CITY OF OMAHA EMPLOYEES' RETIREMENT SYSTEM

Valuation Report as of January 1, 2002

CITY OF OMAHA EMPLOYEES' RETIREMENT SYSTEM ACTUARIAL VALUATION REPORT

Table of Contents

	PAGE
Letter of Transmittal	
Executive Summary	1
Disclosure Items	
Assets	6
Liabilities	7
Contributions	9
GASB Disclosure	10
Appendices	
A. Summary of Membership Data	12
B. Summary of Plan Provisions	13
C. Actuarial Method and Assumptions	16

Board of Trustees City of Omaha Employees' Retirement System 1819 Farnam Street Omaha, NE 68183

Dear Members of the Board:

At your request, we have conducted our annual actuarial valuation of the City of Omaha Employees' Retirement System as of January 1, 2002 for the plan year ending December 31, 2002. The major findings of the valuation are contained in this report. Changes in plan provisions, actuarial assumptions, or methods from the prior valuation are noted in the report.

In preparing our report, we relied, without audit, on information (some oral and some written) supplied by the Retirement System. This information includes, but is not limited to, plan provisions, member data and financial information. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted principles and practices which 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.

We hereby further certify that all costs, liabilities, rates of interest and other factors for the System have been determined on the basis of actuarial assumptions and methods which are internally consistent, individually reasonable (taking into account the experience of the Plan and reasonable expectations of future experience); and which, in combination, offer our best estimate of anticipated experience under the Plan. Nevertheless, the emerging costs will vary from those presented in this report to the extent actual experience differs from that projected by the actuarial assumptions. The Retirement System has the final decision regarding the appropriateness of the assumptions and has adopted them as disclosed in this report.

March 12, 2003 Page 2

Actuarial computations presented in this report are for purposes of determining the actuarial contribution rate for funding the Plan. Determinations for purposes other than this may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes. Any distribution of this report must be in its entirety including this cover letter, unless prior written consent from Milliman USA is obtained.

I, Gregg Rueschhoff A.S.A., am a member of the American Academy of Actuaries and an Associate of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

I, Jason Speer A.S.A., am a member of the American Academy of Actuaries and an Associate of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

We respectfully submit the following report and look forward to discussing it with you.

Sincerely,

MILLIMAN USA, Inc.

Gregg Rueschhoff, A.S.A. Consulting Actuary

Jason Speer, A.S.A. Associate Actuary This report presents the results of the January 1, 2002 actuarial valuation of the City of Omaha Employees' Retirement System (the "System"). The primary purposes of performing the valuation are to:

- Determine the employer contribution rates required to fund the System on an actuarially sound basis,
- Disclose asset and liability measures as of January 1, 2002,
- Analyze and report on trends in System contributions, assets, and liabilities over the past two years,

The valuation results provide a "snapshot" view of the System's financial condition on January 1, 2002 using updated System Asset values at December 31, 2002. The valuation results reflect a significant increase in the Unfunded Actuarial Liability and related Actuarial Contribution rate. The reasons for the increase include losses on investments and demographics, changes in actuarial assumptions and benefit improvements. Each component of change in the Unfunded Actuarial Liability and the Actuarial Contribution Rate are identified in this Executive Summary.

The Service Retirement Pension multiplier changed from the prior actuarial valuation from 2.0% to 2.10% of Average Final Monthly Compensation times years of credited service. It is also scheduled to increase to 2.25% in 2003. In addition, the Service Retirement Pension can now be received unreduced if a participant's age plus service equals or exceeds 80. As a result, the City and member contributions have also increased. This valuation reflects these changes. More detail on the plan provisions is available in the Appendix section of this report.

Two assumption changes since the prior valuation are reflected in this report. The first assumption change is a change in assumed mortality table. The mortality table was changed from the 1983 Group Annuity Mortality Table to the 1994 Group Annuity Reserve Mortality Table. The second assumption change was a change in the discount rate to recognize the effect of the market decline (both realized and unrealized) on System Assets during 2002. The assumed interest rate was changed to 1.3% for 2002 and 2003 and then "pops up" to 7.5% after 2003. This change has the effect of increasing the Unfunded Actuarial Liability and related Actuarial Contribution Rate to be more in line with the expected values of these statistics in 2003 and beyond.

The effect of the assumption changes is significant. The Unfunded Actuarial Liability increased approximately \$38.3 million and the Actuarial Contribution Rate increased approximately 4.1% of pay due to the changes in assumptions. Even though the effect of the changes is significant, we believe the changes are warranted.

The actuarial funding method was changed to the Entry Age Normal Cost Method effective for this valuation. This method will allow for a more stable contribution rate from year to year as compared to the prior method. More details on the Entry Age Normal Cost method can be found in Appendix C of this report.

Several factors contributed to the change in the System's assets, liabilities and recommended contribution rate between January 1, 2000 and December 31, 2001.

Assets

As of January 1, 2002, the System had total funds, when measured on an actuarial value basis, of \$244.2 million. This was an increase of \$23.1 million from the January 1, 2000 figure of \$221.1 million. However, we expected an increase of \$26.5 million over that time period.

The components of the change in the actuarial value of assets (in millions) are set forth below:

	Actuarial Value	Market Value
Assets, January 1, 2000	\$ 221.1	\$ 238.3
 employer and member contributions 	+ 13.8	+ 13.8
benefit payments	- 21.3	- 21.3
net investment income (expected)	+ 34.0	+ 36.5
• net investment actuarial gain/(loss)	<u>+ (3.4)</u>	<u>- 33.1</u>
Assets, December 31, 2001	\$ 244.2	\$234.2
Assets, December 31, 2001		

The market value of assets is not used directly in the actuarial calculation of the Plan's funded status and the recommended contribution. An asset valuation method is used to smooth the effects of market fluctuations. The actuarial value of assets is equal to the expected asset value (based on last year's actuarial value of assets, net cash flows and a rate of return equal to the actuarial assumed rate of 7.5%) plus 25% of the difference between the actual market value and the expected asset value. See page 6 for the detailed development of the actuarial value of assets as of January 1, 2002.

Liabilities

The actuarial liability (also referred to as past service liability) is the portion of the present value of projected benefits that will not be paid by future employer normal costs or member contributions. The difference between this liability and asset values at the same date is referred to as the unfunded actuarial liability. The unfunded actuarial liability will be reduced if the employer's contributions exceed the employer's normal cost for the year, after allowing for interest earned on the previous balance of the unfunded actuarial liability. Benefit

Executive Summary

improvements, actuarial gains and losses, and changes in actuarial assumptions and procedures will also impact the total actuarial liability and the unfunded portion thereof.

Between January 1, 2000 and December 31, 2001 the change in the unfunded actuarial liabilities for the System was as follows (in millions):

	Value
Unfunded Actuarial Liability, January 1, 2000	\$16.3
• investment (gain)/loss vs. expected	3.4
• change in assumptions	38.3
increase due to benefit improvements	23.1
liability loss from actual experience	6.9
• expected increase/(decrease) due to amortization method Unfunded Actuarial Liability, January 1, 2002	<u>(0.9)</u> \$87.1

Contributions

Under the Entry Age Normal Method, contributions to the System consist of:

- a "normal cost" for the portion of projected liabilities attributable to service of members during the year following the valuation date, and
- an "unfunded actuarial liability" contribution for the excess of the portion of projected liabilities allocated to service to date over assets on hand.

The System's total actuarially determined contribution rate (payable as a % of member payroll) increased by **7.53**% of pay, to **18.11**% on January 1, 2002, from 10.58% on January 1, 2000. The primary components of this change are as follows:

	Rate
Total Actuarial Contribution Rate, January 1, 2000	10.58%
Actuarial (Gain)/Loss	2.30
Actuarial Method Change	(2.89)
Benefit Improvements	4.04
Assumption Changes	4.08
Total Actuarial Contribution Rate, January 1, 2002	18.11%

See page 9 for a detailed calculation of the Actuarial Contribution Rate as of January 1, 2002.

Executive Summary

Observations

Currently, the City is scheduled to contribute 8.025% of payroll beginning in December, 2003. Member contributions are scheduled to increase to 6.825% in December, 2003. This combined actual

contribution rate of 14.85% is 3.26% of payroll under the Actuarial Contribution Rate of 18.11%. If this deficit persists and other extraordinary favorable experience does not produce significant actuarial gains, in the near future we expect the "spread" between the Actuarial Contribution Rate and the actual contribution (city plus member) to widen. We strongly recommend that this actuarial "imbalance" be addressed and steps should be taken to close the gap between the Actuarial Contribution Rate and the actual contribution rate.

Summary of Principal Results

		January 1, 2000 Valuation	January 1, 2002 Valuation
1.	Participant Data	<u>,</u>	<u> </u>
	Number of:		
	Active Members	1,394	1,414
	Service Retirements	554	591
	Surviving Spouses and Children	243	226
	Disabled	71	82
	Deferred Vested	38	55
	Annual Salaries of Active Members	\$50,227,535	\$54,174,582
	Average Per Member	36,031	38,313
2.	Assets and Liabilities		
	Total Actuarial Liability	\$237,394,055	\$331,322,897
	Assets for Valuation Purposes	221,099,316	244,219,387
	Unfunded Actuarial Liability	16,294,739	87,103,510
1.	Employer Contribution Rates as a Percent of Projected Covered Payroll		
	Normal Cost	2.52%	2.66%
	Amortization of Unfunded Liability	3.21%	8.62%
	Actuarial Contribution Rate	5.73%	11.28%

Actuarial Value of Assets

Neither the market value of assets, representing a "cash-out" value of Plan assets, nor the book values of assets, representing the cost of investments, may be the best measure of the System's <u>ongoing</u> ability to meet its obligations.

To arrive at a suitable value for the actuarial valuation, a technique for determining the actuarial value of assets is used which dampens swings in the market value while still indirectly recognizing market values. The specific technique follows:

- Step 1: Determine the expected value of plan assets at the current valuation date using the actuarial assumption for investment return and the actual receipts and disbursements of the fund since the previous actuarial valuation.
- **Step 2:** Subtract the expected value determined in Step 1 from the total market value of the Fund at the current valuation date.
- **Step 3:** Multiply the difference between market and expected values determined in Step 2 by 25%.
- Step 4: Add the expected value of Step 1 and the product of Step 3 to determine the actuarial value of assets.

1.	Actuarial Value of Assets as of January 1, 2000	\$ 221,099,316
2.	Actual Receipts/Disbursements a. Total Contributions b. Benefit Payments c. Net Change	13,825,630 (21,313,594) (7,487,964)
3.	Expected Investment Earnings	33,951,818
4.	Expected Actuarial Value of Assets as of January 1, 2002	247,563,170
5.	Market Value as of January 1, 2002	234,188,039
6.	Difference Between Market and Expected Values	(13,375,131)
7.	Actuarial Value of Assets as of January 1, 2002 (4 + 25% of 6)	\$ 244,219,387

Actuarial Valuation Detail Actuarial Balance Sheet

An actuarial statement of the status of the plan in balance sheet form as of January 1, 2002 is as follows:

	January 1, 2000	January 1, 2002
Assets		
Fund	\$221,099,316	\$244,219,387
Present Value of: Member Contributions City Contributions – necessary to balance unfunded liability	21,148,107 10,249,120	31,677,757 7,722,031
Unfunded Liability (Balance)	16,294,739	87,103,510
Total	\$268,791,282	\$370,722,685
Liabilities		
Inactive Members: Service Retirements Disability Retirements Surviving Spouses and Children Lump Sum Death Benefits Terminated Vested Total Inactives	76,501,348 9,524,992 14,322,027 2,227,630 3,054,825 \$105,630,822	107,348,179 14,145,846 17,711,024 1,596,333 4,825,676 \$145,627,058
Active Members: Service Retirements Disability Retirements Death Benefits Withdrawal Benefits Total Active	137,498,724 8,448,677 11,610,890 5,602,169 \$163,160,460	202,039,447 9,678,643 5,692,562 7,684,975 \$225,095,627
Total	\$268,791,282	\$370,722,685

Actuarial Valuation Detail

UNFUNDED ACTUARIAL LIABILITY

The actuarial liability is the portion of the present value of future benefits which will not be paid by future normal costs. The actuarial value of assets is subtracted from the actuarial liability to determine the unfunded actuarial liability.

1. Present Value of Future Benefits	\$ 370,722,685
2. Present Value of Future Normal Costs	39,399,788
3. Actuarial Liability (1) – (2)	331,322,897
4. Actuarial Value of Assets	244,219,387
5. Unfunded Actuarial Liability (3) – (4)	\$ 87,103,510

Actuarial Valuation Detail

DEVELOPMENT OF ACTUARIAL CONTRIBUTION RATE

The actuarial cost method used to determine the required level of annual contributions to support the expected benefits is the Entry Age Normal Cost Method. Under this method, the total cost is comprised of the normal cost rate and the unfunded actuarial liability payment. The Plan is financed by contributions from the employees and the City.

1. (a) Normal Cost (Adjusted to Mid-Year)	\$ 5,254,245
(b) Covered Payroll for Members Under	
Assumed Retirement Age	\$ 55,366,125
(c) Normal Cost Rate	
(a) / (b)	9.49%
2. Unfunded Actuarial Liability/(Surplus)	\$ 87,103,510
at Valuation Date	
3. Amortization Factor to Pay UAL as a	
Level Percent of Payroll over 30 Years	18.923
4. Unfunded Actuarial Liability/(Surplus) Payment	
(Adjusted to Mid-Year)	
$[(2) / (3)] \times 1.075^{1/2}$	\$ 4,772,560
5. Total Actuarial Contribution 1(c) + 4	\$ 10,026,805
· ·	
6. Total Projected Payroll for the Year	\$ 55,366,125
7. Total Contribution as a Percent of Pay	
(5) / (6)	18.11%

Governmental Accounting Standards Board Disclosure

Schedule of Funding Progress

In accordance with Statement No. 25 of the Governmental Accounting Standards Board

The Governmental Accounting Standards Board (GASB) requires retirement systems (and employers) to provide certain financial disclosures. Effective for fiscal year beginning July 1, 1996, the required disclosures for the System have changed as required by GASB Statement 25.

(All Dollar Amounts in Millions)

Actuarial Valuation Date	Market Value of Assets (a)	Actuarial Accrued Liability (AAL)* (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (P/R)** (c)	UAAL as a Percentage of Covered P/R [(b-a)/c]
6/30/91	105.9	94.9	(11.0)	111.6%	39.6	(27.8)%
6/30/92	122.0	100.4	(21.6)	121.5%	N/A	N/A
6/30/93	142.7	112.1	(30.6)	127.3%	44.3	(69.1)%
6/30/94	139.5	118.1	(21.4)	118.1%	N/A	N/A
6/30/95	162.2	131.1	(31.1)	123.7%	47.0	(66.2)%
6/30/96	183.0	N/A	N/A	N/A	N/A	N/A
6/30/97	204.3	184.9	(19.4)	110.5%	49.0	(39.6)%
12/31/98	228.6	218.2	(10.4)	104.8%	50.2	(20.7)%
12/31/99	238.3	225.8	(12.5)	105.5%	51.7	(24.2)%
12/31/00	252.3	231.3	(21.0)	109.1%	52.7	(39.8)%
12/31/01	234.8	244.3	9.5	96.1%	56.4	16.8%

^{*} This amount is based on the Projected Unit Credit method. The Entry Age method is used to determine the required contribution.

^{**} Projected for the twelve-month period beginning on the valuation date.

Governmental Accounting Standards Board Disclosure

Schedule Of Employer Contributions

(All Dollar Amounts in Millions)

Fiscal Year Ending	Covered Employee Payroll (1)	Actual Employer Contributions (2)	Actual Employer Contribution %(2)	Annual Required Contribution (ARC) %(3)	Annual Pension Cost (APC)	Percentage of APC Contributed
6/30/91	39.6	2.16	5.20%	5.17	2.05	105%
6/30/92	N/A	2.23	5.20	5.17	N/A	N/A
6/30/93	42.9	2.23	5.20	4.76	2.22	100%
6/30/94	44.4	2.31	5.20	4.76	2.11	109%
6/30/95	45.4	2.36	5.20	4.76	2.16	109%
6/30/96	47.7	2.48	5.20	4.78	2.28	109%
6/30/97	49.6	2.58	5.20	4.78	2.37	109%
12/31/98	52.3	3.13	5.99	5.91	3.11	101%
12/31/99	51.7	3.13	6.05	5.91	3.08	102%
12/31/00	52.7	3.28	6.05	5.73	3.04	108%
12/31/01	56.4	3.42	6.05	5.73	3.26	105%

⁽¹⁾ Computed as the dollar amount of the actual employer contribution made as a percentage of payroll divided by the contribution rate, expressed as a percentage of payroll. Payroll is estimated for years where no valuation was done.

⁽²⁾ The actual and required employer contributions are expressed as a percentage of payroll.

⁽³⁾ The ARC (as a percentage of payroll) is assumed to remain the same as the prior year when no valuation was performed.

	<u>January 1, 2000</u>	January 1, 2002
ACTIVE MEMBERS		
Total Reported Annual Compensation	\$50,227,535	\$54,174,582
Average Per Member	36,031	38,313
Average Attained Age	46.1	46.5
Average Hire Age	33.7	33.8
Average Past Service	12.4	12.5
NON-ACTIVE MEMBERS		
Service Retirements	554	591
Surviving Spouses & Children	243	226
Deferred Vested	38	55
Disabled	71	82
Annual Pension Benefit		
Service Retirements	\$ 6,773,388	\$ 8,711,691
Surviving Spouses	1,291,488	1,543,929
Disabled	683,484	847,574
Average Attained Age		
Service Retirees	71.4	70.5
Disability Retirees	53.0	52.7
Surviving Spouses	74.5	73.9

Appendix B

Summary of Plan Provisions

Effective Date: Section 22-21 January 1, 1949.

Active Member: Section 22-24 & 25 All City employees except: policemen; firemen; persons paid on a contractual or fee basis; seasonal, temporary and part-time employees; and elective officials who do not make written application.

Average Final Monthly Compensation Section 22-23 The member's highest consecutive 26 pay periods of compensation during the final 60 months of service as a member, divided by 12.

Member Contributions: Section 22-26(a) Effective December 22, 2002, each member will contribute 5.7% of total compensation. This will increase to 6.825% on December 21, 2003. Interest is currently credited at 1.7% on member contributions.

City of Omaha Contributions Section 22-26(e) Effective December 22, 2002, the City will contribute an amount equal to 6.90% of each member's total compensation. This will increase to 8.025% on December 21, 2003.

Service Credits: Section 22-28 and 29 The member shall receive membership service credit for each full pay period of employment. Intervening periods of military service in time of emergency shall be counted provided the member is honorably discharged and returns to work within 90 days after such discharge.

Membership credits shall be earned by those receiving a disability pension. However, the total credited service will not exceed 30, unless more than 30 years were earned as an active member.

Service Retirement Eligibility: Section 22-30

Effective June 19, 2001, a member is eligible to retire after age 50 if their age plus service is 80 or more. Otherwise, a member is eligible to retire after age 55 and 5 years of service. The pension is reduced 8% for year prior to age 60. No reduction applies if age plus service is 80 or more.

Summary of Plan Provisions

Service Retirement Pension: Section 22-32 A monthly pension equal to 2.1% of Average Final Monthly Compensation times years of credited service. Effective December 21, 2003, a monthly pension equal to 2.25% of Average final monthly compensation times years of credited service.

Disability Benefits: Section 22-35 If permanently disabled with five years of service, the member shall receive 60% of final monthly compensation offset by Social Security and workers' compensation benefits. Payment for all medical, surgical and hospital expenses incurred is made if disability is service related. Not payable while full salary continues.

Spouse's Pension:

1. Death of Active Member: Section 22-36

A monthly pension equal to 75% of the member's accrued pension is paid to the surviving spouse until death or remarriage. The member must have had five years of service or had a service-connected death and six months of service.

2. Death of Member Eligible for Retirement or Death of Retired Member Section 22-36 If legally married to the member for at least one year, surviving spouse shall be entitled to 75% of the pension the member was receiving or was eligible to receive at the time of death. Upon the spouse's remarriage, all benefits cease.

Children's Pension: Section 22-36 Upon the death of an active or retired member, the following benefit will be paid to the surviving children until age 18 or prior to death or marriage, except that if a child is totally disabled, the full pension continues until the cessation of total disability or dependency for support, whichever occurs first:

Number of	Percentage		
Dependent Children	of Accrued Benefit		
1	5%		
2	10%		
3	15%		
4 or more	20%		

Summary of Plan Provisions

Lump Sum Death Benefits:

1. Active Member without Eligible Dependents: Section 22-37

Accumulated member's contributions, plus \$5,000.

2. Retired Member Without Eligible Dependents: Section 22-37

Accumulated member's contribution less previous pension payments made, plus \$5,000.

3. Active Member with Eligible Dependents: Section 22-37

\$5,000.

4. Retired Member with Eligible Dependents: Section 22-37

\$5,000.

Vesting:

Section 22-39

Upon severance of employment by a member with less than 5 years of service and prior to obtaining eligibility under Section 22-30, a refund of such member's accumulated contributions, including credited interest, will be paid.

Section 22-40

Upon severance of employment by a member with more than 5 years of service and prior to obtaining eligibility for retirement, the member may elect, in lieu of receiving a refund of contributions, to receive a monthly pension, reduced for early retirement if applicable, commencing at or above age 55. Such deferred pension shall be based on service credited to the date of severance.

Supplemental Pension: Section 22-123 Retirees (including widows, widowers and children) receive a supplemental pension (Cost of Living Adjustment - COLA) after five years equal to the lesser of 3% or \$50 per month. The COLA is granted for the full remaining period that benefits are payable. No COLA's will be available for members who retire after January 28, 1998.

ACTUARIAL METHOD

Valuation of the plan use the "entry age-normal" cost method. Under this actuarial method, the value of future costs attributable to future employment of participants is determined. This is called <u>present value of future normal costs</u>. The following steps indicate how this is determined for benefits expected to be paid upon normal retirement.

- 1. The expected pension benefit at normal retirement is determined for each participant.
- 2. A <u>normal cost</u>, as a level percent of pay, is determined for each participant assuming that such level percent is paid from the employee's entry age into employment to his normal retirement. This normal cost is determined so that its accumulated value at normal retirement is sufficient to provide the expected pension benefits.
- 3. The sum of the normal costs for all participants for one year determines the total normal cost of the plan for one year.
- 4. The value of future payments of normal cost in future years is determined for each participant based on his years of service to normal retirement age.
- 5. The sum of the value of future payments of normal cost for all participants determines the present value of future costs.

The value of future costs attributable to past employment of participants, which is called the <u>accrued liability</u> is equal to the present value of benefits less the present value of future normal costs. The <u>unfunded accrued liability</u> is equal to the excess of the accrued liability over assets. The unfunded accrued liability is amortized as a level percent of pay over 30 years.

As experience develops with the plan, actuarial gains and actuarial losses result. These actuarial gains and losses indicate the extent to which actual experience is deviating from that expected on the basis of the actuarial assumptions. In each year, as they occur, actuarial gains and losses are recognized in the unfunded accrued liability as of the valuation date.

Appendix C

Actuarial Methods and Assumptions

Interest: 1.3% for 2002 and 2003. 7.5% thereafter.

Salary Increases: 4.5% per year.

Service Retirement Age: Rate 55-56 6% 7% 57 58 8%59 9% 60-61 10% 62 30% 20% 63-64 65+100%

Mortality:

Turnover:

Active Members and Pensioners 1994 Group Annuity Reserve Mortality Table.

Disabled Railroad Retirement Board Disabled Pensioners

Mortality.

Disability: Graduated rates.

Percent Married at Death

or Retirement

Average Number of Children

per Married Member

75%

1

Rates of turnover based on attained age of member.

Assets: For the actuarial valuation on January 1, 2002,

actuarial value of assets equals 3/4 of Expected

Value, plus 1/4 of Market Value.

SAMPLE RATES

	ANNUAL RATE			
Age	Mortality		Disability	Turnover
	Male	Female		
20	.05%	.02%	.09%	18.2%
30	.08	.04	.11	13.7
40	.11	.07	.15	9.8
50	.26	.14	.33	3.1
60	.80	.44	1.18	.0
70	2.37	1.37		
80	6.20	3.94		
90	15.29	11.63		