

ACTUARIAL REPORT  
EMPLOYEES' RETIREMENT ASSOCIATION  
of the  
COUNTY OF FRESNO

Made to the Board of Retirement

as of June 30, 1967

OFFICES IN  
SAN FRANCISCO  
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October 31, 1967

Board of Retirement  
County Employees' Retirement  
Association  
Fresno County  
Court House  
Fresno, California

Gentlemen:

We are pleased to transmit herewith our report setting forth the results of the investigation and valuation of your Retirement System as of June 30, 1967.

Both the investigation and valuation were based upon financial statements and employee data furnished by the Retirement Office.

The basic report discusses in detail the results and the conclusions arising from our investigation and valuation. In addition, a separate statistical report, of a supplementary nature, is also being sent to the Board. This latter report contains various tables and schedules developed in the process of carrying out the regular investigation and valuation of June 30, 1967. The material included in it is similar to the Statistical Section of our report as of June 30, 1962.

At this time, we wish to take the opportunity to express our appreciation for the cooperation given us by the Retirement Office during our work.

Respectfully submitted,

COATES, HERFURTH & ENGLAND  
Consulting Actuaries

By Robert D. Drisko  
Robert D. Drisko

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ACTUARIAL REPORT  
COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
COUNTY OF FRESNO

as of  
June 30, 1967

SECTION I

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. On 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 rate 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."

In accordance with the foregoing provisions of the Law, we have completed an investigation into the mortality, service and compensation experience of members and beneficiaries under the System during the five-year period which has elapsed prior to June 30, 1967. Based upon the assumptions derived from this investigation and the rate of interest which has been assumed, we have also completed an actuarial valuation of the assets and liabilities of the System as of June 30, 1967.

The members' rates of contribution make up the first element to be determined in the valuation of the System. These rates are dependent upon the interest assumptions, the compensation experience among active members and the mortality expected among members retired for service.

After these rates of contribution have been determined, an actuarial valuation must then be made of that portion of the total liabilities of the System which is not funded by member contributions and funds on hand. In this way the total net liability falling against the County is determined. As in the last report, we have assembled this basic report in sections, dealing with the following: the data upon which the actuarial survey was based; the determination of member contributions; the valuation of the assets and liabilities of the System, and finally our recommendations of the contributions that should be made by the County. In addition, a supplemental statistical report will contain various tables and schedules developed in connection with the investigation and valuation as of June 30, 1967. This supplemental report will replace the statistical section which was part of our previous report to the Board as of June 30, 1962.



## SECTION II

### DATA FURNISHED

The Retirement Office furnished us with the following information regarding the membership and experience under the System.

For each member of the System who was active on June 30, 1967, the following:

1. Name or number
2. Department
3. Group (whether or not covered under OASDI)
4. Sex
5. Date of birth
6. Age of membership
7. Rate of contribution
8. Date of employment
9. Years of prior service
10. Monthly compensation earnable
11. Accumulated contributions

For each person receiving an allowance from the System as of June 30, 1967, we were furnished the following:

1. Name
2. Sex
3. Date of birth
4. Date of retirement
5. Type of retirement
6. Option selected
7. Monthly annuity
8. Monthly current service pension
9. Monthly prior service pension
10. Beneficiary sex and date of birth

In addition to the above information on current active and retired members, we were given similar information concerning any active member of the System who had terminated for any reason between July 1, 1962 and June 30, 1967. Similar information was furnished regarding the retired persons who had died during the five-year period.

In addition to the above-mentioned personnel statistics, the Retirement Board furnished us with a financial statement and balance sheet of the retirement fund as of June 30, 1967. No physical audit of these assets was made by us and our calculations are based upon the balance sheet as submitted.

SECTION III  
MEMBER CONTRIBUTIONS

The 1937 County Law sets forth the basis of determining the normal rates of contribution for members in Section 31621 of Article 6, which reads 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 1/120th 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. "

In addition, for members covered under Article 13, Integration with Old Age and Survivors Insurance, Section 31812 of the Law also applies. This section reads as follows:

"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 (\$350.00) monthly wage. "

Section 31620 of the County Law further provides that the contribution rates of members shall be based upon sex and upon the age at the nearest birthday at the time of entrance into the Retirement System. Section 31453 provides for the adjustment in such rates of contribution in the light of changes in the rate of interest and the other factors. It further provides that no adjustment shall be included in the new rates for time prior to the effective date of the revision.

In order to determine the rates of contribution in accordance with the provisions of the Law, it is first necessary to adopt assumptions for the



following three elements which enter into the calculations:

1. The interest rate that may be realized on the investments of the funds of the System.
2. The relative average increases anticipated in the salary of the members as they advance in age to retirement.
3. The mortality to be experienced among members retired for service under the system.

The above three factors and the assumptions made in regard to each of them will be discussed in the following paragraphs.

#### Interest Rate

The last actuarial valuation was made on the basis of a long-term interest assumption of 3-1/2% per annum. This assumption was justifiable based upon the average earnings of the fund at that time. Since then, however, current investments have been made at improved yields and a majority of the retirement funds, including yours, are now earning in excess of 4%. Considering this, we believe it is more realistic to recognize these higher earnings and we were informed that the Retirement Board shares this view. We, therefore, have assumed an interest rate of 4% compounded annually for the valuation of the prospective assets and liabilities of the fund.

#### Mortality After Service Retirement

At the time of the valuation, there were relatively few persons receiving allowances from the System on account of service retirement. Because the group was not large, it could not be expected to provide a reliable test

of the mortality experience over the five-year period since the last investigation. Nevertheless, during this period 53 deaths actually occurred, and approximately 65 were anticipated by the mortality table now being used. In order to obtain a more reliable test, however, we had available the experience among several other counties operating under the 1937 Act, and after a study of this additional experience along with that of Fresno County, it was our opinion that there should be no change in the table for the mortality after service retirement. Accordingly, we recommend that the 1951 Group Annuity Mortality Table be continued as the basis for the mortality after service retirement assumption. The rates of mortality for this table for both males and females are included in the schedules of the Supplemental Report also sent to the Board.

#### Salary Scales

For the purpose of calculating member contribution rates, as well as for the valuation of benefits that are based upon final compensation, it was necessary to prepare salary scales to measure the relative increases in salaries that members might experience as they advance in age toward retirement. Based upon studies of the data that were supplied us, the average current salary at each age was determined for males and females separately. From this information salary scales were developed to express the ratio of present compensation to expected final compensation. In considering the salary scales, it should be noted that the fundamental assumption is made that on the average, as members advance in age, normal



increases in compensation would be in accordance with the rates indicated by the scales. These salary scales do not attempt to predict changes in the general level of compensation which would be due to changing economic conditions. They are used in the valuation only to indicate the average relationship existing between compensation at different ages in accordance with present salary levels.

#### Member Contribution Rates

Because of the change in the interest assumption from 3-1/2% to 4% per annum, and a change in the salary scale for female members, we calculated new normal rates for members. The net effect of the above changes in assumptions resulted in reductions in member rates (both males and females) varying from approximately 5% for entry age 59 to 15% for entry age 20. At entry ages 30 to 35, the reduction was about 12%.

Complete schedules of the recommended new rates are shown on the following pages. Members still under the Money Purchase System will use rates of contribution listed under the column labeled "Excess of Monthly Compensation over \$350." In our opinion, these rates comply with the provisions of Sections 31621 and 31812 of the Law.



# COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

## COUNTY OF FRESNO

Entry Age	<u>Male Members</u> <u>Contribution Rate Applicable to:</u>		<u>Female Members</u> <u>Contribution Rate Applicable to:</u>	
	<u>First \$350 of monthly Compensation</u>	<u>Excess of monthly Compensation over \$350</u>	<u>First \$350 of monthly Compensation</u>	<u>Excess of monthly Compensation over \$350</u>
16	3.35%	5.02%	3.72%	5.58%
17	3.37	5.05	3.79	5.65
18	3.39	5.08	3.81	5.72
19	3.41	5.11	3.86	5.79
20	3.43	5.14	3.91	5.86
21	3.45	5.17	3.95	5.93
22	3.47	5.21	4.01	6.01
23	3.51	5.26	4.06	6.09
24	3.55	5.32	4.11	6.17
25	3.59	5.38	4.17	6.26
26	3.63	5.44	4.23	6.35
27	3.67	5.51	4.30	6.45
28	3.73	5.59	4.37	6.55
29	3.78	5.67	4.43	6.65
30	3.84	5.76	4.50	6.75
31	3.90	5.85	4.57	6.86
32	3.96	5.94	4.65	6.97
33	4.03	6.04	4.72	7.08
34	4.09	6.14	4.80	7.20
35	4.16	6.24	4.88	7.32
36	4.23	6.35	4.96	7.44
37	4.31	6.46	5.05	7.57
38	4.39	6.58	5.13	7.70
39	4.47	6.70	5.22	7.83
40	4.55	6.82	5.31	7.96
41	4.63	6.95	5.40	8.10
42	4.72	7.08	5.49	8.24
43	4.81	7.21	5.59	8.38
44	4.90	7.35	5.69	8.53

COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

COUNTY OF FRESNO

Entry Age	Male Members <u>Contribution Rate Applicable to:</u>		Female Members <u>Contribution Rate Applicable to:</u>	
	<u>First \$350 of monthly Compensation</u>	<u>Excess of monthly Compensation over \$350</u>	<u>First \$350 of monthly Compensation</u>	<u>Excess of monthly Compensation over \$350</u>
45	4.99%	7.49%	5.79%	8.68%
46	5.09	7.63	5.89	8.84
47	5.19	7.78	6.00	9.00
48	5.29	7.93	6.11	9.16
49	5.39	8.09	6.21	9.32
50	5.50	8.25	6.32	9.48
51	5.61	8.41	6.43	9.65
52	5.71	8.57	6.55	9.82
53	5.83	8.74	6.67	10.00
54	5.94	8.91	6.79	10.18
55	6.05	9.08	6.91	10.36
56	6.17	9.26	7.03	10.54
57	6.29	9.44	7.15	10.73
58	6.41	9.62	7.28	10.92
59	6.53	9.80	7.41	11.11

SECTION IV  
VALUATION OF SYSTEM

In order to make the complete actuarial valuation of the prospective assets and liabilities of the System, it is necessary to adopt assumptions which would reflect the rates and ages at which members separate from active service on account of withdrawal, death, disability and service retirement. In addition to this, a standard of mortality must be adopted for members after retirement for disability. All of these contingencies were examined as part of the investigation covering the experience of the last five years. The assumptions made in regard to these rates are discussed in the following paragraphs.

Mortality After Disability Retirement

Because there are so few members currently on disability retirement, it was necessary to relate your experience to that available among the other counties having comparable investigations recently. The results of this combined experience, coupled with our knowledge of tables used in other public systems, convinced us that a continuation of the present mortality table for disabled lives was justified. This table has been designated as the 1943 Disability Mortality Table and the rates of death assumed in it are included in the schedules of the Supplemental Report.



### Withdrawal

In studying the turnover experience under your System during the five-year period, it was again observed that those persons who had prior service credit very seldom withdraw from the System because of their long periods of service. Based upon this observation, for this valuation as in the previous one, we have eliminated the rate of withdrawal for these persons. At the same time, for all other members, we have determined rates of withdrawal by attained age. These rates are based upon the study of the turnover of members without prior service credit who have more than three years of service, since withdrawals before that time have a very small effect on the overall financial position of the System. The net effect of these new rates of withdrawal is to anticipate decreases of about 20% in the number of withdrawal cases for males and about 15% for females. A decrease in withdrawal rate tends to anticipate that a larger percentage of members will eventually retire.

### Death Before Retirement

The experience in Fresno County during the five years has indicated that for both males and females, the probabilities for this contingency should remain the same as those used for the 1962 valuation. These probabilities are in line with those found applicable for other counties.

### Disability Retirement

Although there was very little experience available under this contingency for the five-year period, there were sufficient disability cases to

indicate that both the male and female rates should be increased about 30% over the rates adopted for the previous valuation. We are finding that several counties are experiencing a similar situation in regard to disability retirement cases.

#### Service Retirement

Your experience under service retirement shows that during the last five years members retired at an average age of 62.9 compared to an average age of 64.4 that was experienced during the preceding five years. Probabilities of retirement were developed to reflect this tendency to retire at younger ages. The fact that your members are retiring at younger ages than heretofore is consistent with the experience of other county retirement systems and acts to increase the County's cost for retirement benefits.

The rates of separation from active service that have been discussed in the foregoing paragraphs and adopted as the basis for the current actuarial valuation are shown in the schedules of the Supplemental Report.

#### Accounting Balance Sheet

The Retirement Board furnished us with a balance sheet of the System as of June 30, 1967, which shows the distribution of the funds on hand. This statement of assets was accepted by us without audit and used in the determination of the net liabilities under the System. We have reproduced an abbreviated version of this balance sheet on page 16.

Of the reserves now held by the Retirement System, Item 5 is the amount now credited to active members' accounts, representing contributions



for service to date plus interest credited at the rates prescribed by the Retirement Board. Item 6 is the amount of accumulated contributions made by the County for current service benefits accrued to date for presently active members. Items 7 and 8 show the balances in the funds set aside for retired members to provide for current service pensions and annuities now in effect. Item 9 represents the net contributions made to date by the County to provide for prior service pensions that have already been entered upon or will be entered upon by members not yet retired. The actual accounting balance sheet maintained by the Retirement Board shows more than one prior service reserve account. It shows "County Advance Reserve, Prior Service" as a deficit and also shows "Prior Service Pension Reserve." The County has been amortizing all prior service liabilities by regular contributions which are credited to the County Advance Reserve, Prior Service. When a member retires, the full actuarial value of his prior service pension is transferred from this reserve to the Pension Reserve. The fact that this reserve shows a deficit at this point means that the actuarial value of all the prior service pensions granted to date exceeds the County prior service contributions to date. The actual prior service pension payments, however, have not exceeded the County contributions. The deficit figure then is merely part of the unfunded prior service liability which will be paid into the System in the future by the regular County prior service contributions. The net amount of those two items would represent the funds actually on hand for prior service pensions that either have already been entered upon or will be entered upon by members not yet retired. Item 10 is the reserve held to provide the survivor allowances now



payable due to the death of members while in active service. Item 11 is the excess of interest earned over interest credited to accounts. This amount represents a contingency reserve to be used if needed in the future because of adverse experience.

# ACCOUNTING BALANCE SHEET

as of

June 30, 1967

## ASSETS

1.	Cash on hand		\$ 66,637.55
2.	Securities owned		18,411,561.46
3.	Contributions due:		
	County	\$86,939.48	
	Member	<u>99,691.25</u>	<u>186,630.73</u>
4.	Total assets		<u>\$18,664,829.74</u>

## LIABILITIES

5.	Members' deposit reserve	\$ 8,543,528.85
6.	Current service reserve	2,601,886.34
7.	Current service pension reserve	3,912,267.24
8.	Annuity reserve	1,923,674.72
9.	Prior service reserve and pension reserve	1,396,996.76
10.	Survivors' death benefit reserve	87,337.13
11.	Surplus	<u>199,138.70</u>
12.	Total liabilities	<u>\$18,664,829.74</u>

### Actuarial Balance Sheet

On the basis of the various actuarial assumptions discussed in the foregoing sections in this report, an interest rate of 4% compounded annually and the statement of assets as furnished us, a complete actuarial valuation of the Retirement System was made. The resulting values of prospective assets and liabilities have been set forth in the following actuarial balance sheet.



# ACTUARIAL BALANCE SHEET

as of

June 30, 1967

## ASSETS

1. Total assets from accounting balance sheet		\$18,664,829.74
2. Present value of future contributions from members		9,868,840.00
3. Present value of future contributions from county for:		
(a) Current service pensions	\$10,276,512.72	
(b) Salary death benefits	255,671.00	
(c) Prior service	<u>1,181,303.24</u>	<u>11,713,486.96</u>
4. Total assets		<u><u>\$40,247,156.70</u></u>

## LIABILITIES

5. Present value of retirement allowances payable to retired members:		
(a) Annuity	\$ 1,906,961.00	
(b) Current service	3,655,104.00	
(c) Prior service and minimum	<u>2,154,005.00</u>	\$ 7,716,070.00
6. Present value of retirement allowances payable to present active members:		
(a) Annuity and current service pensions	\$25,677,740.00	
(b) Prior service and minimum	<u>424,295.00</u>	26,102,035.00
7. Present value of death benefits payable to present active members:		
(a) 6 months' salary benefit	\$ 255,671.00	
(b) Death while eligible to retire	<u>950,587.00</u>	1,206,258.00
8. Present value of contributions returned to active members a/c withdrawal or death		5,023,655.00
9. Surplus		<u>199,138.70</u>
10. Total liabilities		<u><u>\$40,247,156.70</u></u>

## Comments on Actuarial Balance Sheet

It will be noted that this balance sheet has been prepared in approximately the same form as the one presented in our last report. On the liability side, Item 5 represents the actuarial value of the allowances which have already been entered upon on account of service and disability retirements. This item has been broken down to show the value of the annuity portion of the allowance, as well as the two pension portions which were derived from County contributions. The actuarially determined present value of the allowances already entered upon is about 2% larger than the ledger reserve. This difference between the actuarially determined present value and the reserve as shown in the accounting balance sheet is reflected in the recommended County contribution rates. Item 6 in the actuarial balance sheet represents the actuarial present value of the retirement allowances, for both service and disability, that it is anticipated will be paid to present members who will retire in the future. Item 7 represents the present value of death benefits which it is anticipated will be payable on behalf of the presently active members. This item does not include the return of members' contributions on death. Item 8 is the present value of the contributions which it is anticipated will be returned to those presently active members who are expected will die or withdraw from the System in the future. Item 9 is the contingency reserve available in case of adverse experience in the future.

On the asset side of the balance sheet, the first item represents the funds available as taken from the accounting balance sheet. The second item

is the actuarial present value of the contributions that will be made in the future by presently active members before separation from the System. The third item indicates the present value of the future contributions that must be made by the County to fund the benefits that have already been entered upon or will be entered upon in the future. This item has been shown divided into the three components referred to in Section 31527 of the County Law, namely, current service pensions, death benefits, and prior service pensions.

In the next section of this report, we shall deal with the recommendations which we believe would be advisable to fund these net County liabilities.



SECTION V  
RECOMMENDATIONS

On the basis of the current actuarial investigation and valuation of the Fresno County Retirement System, we make the following recommendations in accordance with the provisions of the 1937 County Employees' Retirement Law:

Interest Rate

In view of the discussions set forth in Section III of this report, we recommend that as a basis of all actuarial tables necessary in connection with the operation of the System, an interest assumption of 4% compounded annually be used.

Contribution of Members

We recommend that the new member rates of contribution shown in Section III be used. We suggest that these new rates be put into effect as soon as possible, but upon a date which would be convenient from the administrative viewpoint.

County Contributions

We recommend that, until revised by subsequent actuarial valuations, the County contribution to the System, as provided for in Section 31582, be set at 5.43% of the first \$350 of monthly compensation and 3.14% of compensation in excess of \$350, of all members (Money Purchase as well as Modified System).

We further recommend, in accordance with the provisions of Section 31587, that the total appropriation recommended above be apportioned as follows:

- (1) First, an amount equal to 4.72% of the first \$350 of monthly compensation, and 7.07 % of compensation in excess of \$350 of all members be credited to the County Advance Reserve for Current Service Benefits; and
- (2) Second, an amount equal to .12% of the first \$350 and .18% of the excess of \$350 of that compensation be credited to the County Advance Reserve for Death Benefits; and
- (3) The balance of said appropriation (or .59% of the first \$350 and .89% of the excess of \$350 of that compensation) be credited to the County Advance Reserve for Prior Service Benefits.

The recommended contribution on account of prior service is designed to amortize the prior service liability over a 10-year period commencing July 1, 1967. 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 liability may fall on the County. 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 this additional liability.

In order to facilitate distribution of the full (5.43% of the first \$350 of monthly compensation and 8.14% of monthly compensation in excess of \$350) County contributions, we suggest that the following percentages of each such contribution be credited to the three County Advance Reserve accounts:

86.8%	to	Current Service
2.2%	to	Death Benefit Reserve
11.0%	to	Prior Service Reserve

We further recommend that inasmuch as Section 31587 provides that the appropriation for death benefits during each fiscal year shall be equal to the payment made during the year for death benefits, that any balance which may remain in the County Advance Reserve for Death Benefits at the end of each fiscal year be transferred to the County Advance Reserve for Prior Service Benefits. If the death benefits paid during any year are in excess of the amount available in the County Advance Reserve for Death Benefits, the additional amounts required should be transferred from the Advance 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 Cost of the System

It should be pointed out that the present valuation has taken into account all changes that were made in the Retirement Law prior to June 30, 1967, that are applicable to Fresno County.

On the basis of the present valuation, the County contribution rate should be 5.43% of the first \$350 of monthly compensation and 8.14% of the compensation in excess of \$350. This is a substantial increase in the County contribution rate from the former rate.

The one factor tending to reduce the County contribution rate was the increase in the interest assumption from 3-1/2% to 4%. All other significant factors developed during the course of the current investigation act to increase the County contribution rate.



The reduction in the withdrawal rate means that more persons will be expected to retire. During the past five years 88% more members retired than was expected on the basis of the probabilities developed as of June 30, 1962. The retirement roll as of June 30, 1967 was 73% larger than it was as of June 30, 1962. Also, as we previously mentioned, the fact that members are retiring at younger ages than heretofore further acts to increase the County contribution rate as does the reflection of the 30% increase in disability retirements.

Probably the most important factor causing this increase in County rate was the sharp increase in average salaries of the members. Since 1962, the average salaries have increased about 30%. More importantly, the average monthly salary in excess of \$350 has increased 110%. This has added considerably to the liability. Because of the System being integrated with Social Security, the salary above \$350 per month earns 50% higher credit than the salary below that amount.