGES IN PURCHASING POWER (1980 \$)

Year Ended	Increase Beginning	Benefit Dollars	Inflation (Loss)	at Yea	ng Power ar End
June 30	of Year	in Year*	in Year#	1980 \$	% of 1980
1980		\$ 5,000		\$ 5,000	100%
1981	\$ 75	5,075	(9.6)%	4,632	93%
1982	152	5,227	(7.1)%	4,456	89%
1983	152	5,379	(2.6)%	4,471	89%
1984	431	5,810	(4.2)%	4,633	93%
1985	438	6,248	(3.7)%	4,802	96%
1986	509	6,757	(1.7)%	5,103	102%
1987	197	6,954	(3.7)%	5,067	101%
1988	400	7,354	(3.9)%	5,154	103%
1989	503	7,857	(5.1)%	5,236	105%
1990	497	8,354	(4.7)%	5,319	106%
1991	230	8,584	(4.7)%	5,220	104%
1992	762	9,346	(3.1)%	5,513	110%
1993	792	10,138	(3.0)%	5,806	116%
1994	820	10,958	(2.5)%	6,123	122%
1995	303	11,261	(3.0)%	6,107	122%
1996	303	11,564	(2.8)%	6,103	122%
1997	1,657	13,221	(2.3)%	6,821	136%
1998	1,214	14,435	(1.7)%	7,324	146%
1999	323	14,758	(2.0)%	7,344	147%
2000	1,039	15,797	(3.7)%	7,583	152%
2001	1,220	17,017	(3.2)%	7,907	158%
2002	672	17,689	(1.1)%	8,132	163%
2003	468	18,157	(2.1)%	8,174	163%
2004	468	18,625	(3.3)%	8,120	162%
2005	468	19,093	(2.5)%	8,118	162%
2006	468	19,561	(4.3)%	7,973	159%
2007	468	20,029	(2.7)%	7,950	159%
2008	468	20,497			

<sup>\*</sup> The \$5,000 benefit used to begin this schedule is an arbitrary amount. A smaller beginning amount would show a smaller purchasing power loss in percent loss.

<sup>#</sup> Based on Consumer Price Index, All Urban Consumers, United States City Average (June values).

# BENEFIT CHANGES DURING RECENT YEARS OF RETIREMENT & RELATED CHANGES IN PURCHASING POWER (1990 \$)

Year Ended	Increase Beginning	Benefit Dollars	Inflation (Loss)		ng Power ar End
June 30	of Year	in Year*	in Year#	1990 \$	% of 1990
1990		\$ 5,000		\$ 5,000	100%
1991	\$ 150	5,150	(4.7)%	4,919	98%
1992	457	5,607	(3.1)%	5,195	104%
1993	475	6,082	(3.0)%	5,471	109%
1994	492	6,574	(2.5)%	5,770	115%
1995	182	6,756	(3.0)%	5,755	115%
1996	182	6,938	(2.8)%	5,751	115%
1997	330	7,268	(2.3)%	5,889	118%
1998	667	7,935	(1.7)%	6,324	126%
1999	177	8,112	(2.0)%	6,340	127%
2000	849	8,961	(3.7)%	6,756	135%
2001	826	9,787	(3.2)%	7,143	143%
2002	387	10,174	(1.1)%	7,346	147%
2003	270	10,444	(2.1)%	7,385	148%
2004	270	10,714	(3.3)%	7,337	147%
2005	270	10,984	(2.5)%	7,336	147%
2006	270	11,254	(4.3)%	7,205	144%
2007	270	11,524	(2.7)%	7,185	144%
2008	270	11,794			

<sup>\*</sup> The \$5,000 benefit used to begin this schedule is an arbitrary amount. A smaller beginning amount would show a smaller purchasing power loss in percent loss.

<sup>#</sup> Based on Consumer Price Index, All Urban Consumers, United States City Average (June values)

# **SECTION F**

FINANCIAL PRINCIPLES

#### FINANCIAL PRINCIPLES AND OPERATIONAL TECHNIQUES

**Promises Made and To Be Paid For.** As each year is completed, the System, in effect, hands an "IOU" to each member then acquiring a year of service credit. The "IOU" says: "The Arkansas Teacher Retirement System owes you one year's worth of retirement benefits, payments in cash commencing when you qualify for retirement."

The related *key financial questions* are:

Which generation of taxpayers contributes the money to cover the IOU?

The present taxpayers, who receive the benefit of the member's present year of service?

Or the future taxpayers, who happen to be in Arkansas at the time the IOU becomes a cash demand?

The financial objective of the ATRS is that this year's taxpayers contribute the money to cover the IOUs being handed out this year so that *the employer contribution rate will remain approximately level from generation to generation* -- our children and our grandchildren will not have to contribute greater percents of pay than we contribute now. This objective was set forth in Act 793 of 1977.

(There are systems which have *a design for deferring contributions to future taxpayers*, lured by a lower contribution rate now and putting aside the fact that the contribution rate must then relentlessly grow much greater over decades of time -- consume now, and let your children face higher contribution rates after you retire.)

An inevitable byproduct of the level-cost design is the accumulation of reserve assets for decades and the income produced when the assets are invested. *Investment income* becomes the *third and largest contributor* for benefits to employees, and is interlocked with the contribution amounts required from employees and employers.

Translated to actuarial terminology, this level-cost objective means that the contribution rates must total at least the following:

Normal Cost (the cost of members' service being rendered this year)

... plus ...

Interest on Unfunded Actuarial Accrued Liabilities (unfunded accrued liabilities are the difference between (i) liabilities for service already rendered and (ii) the accrued assets of the plan).

Computing Contributions to Support System Benefits. From a given schedule of benefits and from the employee data and asset data furnished, the actuary determines the contribution rates to support the benefits, by means of an actuarial valuation. An actuarial valuation has a number of ingredients such as: the rate of investment income which plan assets will earn; the rates of withdrawal of active members who leave covered employment before qualifying for any monthly benefit; the rates of mortality; the rates of disability; the rates of pay increases; and the assumed age or ages at actual retirement. In an actuarial valuation, assumptions must be made as to what the above rates will be, for the next year and for decades in the future. Only the subsequent actual experience of the System can indicate the degree of accuracy of the assumptions.

Reconciling Differences Between Assumed Experience and Actual Experience. Once actual experience has occurred and been observed, it will not coincide exactly with assumed experience, regardless of the accuracy of the various financial assumptions or the skill of the actuary and the precision of the calculations made. The System copes with these continually changing differences by having annual actuarial valuations. Each actuarial valuation is a complete recalculation of assumed future experience, taking into account all past differences between assumed and actual experience. The result is continual adjustments in financial position.

## THE ACTUARIAL VALUATION PROCESS

The financing diagram on the next page shows the relationship between the two fundamentally different philosophies of paying for retirement benefits: the method where contributions match cash benefit payments (or barely exceed cash benefit payments, as in the Federal Social Security program), and is thus an increasing contribution method; and the level contribution method which equalizes contributions between the generations.

*The actuarial valuation* is the mathematical process by which the level contribution rate is determined, and the flow of activity constituting the valuation may be summarized as follows:

A. *Census Data*, furnished by plan administrator

Retired lives now receiving benefits

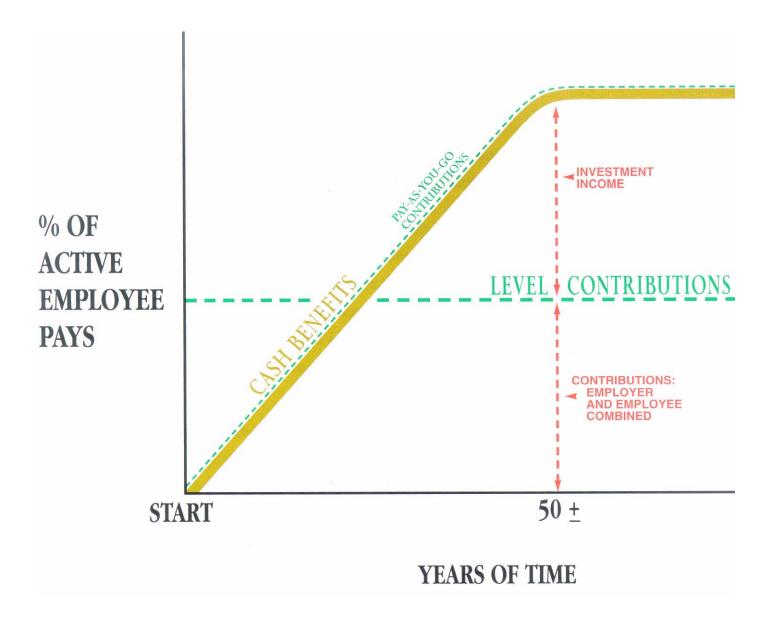
Former employees with vested benefits not yet payable

Active employees

- B. + Asset data (cash & investments), furnished by plan administrator
- C. + **Benefit provisions** that establish eligibility and amounts of payments to members
- D. + Assumptions concerning future financial experiences in various risk areas, which assumptions are established by the Board of Trustees after consulting with the actuary.
- E. + *The funding method* for employer contributions (the long-term planned pattern for employer contributions)
- F. + Mathematically combining the assumptions, the funding method, and the data
- G. = Determination of:

*Plan financial position*, and/or

New Employer Contribution Rate



**CASH BENEFITS LINE.** This relentlessly increasing line is the fundamental reality of retirement plan financing. It happens each time a new benefit is added for future retirements (and happens regardless of the design for contributing for benefits).

**LEVEL CONTRIBUTION LINE.** Determining the level contribution line requires detailed assumptions concerning a variety of experiences in future decades, including:

Economic Risk Areas

Rates of investment return

Rates of pay increase

Changes in active member group size

Non-Economic Risk Areas

Ages at actual retirement

Rates of mortality

Rates of withdrawal of active members (turnover)

Rates of disability



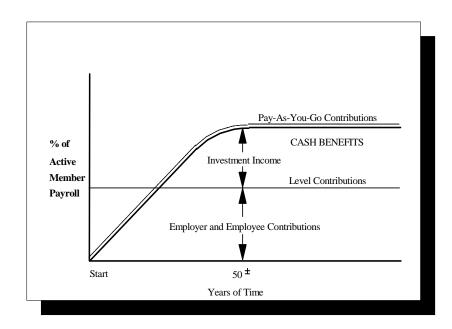
#### SELECTION OF ASSUMPTIONS USED IN ACTUARIAL VALUATIONS

#### **Economic Assumptions**

Investment return
Pay increases to individual employees:
the portion for economic changes
Active member group size and
total payroll growth

#### **Demographic Assumptions**

Actual ages at service retirement
Pay increases to individual members:
the portion for merit & seniority
Disability while actively employed
Separations before retirement
Mortality after retirement
Mortality before retirement



#### RELATIONSHIP BETWEEN PLAN GOVERNING BODY AND THE ACTUARY

The actuary should have the primary responsibility for choosing the *demographic* assumptions used in the actuarial valuation, making use of specialized training and experience.

The actuary and other professionals can provide guidance concerning the choice of suitable economic assumptions, but the basis of the economic assumptions is the assumed rate of *inflation*, a quantity which defies accurate prediction. Given an assumed rate of future inflation, it is very important it is very important that this rate be applied in a consistent manner in deriving the assumed rate of investment return, the economic portion of the assumption on pay increases to individual employees, and the assumed rate of growth of active member payroll. Consistent application of assumptions is an area in which the actuary has specialized training.

A sound procedure is that the actuary suggests reasonable alternatives for economic assumptions, followed by discussion involving the actuary, the Plan Governing Body, and other professionals, and the Plan Governing Body then makes a final choice from the various alternatives.

## SUMMARY OF ASSUMPTIONS USED IN ACTUARIAL VALUATIONS FOR THE ARKANSAS TEACHER RETIREMENT SYSTEM ASSUMPTIONS ADOPTED BY BOARD OF TRUSTEES AFTER CONSULTING WITH ACTUARY

#### Economic Assumptions

The investment return rate used in making the valuation was 8.0% per year, compounded annually (net after administrative expenses). This rate of return is not the assumed real rate of return. The real rate of return over wage inflation in this valuation is defined to be the portion of investment return which is more than the wage inflation rate. Considering wage inflation recognition of 4.0%, the 8.0% rate translates to an assumed real rate of return over wage inflation of 4.0%. This rate was first used for the *June 30, 2002* valuation. The assumed real rate of return over price inflation would be higher – on the order of 4.5% to 5%.

**Pay increase assumptions** for individual active members are shown on pages G-7 and G-8. Part of the assumption for each age is for a merit and/or seniority increase, and the other 4.0% recognizes wage inflation. These rates were first used for the **June 30, 2002** valuation.

No specific *Price Inflation* is needed for this valuation. However, the wage inflation and interest rate assumptions would be compatible with a price inflation assumption of 3.0% or 3.5%. It is assumed that the 3% COLA will always be paid.

The Active Member Group size is assumed to remain constant at its present level.

**Total active member payroll** is assumed to increase 4.0% a year, which is the portion of the individual pay increase assumptions attributable to wage inflation. This rate was first used for the **June 30, 2002** valuation.

#### Non-Economic Assumptions

The mortality table used to measure retired life mortality was the 1983 Group Annuity Mortality Table. Related values are shown on page G-4. This table was first used for the *June 30*, 1998 valuation. For disabled lives, the mortality table is set forward 5 years. The set forward of 5 years was first used for the *June 30*, 2002 valuation.

The probabilities of retirement for members eligible to retire are shown on page G-5 and G-6. The rates for full retirement were first used in the *June 30*, 2005 valuation. The rates for reduced retirement were first used in the *June 30*, 2002 valuation.

The probabilities of withdrawal from service, death-in-service and disability are shown for sample ages on pages G-7 and G-8. The withdrawal and disability rates were first used in the June 30, 2002 valuation. The death-in-service rates were first used in the June 30, 2002 valuation.

The entry age actuarial cost method of valuation was used in determining accrued liabilities and normal cost.

Differences in the past between assumed experience and actual experience ("actuarial gains and losses") become part of actuarial accrued liabilities.

Unfunded actuarial accrued liabilities are amortized to produce contribution amounts (the total of principal & interest) which are level percents of payroll contributions.

These cost methods were first used in the June 30, 1986 valuation.

Asset Valuation Method. A market value related asset method is used as described on page D-1. This method was first used in the June 30, 1995 valuation. It was modified following the 1997-2002 Experience Study to include an 80% - 120% market value corridor.

The data about persons now covered and about present assets was furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary. Members whose dates of birth were not supplied were assumed to be 40 years old on the valuation date. Members whose salaries were not supplied and that entered T-DROP before September 2003 were assumed to have the group average pay of \$59,316. Those that entered after were assumed to have the group average pay of \$54,824.

The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (M.A.A.A.).

# SINGLE LIFE RETIREMENT VALUES

Sample Attained		Value of hly for Life	Present Value of \$1  Monthly for Life Increasing 3.0% Annually		Future Life Expectancy (years)		Percent Dying within Next Year	
Ages	Men	Women	Men	Women	Men	Women	Men	Women
40	\$142.98	\$147.82	\$184.74	\$193.70	38.46	44.52	0.12 %	0.07 %
45	138.18	144.67	176.24	187.61	33.74	39.69	0.22 %	0.10 %
50	132.10	140.42	165.94	179.79	29.18	34.92	0.39 %	0.16 %
55	124.57	134.74	153.75	169.90	24.82	30.24	0.61 %	0.25 %
60	115.04	127.24	139.16	157.58	20.64	25.67	0.92 %	0.42 %
65	103.26	117.61	122.19	142.67	16.69	21.29	1.56 %	0.71 %
70	90.18	105.53	104.27	125.11	13.18	17.13	2.75 %	1.24 %
75	76.40	91.57	86.27	105.96	10.15	13.37	4.46 %	2.40 %
80	62.65	77.16	69.17	87.10	7.64	10.20	7.41 %	4.29 %
85	50.59	62.99	54.72	69.36	5.73	7.58	11.48 %	6.99 %
Ref:	30 x 1.00	31 x 1.00	30 x 1.00	31 x 1.00				

Sample Attained	Benefit Increasing	Portion of Age 60 Lives Still Alive	
Ages	3.0% Yearly	Men	Women
60	\$100.00	100%	100%
65	115.00	94%	97%
70	130.00	85%	93%
75	145.00	72%	86%
80	160.00	54%	73%
Ref		30	31

### PROBABILITIES OF RETIREMENT FOR MEMBERS

	% of Active Participants Retiring with Unreduced Benefits					
	Educ	cation	Sup	pport		
Retirement						
Ages	Ages Male Fema		Male	Female		
48	50%	40%	50%	30%		
49	50%	40%	50%	30%		
50	13%	8%	5%	9%		
51	10%	8%	5%	9%		
52	9%	8%	12%	8%		
53	9%	9%	13%	12%		
54	9%	9%	8%	10%		
55	9%	11%	8%	12%		
56	12%	11%	9%	11%		
57	10%	13%	14%	9%		
58	11%	13%	15%	16%		
59	14%	18%	11%	28%		
60	14%	17%	9%	14%		
61	14%	15%	10%	14%		
62	28%	25%	28%	21%		
63	17%	18%	20%	17%		
64	17%	17%	20%	16%		
65	27%	38%	30%	30%		
66	30%	30%	30%	30%		
67	30%	30%	30%	30%		
68	30%	30%	30%	30%		
69	30%	30%	30%	30%		
70	30%	30%	30%	30%		
71	30%	30%	30%	30%		
72	30%	30%	30%	30%		
73	30%	30%	30%	30%		
74	30%	30%	30%	30%		
75	100%	100%	100%	100%		
Ref	1016	1017	1018	1019		

These rates are based upon data presented in the 1997-2002 experience study and were first used in the 2005 valuation.

	% of Active Participants Retiring with Reduced Benefits						
Retirement	Educ	ation	Sup	port			
Ages	Male	Female	Male	Female			
50	2%	2%	2%	2%			
51	2%	2%	2%	2%			
52	3%	3%	3%	3%			
53	4%	4%	4%	4%			
54	4%	4%	4%	4%			
55	6%	6%	6%	6%			
56	9%	5%	9%	5%			
57	9%	5%	9%	5%			
58	9%	5%	9%	5%			
59	9%	5%	9%	5%			
Ref	826	825	826	825			

### **DURATION OF T-DROP FOR MEMBERS**

Present T-DROP members are assumed to remain in T-DROP according to the following table:

Entry	Assumed		
Age	<b>Duration Years</b>		
50-56	6		
57	5		
58	4		
59+	3		

Future retirees are assumed to have entered T-DROP at the time that is to their greatest financial advantage based on the schedule above.

# TEACHERS SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE AGE AND SERVICE RETIREMENT & INDIVIDUAL PAY INCREASES

	Po	ercent of A	ctive Memb	ers Separa	ting Within	the Next Ye	ar
Sample		De	ath	Disability		Other	
Ages	Service	Men	Women	Men	Women	Men	Women
	0					32.00%	25.00%
	1					15.00%	12.00%
	2					11.00%	9.00%
	3					7.50%	9.00%
	4					5.00%	7.00%
25	5 & Up	0.02%	0.01%	0.10%	0.09%	4.60%	4.84%
30		0.03%	0.02%	0.08%	0.07%	3.94%	4.40%
35		0.04%	0.02%	0.08%	0.07%	3.20%	3.10%
40		0.06%	0.03%	0.14%	0.13%	2.70%	2.20%
45		0.11%	0.05%	0.24%	0.22%	2.08%	2.00%
50		0.20%	0.08%	0.53%	0.47%	1.62%	1.70%
55		0.31%	0.13%	0.88%	0.79%	1.50%	1.50%
60		0.46%	0.21%	1.00%	0.90%	1.50%	1.50%
65		0.78%	0.35%	1.00%	0.90%	1.50%	1.50%
Ref:						136	272
		30 x 0.5	31 x 0.5	135 x 1	135 x 0.9	556	558

	Pay Increase Assumptions					
	for an Individual Member					
	Merit &	Base	Increase			
Age	Seniority	(Economic)	Next Year			
20	5.4%	4.0%	9.4%			
25	4.4%	4.0%	8.4%			
30	3.4%	4.0%	7.4%			
35	2.4%	4.0%	6.4%			
40	1.7%	4.0%	5.7%			
45	1.2%	4.0%	5.2%			
50	0.8%	4.0%	4.8%			
55	0.4%	4.0%	4.4%			
60	0.3%	4.0%	4.3%			
65	0.3%	4.0%	4.3%			
Ref:	197					

# SUPPORT EMPLOYEES SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE AGE AND SERVICE RETIREMENT & INDIVIDUAL PAY INCREASES

	Percent of Active Members Separating Within the Next Year						ear
Sample		Death		Disability		Other	
Ages	Service	Men	Women	Men	Women	Men	Women
	0					40.00%	40.00%
	1					30.00%	25.00%
	2					22.00%	18.00%
	3					18.00%	14.00%
	4					13.00%	11.00%
25	5 & Up	0.02%	0.01%	0.10%	0.08%	12.00%	11.00%
30		0.03%	0.02%	0.08%	0.07%	10.80%	7.60%
35		0.04%	0.02%	0.08%	0.07%	8.20%	5.40%
40		0.06%	0.03%	0.14%	0.12%	5.80%	4.70%
45		0.11%	0.05%	0.24%	0.19%	4.10%	4.20%
50		0.20%	0.08%	0.53%	0.42%	2.90%	2.80%
55		0.31%	0.13%	0.88%	0.70%	1.90%	1.70%
60		0.46%	0.21%	1.00%	0.80%	1.50%	1.50%
65		0.78%	0.35%	1.00%	0.80%	1.50%	1.50%
Ref:						273	274
		30 x 0.5	31 x 0.5	135 x 1	135 x 0.8	560	559

	Pay Increase Assumptions					
	for an Individual Member					
	Merit &	Base	Increase			
Age	Seniority	(Economic)	Next Year			
20	6.1%	4.0%	10.1%			
25	5.2%	4.0%	9.2%			
30	4.2%	4.0%	8.2%			
35	3.6%	4.0%	7.6%			
40	2.9%	4.0%	6.9%			
45	1.5%	4.0%	5.5%			
50	0.6%	4.0%	4.6%			
55	0.2%	4.0%	4.2%			
60	0.0%	4.0%	4.0%			
65	0.0%	4.0%	4.0%			
Ref:	198					

# MISCELLANEOUS AND TECHNICAL ASSUMPTIONS JUNE 30, 2007

Marriage Assumption: 100% of males and 100% of females are assumed to be

married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female

spouses.

**Pay Increase Timing:** Beginning of (Fiscal) year. This is equivalent to assuming

that reported pays represent amounts paid to members

during the year ended on the valuation date.

**Decrement Timing:** Decrements are assumed to occur mid-year, with the

exception of normal and early retirement and T-DROP, which are assumed to occur at the beginning of the year.

Eligibility Testing: Eligibility for benefits is determined based upon the age

nearest birthday and exact fractional service on the date of

the valuation.

**Decrement Relativity:** Decrement rates are used directly from the experience

study, without adjustment for multiple decrement table

effects.

**Decrement Operation:** Disability does not operate during the first 5 years of

service. Disability and turnover do not operate during

retirement eligibility.

Normal Form of Benefit: The assumed normal form of benefit is the straight life

form.

**Incidence of Contributions:** Contributions are assumed to be received continuously

throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made. The payroll used for this purpose is payroll for all active members plus payroll for members who entered T-DROP on or after September

2003.

**Approximations:** Adjustments were made to liabilities for T-DROP to allow

for interest accumulation at 2% below the assumed rate of return and to reflect partial employer contributions for

people who entered T-DROP prior to September 2003.

**Loads:** A 1.0% load was included to account for subsidized

Options, Service Purchases, etc.

# **SECTION H**

GLOSSARY

#### GLOSSARY

**Accrued Service**. The service credited under the plan which was rendered before the date of the actuarial valuation.

**Accumulated Benefit Obligation**. The actuarial present value of vested and non-vested benefits based on service to date and past and current salary levels.

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability."

**Actuarial Assumptions**. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

**Actuarial Cost Method.** A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

**Actuarial Equivalent.** A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

**Actuarial Present Value**. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Actuarial Present Value of Credited Projected Benefits or Pension Benefit Obligation. The present value of future benefits based on service to date and the effect projected salary increases.

#### **GLOSSARY**

**Actuary**. A person who is trained in the applications of probability and compound interest to solve problems in business and finance that involve payment of money in the future, contingent upon the occurrence of future events. Most actuaries in the United States are Members of the American Academy of Actuaries. The Society of Actuaries is an international research, education and membership organization for actuaries in the life and health insurance, employee benefits, and pension fields. It administers a series of examinations leading initially to Associateship and the designation A.S.A. and ultimately to Fellowship with the designation F.S.A. The federal government certifies actuaries to practice under ERISA with the designation of E.A.

**Amortization**. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

**Experience 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, in accordance with the actuarial cost method being used.

**Normal Cost.** The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

**Plan Termination Liability**. The actuarial present value of future plan benefits based on the assumption that there will be no further accruals for future service and salary. The termination liability will generally be less than the liabilities computed on a "going concern" basis and is not normally determined in a routine actuarial valuation.

**Reserve Account**. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

*Unfunded Actuarial Accrued Liability*. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability."

**Valuation Assets**. The value of current plan assets recognized for valuation purposes. Generally based on book value plus a portion of unrealized appreciation or depreciation.

November 21, 2007

Mr. Paul Doane Executive Director Arkansas Teacher Retirement System 1400 West Third Little Rock, Arkansas 72201

Re: Report of June 30, 2007 Actuarial Valuation of Active and Inactive Members

Dear Mr. Doane:

Enclosed are 25 copies of the report. We will be sending the remaining 10 copies for Monday delivery. If you need anything else, please call.

Sincerely,

Judith A. Kermans

JAK:mrb Enclosures