1972

ACTUARIAL REPORT

EMPLOYEES' RETIREMENT ASSOCIATION

OF THE

COUNTY OF FRESNO

Made to the Board of Retirement
As of June 30, 1972

COATES, HERFURTH & ENGLAND

CONSULTING ACTUARIES
320 CALIFORNIA STREET
SAN FRANCISCO 94104
TELEPHONE (415) 433-4440

October 31, 1972

Board of Retirement Employees' Retirement Association County of Fresno P.O. Box 747 Fresno, California 94712

Gentlemen:

Pursuant to our agreement with you, we have completed an actuarial investigation and valuation of the County's Retirement System as of June 30, 1972. We are pleased to hand you herewith our report on the results of the valuation and our recommendations with respect to both the present system and certain proposals which you have asked us to study.

We wish to express our appreciation for the cooperation extended to us during the course of this survey.

Respectfully submitted,

COATES, HERFURTH & ENGLAND Consulting Actuaries

Robert D. Drisko

RDD/dbz Enclosure

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ACTUARIAL REPORT

EMPLOYEES' RETIREMENT ASSOCIATION

COUNTY OF FRESNO

AS OF JUNE 30, 1972

· SECTION I

INTRODUCTION

Section 31453 of the County Employees Retirement Law of 1937 provides as follows:

"An actuarial valuation shall be made within one year after the date on which any system established under this chapter becomes effective, and thereafter at not to exceed five-year intervals. The valuation shall be conducted under the supervision of an actuary and shall cover the mortality, service, and compensation experience of the members and beneficiaries, and shall evaluate the assets and liabilities of the retirement fund. Upon the basis of the investigation, valuation, and recommendation of the actuary, the board of retirement shall recommend to the board of supervisors such changes in the rates of interest, in the rates of contribution of members, and in county and district appropriations as are necessary....No adjustment shall be included in the new rates for time prior to the effective date of the revision."

The last investigation and valuation of the System was made as of June 30, 1967. In accordance with the foregoing provision of the Retirement Law, the Board of Retirement has requested the current investigation and valuation to be made as of June 30, 1972, covering the experience under the System during the five years prior to June 30, 1972.

Following the format used previously, the report has been assembed in sections that cover: 1) the membership data upon which the survey was based, 2) investigation of actuarial factors that lead to the determination of members' contribution rates, 3) the investigation of other actuarial contingencies that permit the valuation of prospective assets and liabilities for the present membership and 4) our recommendations as to the County rates of contribution to fund the net liabilities resulting from the valuation.

In addition to the above, the report contains a section indicating the cost of implementing Section 31870.1 which provides for annual cost of living increases to retired members limited to a maximum of 3% per year. The rates of contribution for cost of living have been determined on a refundable basis geared to age at entry, sex, and classification (general or safety). Section VII of the report describes an alternative method of funding which permits a substantial reduction in the County's annual contribution to the Retirement System.

SECTION II

MEMBERSHIP DATA

The Retirement System furnished us with the following information on each member of the System who was active on June 30, 1972.

- Name 1.
- 2. Sex
- 3. Date of birth
- 4. Date of membership
- 5. Rate of contribution
- 6. Monthly compensation earnable
- 7. Accumulated contributions as of June 30, 1972
- Classification (general or safety)
 Integration (modified or unmodified)

In addition to the above, we were furnished with the following data on each person receiving an allowance from the Retirement System as of June 30, 1972:

- 1. Name
- 2. Sex
- 3. Date of birth
- 4. Date of retirement
- 5. Type of retirement
- 6. Option selected
- 7. Monthly annuity
- 8. Current service pension
- 9. Prior service pension
- 10. Beneficiary's date of birth, sex and marital relation, if any, to member

In addition to the above information on retired persons, we were furnished with similar information on all retired members who had died during the five years or had been reinstated from retirement status. Similar information was given on all employees who had been active members of the System at any time between July 1, 1967 and June 30, 1972, and who during that period withdrew, died in service, or retired for either disability or service.

The Retirement Board also supplied us with a financial statement and balance sheet of the Retirement Fund as of June 30, 1972, and this statement of assets and liabilities was accepted by us without further verification and used in the determination of net liabilities. The accounting balance sheet is reproduced on the following page.

ACCOUNTING BALANCE SHEET

AS OF JUNE 30, 1972

ASSETS

Cash Investments		\$ 652,572.50 36,802,559.92
		\$ 37,455,132.42
LIABILITIES		e e
Members' accumulated contributions		\$ 13,889,867.57
Accumulated County contributions: a) Current service benefits b) Prior service benefits c) Death benefits	\$ 5,230,630.73 494,488.48 8,160.25	\$ 5,733,279.46
Reserves for allowances in effect: a) Annuities b) Current service pensions c) Survivor's death benefit reserve d) Prior service pensions	\$ 3,670,270.12 11,146,531.81 336,591.28 1,475,987,17	\$ 16,629,380.38
Surplus		\$ 1,202,605.01
Total liabilities		\$ 37,455,132.42

SECTION III

MEMBER CONTRIBUTION RATES

The basis for determining the normal rates of contribution by members is set forth in several sections of the County Retirement Law.

Section 31621 provides as follows:

"The normal rates of contribution except for members covered by Article 6.8 shall be such as will provide an average annuity at age 60 equal to one one-hundred-twentieth of the final compensation of members not covered by Article 6.8, according to the tables adopted by the board of supervisors, for each year of service rendered after entering the system."

Section 31639.25 provides as follows:

"The normal rates of contributions shall be such as will provide an average annuity at age 50 equal to one one-hundredth of the final compensation of safety members according to the tables adopted by the board of supervisors for each year of service rendered after entering the system."

Sections 31620 and 31639.1 of the County Law provide that the contribution rates of members shall be based on sex and age at nearest birthday at the time of entrance into the Retirement System.

Section 31453 provides for an adjustment in such rates of contribution in the light of changes in the rate of interest and changes in other factors as a result of the investigation; this section further provides that no adjustment shall be included in the new rates for time prior to the effective date of the revision.

Section 31812 of the County Law provides as follows for members who are subject to the provisions of Article 13, which provides for the integration of the System with Federal Social Security:

"Each member shall continue to contribute as provided for in Article 6 of this chapter less an amount equal to one-third of that portion of such contribution which is payable with respect to the first three hundred fifty dollars (\$350) monthly wage."

In order that rates of contribution can be calculated in accordance with the above provisions, it is necessary to adopt assumptions with respect to the following three factors which enter into the calculations:

- 1. The interest rate assumed on earnings of the funds of the System.
- 2. The mortality experience anticipated among members who have retired for service.
- 3. The relative average increase anticipated in the salary of members as they advance in age under the System.

All of the above factors and the assumptions that have been made with regard to each are discussed in the following paragraphs:

Rate of Interest

The last actuarial valuation, made in 1967, was completed on the basis of a long-term interest assumption of 4% per annum, which was justifiable at that time in the light of earnings. Since then, current investments have been made at improved yields, and the interest earned by the retirement fund has increased. Considering this, we agree with the decision of the Retirement Board that it is realistic to recognize these higher earnings. We, therefore, have assumed an interest rate of 4-3/4% per annum for the valuation of the prospective assets and liabilities of the fund.

Mortality after Service Retirement

During the last five years, the experience has shown that among members who have been retired for service, 98 died. According to the mortality tables that have been used, 82 deaths were anticipated. Over the past ten years, the corresponding figures are 159 actual deaths as compared to 148 expected deaths. In view of the above as well as our experience with the other counties, we recommend you adopt a table with a longer life expectancy. We recommend you adopt the same mortality table you are now using, but with the ages set back one year. The designation of this table would be 1951 Group Annuity Mortality Table with ages set back one year. We have used this table in the current valuation.

Salary Scales

For the purposes of calculating member contribution rates and also to determine the value of benefits that are based upon final compensation, salary scales were developed, based upon the membership data, to measure the relative increases in salaries that would be anticipated, on the average, as members advance in age under the system. It should be understood that no attempt is made, in determining the salary scales, to anticipate changes in the general level of compensation that may result because of changing economic conditions, i.e., inflation. These scales are used in the valuation and in the determination of contribution rates to indicate the average relationship existing between compensation at different ages, on the average, in accordance with the present level of salaries. The inflation that has already occurred is reflected at the time of each valuation.

Member Rates of Contribution

The revised schedule of members' rates of contribution was, therefore, calculated in accordance with the formula prescribed in the County Law and based upon the three assumptions discussed in the preceding paragraphs. The reduction in contribution rates has resulted from the change in interest rate from 4% to 4-3/4%, partially offset by the new mortality basis which provides for longer life expectancies as shown in Schedule VIII of our report. The change in interest assumption tends to reduce contribution rates, while the change to an improved mortality basis tends to increase contribution rates. The revised schedule shows that the net effect has caused a reduction in rates of contribution for all ages at entry.

The revised schedules of member rates of contribution are shown on the following pages and, in our opinion, these are the rates which comply with the provisions of Sections 31621 and 31812 of the County Law for miscellaneous members and Sections 31639.25 and 31812 for safety members, and the assumptions adopted as discussed in the preceding paragraphs.

Although the 1937 County Law does not specify the date on which changes in contribution rates are to be made effective, we would recommend that the new rates be put into effect as soon as possible, but upon a date that would be convenient to the administration of the System.

EMPLOYEES' RETIREMENT SYSTEM

June 30, 1972

Rates of Contribution

Miscellaneous Members

Male

Age at Entry	Rate Applicable to 1st \$350 Excess	Age at <u>Entry</u>	Rate Appli	cable to Excess
16 17 18 19	2.71% 4.06% 2.72 4.08 2.74 4.11 2.77 4.15	40 41 42 43 44	4.05% 4.14 4.24 4.33 4.44	6.07% 6.21 6.36 6.50 6.66
20	2.79 4.18	45	4.54	6.81
21	2.82 4.23	46	4.65	6.97
22	2.85 4.28	47	4.76	7.14
23	2.89 4.34	48	4.87	7.31
24	2.93 4.40	49	4.99	7.48
25	2.98 4.47	50	5.11	7.66
26	3.03 4.55	51	5.23	7.84
27	3.09 4.63	52	5.35	8.02
28	3.14 4.71	53	5.47	8.21
29	3.20 4.80	54	5.60	8.40
30	3.27 4.90 3.33 5.00 3.40 5.10 3.47 5.21 3.55 5.32	55	5.73	8.60
31		56	5.87	8.80
32		57	6.00	9.00
33		58	6.14	9.21
34		59	6.29	9.43
35 36 37 38 39	3.62 5.43 3.70 5.55 3.79 5.68 3.87 5.80 3.96 5.94			

EMPLOYEES' RETIREMENT SYSTEM

June 30, 1972

Rates of Contribution

Miscellaneous Members

Female

Age at Entry	Rate Applicable to 1st \$350 Excess	Age atEntry	Rate Appli 1st \$350	icable to Excess
16 17 18 19	3.03% 4.55% 3.06 4.59 3.09 4.63 3.11 4.67	40 41 42 43 44	4.68% 4.78 4.89 4.99 5.11	7.02% 7.17 7.33 7.49 7.66
20	3.15 4.72 3.20 4.80 3.25 4.88 3.31 4.97 3.37 5.06	45	5.21	7.82
21		46	5.33	8.00
22		47	5.45	8.17
23		48	5.57	8.35
24		49	5.69	8.54
25	3.44 5.16 3.51 5.26 3.57 5.36 3.65 5.47 3.72 5.58	50	5.81	8.72
26		51	5.94	8.91
27		52	6.07	9.11
28		53	6.20	9.30
29		54	6.34	9.51
30	3.79 5.69 3.87 5.81 3.95 5.93 4.03 6.05 4.12 6.18	55	6.48	9.72
31		56	6.62	9.93
32		57	6.76	10.14
33		58	6.91	10.36
34		59	7.05	10.58
35 36 37 38 39	4.21 6.31 4.30 6.45 4.39 6.59 4.49 6.73 4.58 6.87	•		

EMPLOYEES' RETIREMENT SYSTEM

June 30, 1972

Rates of Contribution

Safety Members

Age at	Rate Applic	able to
Entry	1st \$350	Excess
21	5.36%	8.04%
22	5.46	8.19
23	5.57	8.35
24	5.67	8.51
25	5.79	8.68
26	5.90	8.85
27	6.02	9.03
28	6.13	9.20
29	6.26	9.39
30	6.38	9.57
31	6.51	9.76
32	6.64	9.91
33	6.77	10.16
34	6.91	10.36
35	7.05	10.57

SECTION IV

VALUATION OF RETIREMENT SYSTEM

To determine the actuarial value of the liabilities with respect to the present membership on account of benefits that are anticipated as payable, and to determine the value of the future contributions expected to be made by members, it is first necessary to study the experience under the System with respect to such contingencies as withdrawal, death, disability, and service retirement. Assumptions are then made, based upon past experience, to develop actuarial factors to be applied to the present membership data, the fundamental assumption being that the experience to be anticipated in the future will follow that of the past.

It is also necessary to adopt a basis by which to measure the mortality expected among members who are retired for either service or disability. The mortality assumption after service retirement has been discussed previously, in connection with the development of the member contribution rates.

Except for the last, none of the foregoing contingencies affect the calculation of members' contribution rates; they affect only the determination of prospective liabilities and assets from which the net liabilities that are to be funded by the County can be determined.

It must be noted here that actual experience among your safety members was not obtainable. However, we recently examined the experience of the safety member category in a nearby County which has had special benefits for safety members for some years. We felt that this experience would be the most adequate on which to rely in the actuarial valuation of your safety group; the rates of separation for withdrawal, death, disability, retirement and service retirement are indicated in Schedule VII of this report. We believe this would be especially true in the case of the relatively new 2% at age 50 formula.

All of these contingencies were studied as part of the investigation of miscellaneous members, and the results and the assumptions that were made for each of them are discussed in the paragraphs that follow:

Mortality after Disability Retirement

Since there were 79 members receiving allowances on account of disability retirement as of June 30, 1972, it was considered feasible to study the mortality that was experienced. During the last five years, the experience has shown that among members who have been retired for disability, 17 died, and according to the mortality tables that have been used, 20 were anticipated. Because the experience is small, we feel that

such variation is not statistically significant. We believe that the present mortality table is still an adequate table to measure the anticipated mortality among such retired members, and our studies for other County Systems confirm this. Therefore, we do not recommend a change in the table presently being used. The life expectancies after disability retirement are shown in Schedule IX of our report.

Rates of Withdrawal

As we have done in the past, the rates of withdrawal that have been adopted were based upon the experience among members who had accrued three or more years of service. The turnover among members with less than three years of service is, of course, higher, but the financial effect upon the System is small.

The investigation revealed that, for both male and female employees, the experience during the five years has again indicated a lesser turnover rate than had been anticipated by the prior experience. For the current valuation, therefore, the rates of withdrawal for miscellaneous males and for miscellaneous females have been reduced at all ages. The effect of a reduction in withdrawal rates is to increase costs, since the result is to anticipate that a greater number of employees will eventually retire.

Death before Retirement

The experience during the five years shows that there were 24 deaths among miscellaneous male employees while in active service. This was a lesser number than anticipated by the death rate previously established from the last investigation. However, if the experience of the period July 1, 1962 through June 30, 1967 is combined with that of the later five years, the expected deaths amount to 72, compared with 56 actual deaths. Among miscellaneous female employees, the five years' experience recorded 7 deaths, which was less than the number anticipated by the death rate assumed from the previous valuation. Again, combining the total ten years' experience, however, there were 17 actual deaths among females, as opposed to 40 expected deaths. Therefore, the death rate for males were reduced approximately 10% at all ages with a corresponding reduction for females of approximately 30%.

Disability Retirement

Among the miscellaneous male employees, 25 disability retirements were reported during the five years, which was much higher than the 15 cases anticipated. The rate of disability retirement was increased accordingly. Of the total male disability retirements reported, 5 were service-connected and, therefore, proper adjustment was made in the calculation of disability benefits to reflect the added costs of benefits in the case of

disability in the line of duty. Among the miscellaneous female employees, 20 disabilities were reported during the five years, whereas, by previous assumptions, only 14 would have been anticipated. Of the 20, 2 were reported to have occurred in the performance of duty. Therefore, the rate for disability retirement among females has been increased and the proper adjustment made in the calculation of benefits to reflect the added cost of possible line-of-duty benefits.

Service Retirement

Under service retirement, the experience of the last five years again shows an increase in the percentage of male employees retiring before age 65. However, there is still a tendency for some male employees to delay retirement well beyond age 65. There was also a slight increase in the number of females retiring prior to age 65 over the number anticipated. For both males and females, therefore, adjustments in the assumed rates of retirement were made to reflect the pattern that the investigation showed, and a slightly younger average age of retirement resulted.

Probabilities of Separation

Schedules V and VI of this report demonstrate the relative effects of the four basic causes of separation among miscellaneous active employees. The new assumptions anticipate approximately 18% more service retirements and 20% more disability retirements among male employees than previously assumed, while the new assumptions for female employees anticipate approximately 20% more service retirements and 21% more disability retirements. Both these changes tend to increase costs under the Retirement System.

Actuarial Valuation

One the basis of the various assumptions made with respect to the rates of separation, mortality tables as discussed above and in the previous section of this report, as well as the statement of assets furnished us, a complete actuarial valuation was made with respect to the present membership of the Retirement System. The resulting values of propsective assets and liabilities are set forth on the following page in the form of an actuarial balance sheet.

ACTUARIAL BALANCE SHEET

AS OF JUNE 30, 1972

ASSETS

1.	Current assets from accounting balance sheet		\$ 37,455,132
2.	Present value of future contributions by members		15,179,700
	Present value of future contributions required of County on account of: a) Current service benefits b) Death benefits c) Prior service benefits	\$ 33,394,154 408,300 285,293	34,087,747
4.	Total current and prospective assets		86,722,579
	LIABILITIES		
5.	Present value of allowances now in effect a) Annuities and refunds b) Current service pensions c) Prior service pensions	\$ 3,652,974 9,894,771 2,025,429	\$ 15,573,174
6.	Present value of service retirement allowances to be granted for annuities, prior service pensions and current service pensions.		55,515,100
7.	Present value of ordinary and line-of-duty disability retirement allowances to be granted		4,416,400
8.	Present value of death benefits payable on account of present active members (other than refunds) a) Salary benefits b) Anticipated benefits to spouse for death eligible & line-of-duty death	\$ 408,300	1,277,500
9.	Present value of members' contributions to be refunded upon withdrawal or death		8,737,800
10.	Surplus		1,202,605
11.	Total current and prospective liabilities		\$ 86,722,579

Comments on Actuarial Balance Sheet

The actuarial balance sheet has been prepared in the same form as the one presented in our last actuarial report. The following additional comments on the various items may assist in the further understanding of each item:

- Item 1 This item shows the total assets in the Retirement Fund as of June 30, 1972, and is taken directly from the accounting balance sheet.
- Item 2 This item is the present value of the contributions it is anticipated will be made by present members after June 30, 1972, and until separation from the System as an active member.
- Item 3 This item is the present value of the future contributions that will be required of the County in order to fully provide the benefits anticipated on account of present active and retired members. The rates of contribution we recommend to the County to fund these liabilities are set forth in the next section of this report.
- Item 5 Under this item is shown the present value of the allowances that are now in effect to retired members and beneficiaries. The item is segregated to show that part of the liabilities provided by members' contributions and that part provided by County contributions. It will be noted that the total ledger reserves held for these allowances exceed the actuarial reserves by about \$1,060,000 or about 7%. This excess in actual reserves has been recognized in determining the future contributions to be made by the County.
- Item 6 In this item is shown the present value of service retirement allowances it is anticipated will be granted to present active and inactive members.
- Item 7 This item is the present value of disability retirement allowances it is anticipated will be granted on account of ordinary and industrial disability retirements. Approximately 39% of this item represents liabilities on account of anticipated line-of-duty disabilities.

- Item 8 In this item is shown the present value of benefits it is anticipated will become payable because of the deaths of active members. Approximately 75% of the liabilities shown under (b) is due to anticipated line-of-duty deaths.
- Item 9 This item shows the present value of past and future contributions it is anticipated will be returned to members upon their future withdrawal from the System or death while active.
- Item 10 This item represents the contingency reserve available
 in case of adverse experience in the future.

SECTION V

RECOMMENDATIONS

As a result of the current actuarial investigation and valuation of the Fresno County Employees' Retirement System, as of June 30, 1972, we have the following recommendations to make in accordance with the provisions of the 1937 County Employees' Retirement Law:

- 1. Interest Rate We recommend that for the purposes of determining member contribution rates and as a basis of other actuarial tables necessary in connection with the operation of the System, an interest assumption of 4-3/4%, compounded annually, be used. We further recommend that, in accordance with Section 31591 of the Law, interest at the rate of at least 4-3/4% be credited on members' and County contributions semiannually, as provided in said section.
- 2. Members' Normal Rates of Contribution We recommend that the schedule of rates of contribution contained in Section III of this report be made effective, but upon a date convenient to the administration of the System.
- 3. County Contributions We recommend that, until revised by subsequent actuarial valuations, the County contribution to the System, as provided for in Section 31582 and Section 31587, should be set at and apportioned as follows:

Percentage of Monthly Salaries Safety Members Miscellaneous Members Excess Excess Not Over \$350 Salary Not Over \$350 Salary Current service 17.55% 26.32% 6.72% 10.08% Death .04 .06 .11 .17 Prior service .41 .61 .04 .06 Total rate 26.99% 18.00% 6.87% 10.31%

The above rates applied to the annual salaries used in the valuation as of June 30, 1972, produce the following results:

	Safety	<u>Miscellaneous</u>	Total
Payrol1	\$3,676,572	\$33,598,250	\$37,274,822
County Contribution	879,800	2,936,500	3,816,300

Based on the County's present contribution rates, the corresponding figures would be \$634,900 and \$3,364,400 for the Safety and Miscellaneous members respectively, producing a total County annual contribution of \$3,999,300.

The recommended contribution on account of prior service is again designed to amortize the prior service liability over a 10-year period commencing July 1, 1972. The prior service benefit is based on an average final salary, and to whatever extent the actual salaries in the future increase above those assumed in our salary scales, additional prior service liabilities may fall on the County. A final determination of liabilities on account of prior service cannot be made until the last member that is credited with prior service has retired. Since some fluctuation from our assumed scales will certainly occur in the future, we feel it would be wise to retain a 10-year amortization period for funding these additional liabilities.

In order to facilitate distribution of the full County contributions, we suggest that the following percentages of each such contribution be credited to the six County Advance Reserve accounts.

	Safety	Miscellaneous
Current Service	97.5%	.97.8%
Death Benefit	• 2	1.6
Prior Service	2.3	6
Total	100.0%	100.0%

We further recommend that, inasmuch as Section 31587 provides that the appropriation for lump-sum death benefits during each fiscal year shall be equal to the payment made during the year for death benefits, any balance which may remain in the County reserve for death benefits at the end of each fiscal year be transferred to the County reserve for prior service benefits. If the lump-sum death benefits paid during any year are in excess of the amount available in the reserve for death benefits, the additional amounts required should be transferred from the reserve for prior service benefits.

In our opinion, with the adoption by the County of the recommendations made in this section, the System will continue to be maintained on a sound actuarial basis, in accordance with the provisions of the 1937 County Law.

Comments on the Changes in Rate

On the basis of the salaries in effect on June 30, 1972, application of the split percentages results in an aggregate County rate of 23.93% for Safety members, and 8.74% for Miscellaneous members, as compared with present aggregate County rates of 16.25% for Safety members and 10.50% for Miscellaneous members.

In determining the County contribution rates, the deficits resulting from the adoption of improved benefit formulas for both Miscellaneous and Safety members have been amortized over the remainder of the 30-year period commencing January 1, 1970, in accordance with the provisions of Section 31454.5.

The increase in the interest rate assumption from 4% to 4-3/4% has tended to bring the County's contribution rate down on account of the fact that greater earnings are being anticipated in the future. A large influx of Miscellaneous employees entering into the System at young ages during the last five years has also tended to bring about a decrease in the County's contribution rate for Miscellaneous members.

Among the factors which tend to offset decreases in the County's contribution rates are the significant increases in average salaries during the last five years. The increases in average salary were approximately 50% and 35% over the period of the study for Safety and Miscellaneous members respectively. There have been few withdrawals among the Safety members during the period, with the number of active members remaining virtually constant at around 300. It appears that very little has been released in the way of Safety member liability. Consequently, the tremendous increase in salaries among Safety members, together with the reduced member contribution rates that we have recommended, results in an increased County contribution rate for Safety members.

SECTION VI

POSSIBLE ADOPTION OF PROVISIONS OF ARTICLE 16.5,

COST-OF-LIVING ADJUSTMENT

BY FRESNO COUNTY

Introduction:

We have been authorized by you to conduct a special actuarial survey as of June 30, 1972, in conjunction with the actuarial investigation and valuation, to determine the effect on the County contribution rate and the contribution rates of the members of the Fresno County Employees' Retirement System if the County were to adopt the cost-of-living provisions, permitting future annual changes in retirement allowances, for present and future retired members as outlined in Article 16.5 of the County Law. We have been instructed to use the provisions of Section 31870.1, which limit the maximum change in cost-of-living adjustment to 3% per year.

Analysis of Provisions:

Article 16.5, entitled "Cost-of-Living Adjustments", provides the following:

- The adjustments in service retirement, disability retirement, and death allowances shall be applied to all persons now receiving allowances, as well as to persons granted allowances in the future.
- 2. The changes shall begin with the effective date of the program, or when an allowance is granted in the future.
- 3. The increases or decreases in benefits shall occur only when the cost-of-living index has changed, with the change in benefit limited to 3% in any year (as set forth in Section 31870.1), but no allowance shall be reduced below the amount being received on the effective date of the allowance or the application of this Article, if later.
- 4. The source of financing the program shall be as follows:
 - (a) For increases on account of service rendered to date, there shall first be applied any amounts in the contingency reserve in excess of 1% of the Retirement Fund Assets.

(b) The balance of the cost shall be shared equally between the County and the contributing members of the System.

Basis of Calculations:

Our actuarial calculations have been made on the basis of membership data, both active and retired, available to us in the investigation and valuation of the System, made as of June 30, 1972. Moreover, we were furnished with the pension rolls as of June 30 for the last 11 years, and have used these figures in our projection. Also, in this special study, we have adopted and used without audit the statement of assets in the Retirement Fund as of June 30, 1972. The accounting balance sheet indicates that approximately \$828,000 of the contingency reserve was in excess of 1% of total assets at that time. We have used the \$828,000 as the amount that would be available to be set up as the initial Cost-of-Living Adjustment Reserve. As in the valuation, an interest rate of 4-3/4% per annum has been assumed.

Funding the Program:

We feel that the provisions of Article 16.5 have a number of points on which the intent is not as clearly defined as under the provisions of the 1937 Act for present benefits and contributions.

In recommending a funding program for Article 16.5, we have taken the following points into consideration:

- 1. That the cost of the benefit, as it ultimately develops, shall first be financed by an amount in the contingency reserve over and above 1% of total Retirement Fund assets.
- 2. That thereafter the cost of any benefits in excess of those which are financed by transfers from the contingency reserve shall be divided equally between the contributing members of the System and the County.
- Members' contributions have been calculated on a basis related to sex and age and classification (general or safety) of the member.
- 4. Contributions have been calculated only on a refundable basis because it is our understanding that the Retirement Board is only interested in this basis. By "refundable" is meant that the additional contributions would be refunded if the member terminates from the System prior to retirement without receiving an allowance (either the member of his beneficiary).
- 5. That the benefit be financed on a partial actuarial-reserve basis.

By the actual provisions of Article 16.5, an increase in benefit can only occur when there is an increase in the Price Index, and such increases may be discontinued if there is a decrease in the Index. For this reason, the cost of the proposal depends on the future action of the Price Index, and could range from little or no cost if the Consumer's Price Index does not increase over its present level, to a maximum increase of 3% each year in the future indefinitely. This means that if a person is retired at age 60 and receives a benefit which would increase 3% each year for as long as he lives, the value of this increasing benefit would be 31% greater than a level benefit. Because the cost of the proposal cannot be forecast, and because the amount of the benefit is indefinite, we have recommended that the funding be on a partial-reserve basis, with adjustments in contributions made periodically at the time of each regular valuation of the System to support the actual costs.

Based upon the above considerations, therefore, we have forecast the amount of the retirement roll for a number of years in the future and have estimated what the requirements would be on various assumptions as to a rising cost-of-living index. Later in this report are shown the contribution rates needed from both the employees and the County to fund the costs of these benefits.

In accordance with the provisions of Article 16.5, the contributions to support the program are to be divided equally between the members and the County. Therefore, since the refundable basis is to be used for employee contributions, we believe that the County contributions should also be on a "refundable" basis. If the County's contributions are made each month, when employees terminate and are refunded their cost-of-living contributions, an amount equal to the total employee contributions refunded must be deducted from the County's required contributions for the following month. This will result in net contributions by the County equal to those made by the employees. To arrive at rates of contributions for the cost-of-living benefit, which would be based on the age of entrance into the Retirement System and the sex of the member, we have related these increases in contributions to each member's normal contribution rate. This spreads the total required employee costs in proportion to each employee's normal contribution rate, thereby relating increased contributions to sex and age

nearest birthday at entrance into the Retirement System. This does not mean, however, in our opinion, that each member would necessarily be paying his equitable share of the benefit he might eventually receive.

Summary of Cost Calculations:

If the employee's contribution toward cost of living is expressed as a flat percentage of salary and is refundable, the rate of contribution required by the employee and by the County would be .84% of salary from each.

Based upon our calculations as to the total amount of dollars needed as cost of living contributions from the employees, on a refundable basis these contributions are equivalent to 16.10% of the total employee normal contributions being made to the Retirement System. This factor of 16.10% would then be applied to the normal rates of contribution of the members, to determine the additional contributions required from members and, of course, from the County. We have shown in the attached tables the additional employee cost of living contribution rates on a refundable basis with the rates graded by age, sex, and classification of the member.

In our opinion, based on the information available to us at this time, the funds described above plus the transfer of the contingency funds in excess of 1% of the assets, will meet all disbursements anticipated by the proposed amendment during the next ten years and will, during that period, develop a reserve which can be applied against further benefits or adjustments in contributions when the situation is reappraised.

Recommendations:

If the County adopts the provisions of Article 16.5 and adopts the contribution rates mentioned above, we have the following recommendations to make, in the light of the recent study we have made and the opinions expressed in the foregoing paragraphs:

- 1. That a special reserve account be established, entitled "Cost-of-Living Adjustment Reserve."
- 2. That as of the effective date of the program, and in accordance with the provisions of Article 16.5, the amount now held in the contingency reserve which is in excess of 1% of the assets of the Retirement System, \$828,000, be transferred to the Cost-of-Living Adjustment Reserve.
- 3. That each employee be required to contribute to the Cost-

- of-Living Adjustment Reserve the percentage of his compensation as indicated above.
- 4. That the County contribute monthly an amount equal to that contributed by the employees adjusted in each following month by the amount of cost-of-living contributions refunded to the members during the month.
- 5. That regular interest be credited to the Cost-of-Living Adjustment Reserve in the same manner as for other reserves.
- 6. That any amounts paid as a result of the operation of Article 16.5 be charged against the Cost-of-Living Adjustment Reserve.
- 7. That the rates suggested in Items 3 and 4 above be reviewed in connection with each periodic revaluation of the System.

EMPLOYEES RETIREMENT SYSTEM

(Based on an assumed interest rate of 4-3/4% per annum)
Member Contribution Rates for "Cost-of-Living" Adjustment - Refundable
(Based on 16.10% of Normal Contribution Rates)

	Mal Contribution Rate	le Members e Applicable to:		Members ate Applicable to:
Entry Age	First \$350 of Monthly Compensation	Excess of Monthly Compensation Over \$350	First \$350 of Monthly Compensation	Excess of Monthly Compensation Over \$350
16 17 18 19	.43% .44% .44% .45%	.65% .66% .66%	.49% .49% .50% .50%	.73% .74% .75% .75%
20 21 22 23 24	.45% .45% .46% .47%	.67% .68% .69% .70%	.51% .51% .53% .53% .54%	.76% .77% .79% .80% .81%
25 26 27 28 29	.48% .49% .50% .51%	.72% .73% .75% .76% .77%	.55% .57% .57% .59% .60%	.83% .85% .86% .88%
30 31 32 33 34	.53% .53% .55% .56% .57%	.79% .80% .82% .84% .86%	.61% .63% .63% .65%	.92% .94% .95% .97% .99%
35 36 37 38 39	.58% .59% .61% .62% .64%	.87% .89% .91% .93% .96%	.68% .69% .71% .72% .74%	1.02% 1.04% 1.06% 1.08% 1.11%

EMPLOYEES' RETIREMENT SYSTEM

(Based on an assumed interest rate of 4-3/4% per annum)

Member Contribution Rates for "Cost-of-Living" Adjustment - Refundable

(Based on 16.10% of Normal Contribution Rates)

Male Members Female Members Contribution Rate Applicable to: Contribution Rate Applicable to: Excess of Excess of First \$350 Monthly First \$350 Monthly Entry of Monthly Compensation of Monthly Compensation Age Compensation Over \$350 Compensation Over \$350 40 .65% .98% .75% 1.13% 41 .67% 1.00% .77% 1.15% 42 .68% 1.02% .79% 1.18% .70% 43 1.05% .81% 1.21% 44 .71% 1.07% .82% 1.23% 45 .73% 1.10% .84% 1.26% 46 .75% 1.12% .86% 1.29% 47 .77% 1.15% .88% 1.32% 48 .79% 1.18% .89% 1.24% 49 .80% 1.20% .91% 1.37% 50 .82% 1.23% .93% 1.40% 51 .84% 1.26% .95% 1.43% 52 .86% 1.28% .98% 1.47% 53 .88% 1.32% 1.00% 1.50% 54 .90% 1.35% 1.02% 1.53% 55 .92% 1.38% 1.04% 1.56% 56 .95% 1.42% 1.07% 1.60% 57 .97% 1.45% 1.09% 1.63% 58 .99% 1.48% 1.11% 1.67%

59 & over

1.01%

1.70%

1.52%

1.13%

EMPLOYEES' RETIREMENT SYSTEM

(Based on an assumed interest rate of 4-3/4% per annum)

Member Contribution Rates for "Cost-of-Living Adjustment - Refundable
(Based on 16.10% of Normal Contribution Rates)

SAFETY MEMBERS Contribution Rate Applicable to:

Entry Age	First \$350 of Monthly Compensation	Excess of Monthly Compensation Over \$350
21	.86%	1.29%
22	.88%	1.37% / 32
23	.89%	1.34%
24	.91%	1.37%
25	.93%	1.40%
26	.95%	1.42%
27	.97%	1.45%
28	.99%	1.48%
29	1.01%	1.51%
30	1.03%	1.54%
31	1.05%	1.57%
32	1.07%	1.60%
33	1.09%	1.64%
34	1.11%	1.67%
35 & ove:	r 1.13%	1.70%

SECTION VII

PROPOSED ALTERNATE FUNDING

It was requested to determine the County rates of contribution if the method of funding as set forth in Section 31453.5 were adopted by the System. This provision has become known as the "entry age method of funding". This funding method does not change the total liabilities falling on the County but it does greatly reduce the year to year contribution by extending the period of payment. The provision does not affect the employees' rates of contribution or the possible adoption of the cost of living provisions.

Our current valuation indicates the County rates could be as follows if this provision was adopted:

Percentage of Monthly Salaries Safety Members Miscellaneous Members Excess Excess Not Over \$350 Salary Not Over \$350 Salary Current service 14.68% 22.02% 4.72% 7.08% Death .03 .05 .03 .05 Prior service .20 .30 .01 .02 Total rate .14.91% 22.37% 4.76% 7.15%

The above rates applied to the salaries as of June 30, 1972, would produce the following annual contributions:

	Safety	Miscellaneous	Total
Payroll	\$3,676,572	\$33,598,250	\$37,274,822
County Contribution	729,700	2,036,200	2,765,900

In determining the above total County rates according to Section 31453.5, the liability being funded over 30 years was \$6,329,865 for the Safety members and \$17,545,682 for the Miscellaneous members.

SECTION VIII

STATISTICAL SECTION

List of Schedules

- Number of active miscellaneous members and total annual salaries by sex and attained age.
 Number of active safety members and total annual salaries by attained age.
 Number of retired miscellaneous members and benefits.
- III. Number of retired miscellaneous members and beneficiaries with monthly basic allowances being paid.
- IV. Number of retired safety members and monthly basic allowances being paid.
- V. Annual probabilities of separation for indicated causes miscellaneous males.
- VI. Annual probabilities of separation for indicated causes miscellaneous females.
- VII. Annual probabilities of separation for indicated causes safety.
- VIII. Expectation of life after service retirement.
 - IX. Expectation of life after disability retirement.

SCHEDULE I.

Number of Active Miscellaneous Members and Total Annual Salary

by Sex and Attained Age

June 30, 1972

Attained Age	No.	MALE Salary	No.	FEMALE Salary	No.	TOTAL Salary
20 & under	10	\$ 63,546.00	52	\$ 259,752.00	62	\$ 323,316.00
21	10	55,104.00	40	220,464.00	50	275,568.00
22	18	118,440.00	62	379,992.00	80	498,432.00
23	30	215,388.00	97	660,132.00	127	875,520.00
24	44	330,048.00	109	733,188.00	153	1,063,236.00
25	58	476,388.00	136	998,316.00	194	1,474,704.00
26	73	640,896.00	98	729,492.00	171	1,376,388.00
27	71	660,204.00	64	507,612.00	135	1,167,816.00
28	74	685,764.00	54	474,600.00	128	1,160,364.00
29	64	588,888.00	59	484,560.00	123	1,073,448.00
30	63	676,356.00	46	377,508.00	109	1,053,864.00
31	54	568,392.00	45	351,744.00	99	920,136.00
32	40	433,848.00	45	358,056.00	85	791,904.00
33	29	311,412.00	33	251,304.00	62	562,716.00
34	41	468,276.00	30	235,332.00	71	703,608.00
35	46	508,008.00	39	316,068.00	85	824,076.00
36	30	343,608.00	23	198,396.00	53	542,004.00
37	45	494,952.00	35	290,496.00	80	785,448.00
38	42	448,308.00	26	238,884.00	68	687,192.00
39	30	368,472.00	30	231,396.00	60	599,868.00
40	39	535,860.00	36	303,600.00	75	839,460.00
41	40	438,624.00	39	304,968.00	79	743,592.00
42	42	482,328.00	46	369,072.00	88	851,400.00
43	30	364,342.08	27	217,992.00	57	582,334.08
44	37	425,196.00	41	320,364.00	78	745,560.00
45	42	526,956.00	42	328,944.00	84	855,900.00
46	25	287,568.00	36	282,264.00	61	569,832.00
47	30	366,624.00	42	337,356.00	72	703,980.00
48	39	482,292.00	47	381,576.00	86	863,868.00
49	38	442,176.00	44	385,848.00	82	828,024.00

SCHEDULE I.

Number of Active Miscellaneous Members and Total Annual Salary

by Sex and Attained Age

June 30, 1972 (Continued)

Attained Age	No.	MALE Salary	_No.	FEMALE Salary	No.	TOTAL Salary
50	39	\$ 450,252.00	62	\$ 521,268.00	101	\$ 971,520.00
51	32	373,296.00	50	412,680.00	82	785,976.00
52	27	318,396.00	49	444,336.00	76	762,732.00
53	37	461,340.00	32	269,184.00	69	730,524.00
54	32	372,996.00	48	397,608.00	80	770,604.00
55	25	265,956.00	36	289,560.00	61	555,516.00
56	33	399,855.60	36	274,692.00	69	674,547.60
57	29	285,228.00	29	269,700.00	58	554,928.00
58	24	257, 196.00	40	316,176.00	64	573,372.00
59	,21	219,660.00	33	258,204.00	54	477,864.00
60	19	205,236.00	31	243,804.00	50	449,040.00
61	25	221,700.00	32	264,504.00	57	486,204.00
62	11	127,764.00	21	192,180.00	32	319,944.00
63	17	204,480.00	18	150,756.00	35	355,236.00
64	11	166,836.00	12	107,376.00	23	274,212.00
65	13	176,760.00	15	126,900.00	28	303,660.00
66	5	58,332.00	2	13,560.00	7	71,892.00
67	4	44,904.00	4	42,372.00	8	87,276.00
68	3	49,644.00	-		3	48,644.00
69	-		-			
70 & over	-					
	1,641	\$17,474,113.68	2,073	\$16,124,136.00	3,714	\$33,598,249.68

SCHEDULE II.

Number of Active Safety Members and Total Annual Salary

by Attained Age

June 30, 1972

Attained		
Age	No.	Salary
20 & under		\$
21		
22	1	10,260.00
23	6	59,112.00
24	5	47,556.00
. 25	15	156,024.00
26	20	214,212.00
27	17	194,760.00
28	20	228,444.00
29	11	186,804.00
23	II	100,004.00
30	11	136,260.00
31	10	113,208.00
32	4	48,468.00
33	8	100,764.00
34	11	126,648.00
35	7	85,332.00
36	9	113,616.00
37	11	129,012.00
38	5	62,736.00
39	. 9	108,840.00
40	8	98,460.00
41	9	120,756.00
42	5	63,348.00
	10	125,364.00
43	8	108,420.00
44	0	100,420.00

SCHEDULE II.

Number of Active Safety Members and Total Annual Salary

by Attained Age

June 30, 1972 (Continued)

Attained Age	No.	Salary
45	10	\$ 141,108.00
46	7	197,212.00
47	5	65,280.00
48	11	148,008.00
49	7	96,624.00
50	3	40,644.00
51	6	84,000.00
52	7	88,008.00
53	1	12,468.00
54	2	25,248.00
55	3	53,064.00
56	3	35,424.00
57	4 3	53,664.00
58	3	51,408.00
59	3	35,496.00
60 & over	_1	10,512,00
	296	\$ 3,676,572.00

SCHEDULE III

Summary of Miscellaneous Monthly Basic Allowances Being Paid as of June 30, 1972

Service Retirements	Number	Monthly Allowance
Unmodified Option 1 Option 2 Option 3 Option 4	229 245 17 35 <u>1</u>	\$ 41,656.22 41,201.57 1,715.96 6,747.88 339.49
Total	527	\$ 91,661.12
Disability Retirements	Number	Monthly Allowance
Unmodified Option 1 Option 2 Option 3	50 23 2 1	\$ 9,047.72 3,055.24 69.89 171.21
Total	76	\$ 12,344.06
Beneficiaries	38	\$ 4,248.24
Grand Total	641	\$108,253.42

SCHEDULE IV

Summary of Safety Monthly Basic Allowances Being Paid as of June 30, 1972

Service Retirements	Number	Monthly Allowance
Unmodified	23	\$ 13,258,04
Total	23	\$ 13,258.04
Disability Retirements	Number	Monthly Allowance
Unmodified Option 1	2 1	\$ 916.91 218.43
Total	3	\$ 1,135.34
Beneficiaries	3	604.79
Grand Total	29	\$ 14,998.17

SCHEDULE V.

Probabilities of Separation from the System

(Number separating at each age per 10,000 working at that age)

MALE

٨٠٠	<u>Withdrawal</u>	<u>Death</u>	Disabilita	C
Age	WILHUIAWAI	Death	<u>Disability</u>	<u>Service</u>
20 21 22 23 24	2,025 1,884 1,743 1,601 1,460	7 7 7 7 8		
25 26 27 28 29	1,319 1,178 1,036 942 848	8 9 9 9	1 1 1 1	
30	754	10	2	
31	659	11	2	
32	584	11	2	
33	528	12	3	
34	490	12	3	
35	462	13	3	
36	443	14	4	
37	424	15	4	
38	405	17	4	
39	386	18	5	
40	330	20	6	
41	314	24	7	
42	297	26	9	
43	280	29	11	
44	263	33	14	
45	246	36	17	
46	229	41	20	
47	212	45	23	
48	203	50	26	
49	195	55	29	

SCHEDULE V.

Probabilities of Separation from the System

(Number separating at each age per 10,000 working at that age) (Continued)

MALE

Age	Withdrawa1	<u>Death</u>	<u>Disability</u>	Service
50	193	61	46	165
51	190	66	51	25
52	188	71	55	25
53	179	77	59	75
54	170	83	62	75
55	160	89	67	350
56	151	98	71	120
57	141	106	75	180
58	132	115	80	180
59	122	123	84	250
60		132	73	400
61	•	140	70	600
62		149	67	950
63		160	64	1,120
64		171	61	1,400
65		182		2,000
66		195		1,500
67		211		2,000
68		228		2,500
69		246		5,000
70				10,000

SCHEDULE VI.

Probabilities of Separation from the System

(Number separating at each age per 10,000 working at that age)

FEMALE

Age	<u>Withdrawal</u>	<u>Death</u>	<u>Disability</u>	Service
20 21 22 23 24	3,115 2,926 2,738 2,549 2,407	2 2 2 2 2 3		
25	2,266	4	1	
26	2,124	4	2	
27	1,982	4	4	
28	1,841	4	4	
29	1,699	4	4	
30	1,558	4	5	
31	1,444	4	5 .	
32	1,350	4	5	
33	1,256	5	5	
34	1,161	5	5	
35	1,067	6	5	
36	972	7	5	
37	897	9	5	
38	821	10	6	
39	765	11	6	
40	708	11	7	
41	651	12	8	
42	595	13	10	
43	557	14	11	
44	519	14	12	
45	491	16	15	
46	463	17	17	
47	434	19	19	
48	406	20	22	
49	378	21	24	

SCHEDULE VI.

Probabilities of Separation from the System

(Number separating at each age per 10,000 working at that age)
(Continued)

FEMALE

			**	
Age	<u>Withdrawal</u>	<u>Death</u>	Disability	Service
50	349	23	27	50
51	330	24	29	50
52	312	26	31	20
53	283	28	34	20
54	255	30	38	20
55	227	33	41	700
56	198	36	46	230
57	170	39	51	230
58	151	41	56	230
59	132	43	61	350
				*
60		45	65	700
61		48	70	1,760
62		50	75	1,290
63		52	80	1,290
64		54	85	1,760
65		80		1,760
66		85		1,760
67		91		2,340
68		97		3,510
69		104		5,850
		201		5,050
70				10,000
	*			

SCHEDULE VII

Probabilities of Separation from the System

(Number separating at each age per 10,000 working at that age)

SAFETY

			* 1		
Age		Withdrawal	Death	Disability	Service
20		1,250	17	5 5 5	
21		1,200	17	5	
22 23		1,150	17 17	6	
24		1,110 1,070	17	6	2
24		1,070	Δ1	O	
25		1,040	17	6	
26		1,010	17	6 7 7	
27		980	17		
28	*	950	17	8	
29		920	18	8	
30		880	18	9	
31		840	18	9	
32		790	19	10	
33		7 40	19	11	
34		690	19	13	
35		630	20	15	
36		570	21	17	
37		510	23	20	
38		450	24	23	
39		390	27	26	
40		330	28	29	
41		280	30	32	
42		240	32	35	
43		200	34	38	
44		170	36	42	
45		140	37	46	
46		110	39	50	
47		80	40	54	
48		50	42	58	
49		20	44	62	

SCHEDULE VII

Probabilities of Separation from the System

(Number separating at each age per 10,000 working at that age)

(Continued)

SAFETY

Age	Withdrawal	Death	Disability	Service
50		46	66	1,000
51		. 48	7 0	800
52		50	74	600
53		53	7 8	800
54		56	82	1,000
55	,	59	86	2,000
56		61	90	3,000
57		64	94	4,000
58		66	98	5,000
59		69	102	7,500
60				10,000

SCHEDULE VIII

Years of Expectation of Life after Service Retirement

Age	Male	Female
55	22.30	26.38
56	21.51	25.49
5 7	20.74	24.60
58	19.97	23.73
59	19.21	22.86
60	18.46	22.00
61	17.72	21.15
62	17.00	20.31
63	16.28	19.49
64	15.57	18.68
65	14.88	17.88
66	14.21	17.10
6 7	13.55	16.33
68	12.92	15.57
69	12.30	14.82
70	11.70	14.08
71	11.12	13.27
72	10.56	12.67
73	10.01	12.00
74	9.48	11.36
75	8.98	10.75
76	8.49	10.18
77	8.02	9.62
78	7.58	9.10
79	7.15	8.60
80	6.75	8.13
81	6.37	7.68
82	6.02	7.25
83	5.70	6.85
84	5.39	6.47

SCHEDULE VIII

Years of Expectation of Life after Service Retirement (Continued)

Age	Male	<u>Female</u>
85 86 8 7 88 89	5.11 4.84 4.59 4.35 4.12	6.10 5.75 5.41 5.09 4.78
90 91 92 93 94	3.90 3.70 3.50 3.31 3.12	4.49 4.20 3.93 3.67 3.42
95 96 97 98	2.95 2.77 2.61 2.44 2.28	3.18 2.95 2.73 2.52 2.32
100 101 102 103 104	2.13 1.98 1.83 1.68 1.53	2.12 1.94 1.77 1.60 1.45
105 106 107 108 109	1.38 1.23 1.07 .90	1.29 1.14 1.00 .86
110	.50	.50

SCHEDULE IX

Expectation of Life after Disability Retirement

Males and Females

Age	Years		Age	Years
25 26 27 28 29	24.00 23.95 23.81 23.60 23.36		65 66 67 68 69	11.10 10.73 10.36 10.01 9.65
30 31 32 33 34	23.11 22.84 22.57 22.29 22.00	**	70 71 72 73 74	9.30 8.96 8.62 8.29 7.96
35 36 37 38 39	21.71 21.42 21.11 20.81 20.49		75 76 77 78 79	7.64 7.33 7.03 6.73 6.45
40 41 42 43 44	20.17 19.85 19.52 19.18 18.84		80 81 82 83 84	6.17 5.90 5.64 5.39 5.15
45 46 47 48 49	18.50 18.15 17.79 17.44 17.08		85 86 87 88 89	4.91 4.69 4.48 4.27 4.08
50 51 52 53 54	16.71 16.35 15.98 15.61 15.23		90 91 92 93 94	3.89 3.71 3.54 3.38 3.22
55 56 57 58 59	14.86 14.48 14.10 13.72 13.34		95 96 97 98 99	3.07 2.91 2.75 2.57 2.37
60 61 62 63 64	12.96 12.59 12.21 11.84 11.46		100 101 102 103 104	2.14 1.86 1.49 1.00