

**ACTUARIAL REPORT**  
**EMPLOYEES' RETIREMENT ASSOCIATION**  
**OF THE**  
**COUNTY OF FRESNO**

**MADE TO THE BOARD OF RETIREMENT**  
**AS OF JUNE 30, 1952**

**COATES, HERFURTH & ENGLAND**  
**CONSULTING ACTUARIES**

**SAN FRANCISCO**

**DENVER**

**LOS ANGELES**

OFFICES IN  
SAN FRANCISCO  
DENVER  
LOS ANGELES

COATES, HERFURTH & ENGLAND  
CONSULTING ACTUARIES  
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July 29, 1953

Board of Retirement  
County of Fresno  
Fresno, California

Gentlemen:

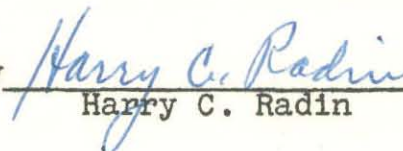
In accordance with the provisions of the 1937 County Employees' Retirement Act and our agreement with your County, we have made an actuarial investigation and valuation of your Retirement System and hand you herewith our report.

We would like to take this opportunity to express our appreciation of the cooperation extended us by the Board and the administrators of the System throughout this undertaking.

Yours very truly,

COATES, HERFURTH & ENGLAND  
Consulting Actuaries

By

  
Harry C. Radin

HCR:rcw



## 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. 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 rate of interest, in the rates of contributions 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."

As implied by the above section of the Law, the actuarial valuation of the System first requires investigation into the mortality, service and compensation experience of members and beneficiaries and then upon the basis of these findings and upon the rate of interest, the valuation is made.

The first thing determined in the valuation is the members' contribution rates which are based on the interest assumption, the compensation experience, and the mortality among service pensioners.

When the members' rates are fixed, a determination is then made of that portion of the total liabilities of the System which are not funded by the member contribution and the funds on hand, thus establishing the liability falling against the County. Our report, therefore, has been assembled in Sections dealing with these various main divisions, the basis upon which the calculations were made, the conclusions reached and the summary of resulting recommendations.

## SECTION II

### Data Furnished

On a form suggested by our office and maintained by the Retirement Office, we were furnished on each active member of the System as of June 30, 1952, the following information:

1. Name or Number
2. Department
3. Sex
4. Date Birth
5. Age at Membership
6. Rate of Contribution
7. Date of Employment
8. Years of Prior Service
9. Monthly Compensation Earnable
10. Accumulated Contributions

In addition to the above information, we were also furnished with the date of termination and the cause of termination for any member who had been a member of the System between July 1, 1947, or later and June 30, 1952, and who, as of June 30, 1952, was no longer a member.

For each retired member of the System, we were furnished with the following information as of June 30, 1952.

1. Name or Number
2. Sex
3. Date of Birth
4. Date of Retirement
5. Type of Retirement - Service - Disability
6. Option Selected
7. Beneficiary Birth Date
8. Sex
9. Annuity
10. Current Service Pension
11. Prior Service Pension
12. Total Pension

In addition to the above information on retired members, we were also furnished with similar information on all members who

had died prior to June 30, 1952, showing the date of death of the member. We were also furnished with information on any beneficiaries who may have died in the same period.

The Retirement Board also furnished us with a financial statement and balance sheet of the System as of June 30, 1952, indicating the assets of the System. No audit of these assets was made by us and all our calculations rely on the balance sheet as submitted to us.



### SECTION III

#### Member Contributions

Section 31621 sets forth the basis for the determination of the normal rates of contribution by members and 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 31620 further provides that the contribution rates of members shall be based on the age nearest birthday at entrance into the System and upon the sex of the member. Section 31453 further provides that no adjustment shall be included in the new rates for time prior to the effective date of any revision.

In order to determine the new rates of contribution for members, it is necessary to first arrive at a decision as to

- (1) the interest rate that may be realized by the funds of the System;
- (2) the relative increases in the salary of an employee prior to retirement;
- (3) the mortality among persons retired under the System.

Each of these factors will be discussed separately setting forth the assumption made in each instance.

#### Interest Rate

The interest rate was discussed not only with your County Treasurer, but with the County Treasurers of all counties operating under the 1937 Law. When the System was first established, an

interest assumption of  $2\frac{1}{2}\%$  per annum was adopted. This selection appeared reasonable in the light of the yield on investments then available and also as compared to the return being realized by other public systems. During the past five years most of the counties operating under the 1937 Act have steadily increased their return on investments to the point where, at the present time, it is somewhat in excess of the  $2\frac{1}{2}\%$  currently being assumed. Comparison with other public systems in the West indicates that the same pattern exists in most of them. Corporation retirement plans being trustee'd by various corporate trustees have also been obtaining a yield in excess of  $2\frac{3}{4}\%$ . Very recently the Federal Government has announced an issue of bonds acceptable for the investment of retirement funds with a yield of  $3\frac{1}{4}\%$  interest. Based on these considerations and upon the appraisal of the situation by your County Treasurer, we have assumed interest at  $2\frac{3}{4}\%$ , compounded annually, for the determination of member contributions.

#### Mortality Among Service Pensioners

At the present time, the mortality standard being used for your System is the Combined Annuity Table of Mortality. This table was tested not only against the experience among your pensioners, but also against the experience of all the Counties operating under the 1937 Act having an actuarial valuation made as of June 30, 1952. The investigation of the mortality was carried on for men and women separately, recognizing, of course, the longer expectancy of life normally experienced by females.

It was found that among male retired members the deaths which occurred during the period were almost the same as those expected



by the Combined Annuity Table. Inasmuch as it is desirable to have a table which understates the number of deaths slightly and thus provides some margin for improvement in mortality, it was decided to adopt a table designated as the 1946 Service Pensioner Mortality Table, with ages set back one year. This table was based on the actual experience among pensioners in the West. This table fits the distribution of deaths better than the Combined Annuity Table and the adjustment of the table by using it at one age younger introduces an element to cover possible improvement. This mortality standard then, we believe, would be better for retired males in your System and has been used in the valuation.

For female lives it was found that the Combined Annuity Table was not satisfactory for the measure of mortality after service retirement inasmuch as it expected more deaths than actually had occurred during the period. It was found that the 1946 Service Pensioner Mortality Table for women with the age set back two years fitted the number of deaths which had actually occurred very closely and it has therefore been used as the mortality standard for retired females.

The mortality tables being used for employees of the State of California have a greater life expectancy than the tables which are being recommended herein. At the moment, however, there appears no evidence among the County employees retired for service that the State mortality standard should be adopted. If adopted, the State table would further increase the contribution rates of members and the County.



### Salary Scales

In order to determine member contribution rates, as well as the calculation of the value of benefits based upon the final compensation of members, it was necessary to prepare salary scales. A review of the compensation experience of the members of your Retirement System was made and compared with similar experience of other counties. Combining the experience of those counties having similar characteristics, there were developed salary scales for both men and women, considered applicable to your County.

The salary scales are shown as the ratio of the compensation at the present age of a member to the expected final compensation as indicated by the statistics available to us. In considering these scales, it must be remembered that the fundamental assumption is made that, on the average, as a member advances in age, normal increases in compensation should be in accordance with those indicated by the scale. It should be stressed that they do not attempt to predict changes in economic conditions, nor changes in the general level of compensation. They indicate only the average relationship existing between compensation at the different ages. Although the use of these scales is simplified when they are based on age, it will nonetheless be recognized that in most cases, age is, in effect, an indication of the duration of employment as well.

### Member Contribution Rates

Based upon the interest rate of 2-3/4%, the mortality among retired members and the salary scales discussed above, contribution rates were calculated for your County. These rates should be assigned according to the age of a member when his membership in the

System first becomes effective. Inasmuch as the 1937 County Employees' Retirement Act does not specify an exact date upon which changes in member contribution rates must be made, we would suggest that these rates be put into effect at an early date, but on a date which will be convenient taking into account other necessary administrative duties attached to the System.

Contribution rates, which in our opinion, are in compliance with the basis set forth in Section 31621 are shown below and are hereby recommended for your System until such time as they may be changed by future actuarial valuations.

Rates of Contribution  
Expressed as a Percentage of Compensation

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Age</u>	<u>Male</u>	<u>Female</u>
16	6.07	6.70	40	7.87	9.25
17	6.11	6.77	41	7.99	9.39
18	6.15	6.84	42	8.11	9.53
19	6.19	6.91	43	8.23	9.67
			44	8.35	9.81
20	6.23	6.98	45	8.47	9.95
21	6.27	7.06	46	8.59	10.09
22	6.32	7.14	47	8.72	10.24
23	6.37	7.22	48	8.85	10.39
24	6.42	7.31	49	8.98	10.54
25	6.47	7.40	50	9.11	10.69
26	6.53	7.50	51	9.24	10.84
27	6.60	7.61	52	9.37	10.99
28	6.68	7.72	53	9.50	11.15
29	6.76	7.83	54	9.63	11.31
30	6.84	7.95	55	9.76	11.47
31	6.93	8.07	56	9.90	11.63
32	7.02	8.19	57	10.04	11.79
33	7.11	8.32	58	10.18	11.95
34	7.21	8.45	59	10.32	12.11
35	7.31	8.58			
36	7.42	8.71			
37	7.53	8.84			
38	7.64	8.97			
39	7.75	9.11			



## SECTION IV

### Valuation of System

In order to complete the valuation and determine the rate of contribution by the County, an investigation was made of the experience among members of the System covering the rates of separation from service as well as death after disability retirement. Death after service retirement was discussed in Section III of this report. The investigation was made on the basis of the material outlined in Section II. Each of the contingencies which were investigated is discussed below.

#### Mortality after Disability Retirement

Although at the time of this investigation, statistical data was available from almost all of the counties operating under the 1937 Act, there was not a sufficient number of persons on disability retirement to provide the basis for the preparation of a special mortality table. There was sufficient information, however, to justify the continuance of the mortality table previously used. This table was based on the mortality among disabled members of a number of municipal systems in the West and is, we believe, the best measure that could be selected at the present time for use in your System. The table used in this valuation, therefore, was the 1943 Disability Mortality Table.

#### Withdrawal

The experience of all of the systems operating under the 1937 Act was reviewed to determine the rate at which employees were withdrawing from the System. Inasmuch as withdrawals in the

first year or two of employment have a very small effect on the overall financial position of the System, the study was confined to members with three or more years of service. Among the various counties there were several levels of the rate of withdrawal; and, in order to provide a broader basis for the selection of sound withdrawal rates, those counties having similar levels were grouped and rates then developed.

Among such male members of those counties having a withdrawal experience similar to your own, there were 660 withdrawals during the period under observation. The rate which was adopted to measure your experience would have produced 605 in the same period. Among the female members there were 1194 actual withdrawals during the period, and the rate adopted would have produced 1060. Both of these male and female rates are shown in Section VI.



### Death before Retirement

Since the rate of death before retirement does not vary appreciably among the various counties, the experience was studied for all the counties combined. The study was made, however, for male and female lives separately. During the period under observation the number of male deaths was 175. The new rate which was adopted to reflect this experience would have produced 188 deaths. Among the female members, there were 35 deaths and the rate adopted would have produced 46. Since a death benefit is paid when a death occurs prior to retirement, and inasmuch as this benefit is fairly costly, particularly for those members eligible to retire, it was deemed advisable to have some margin in the expected deaths over the actual which had occurred. The new rates which were adopted are shown in Section VI.

### Disability Retirement

The number of disability cases which occurred during the period in all the counties was very limited. The rates which were finally adopted for male and female lives are shown in Section VI of this report. These rates are relatively low, and yet would produce 10 or 12 more disability cases over all counties combined than actually occurred during the period studied. Since the granting of a disability benefit, however, can vary considerably within each county, we felt that the margin in the rate is not excessive.

### Service Retirement

It was found that a number of the counties had approximately

the same pattern of service retirement and, as in the case of withdrawal, those counties having similar rates were grouped and a rate developed for each group.

In the group of counties in which the level of service retirement was the same as in your County, some 351 male members retired and the rate which was adopted for this group produced the same number of retirements at approximately the same ages. Among the female members there were 63 who retired from service and the rate which was finally adopted expected a like number occurring approximately the same ages.



### Balance Sheet.

The following balance sheet of the System as of June 30, 1952 was furnished by the Retirement Office of the System. It was accepted by us without audit and was used in the valuation of the liabilities under the System.

#### ASSETS

Cash		\$ 147,377.14
Securities - Par Value		2,961,267.32
Premium	\$ 30,841.50	
Less Discount	<u>6,244.18</u>	24,597.32
Accrued Interest		1,443.84
Accrued Contributions		<u>36,846.09</u>
Total Assets		\$ 3,171,531.71

#### LIABILITIES

Members' Deposit Reserve	\$ 1,368,615.31
County Advance Reserve - Current Service	1,171,082.27
Prior Service	-480,917.17
Death Benefit	52,393.89
Retired Members' Reserve:	
(a) Annuity	84,511.10
(b) Current Service	89,999.62
(c) Prior Service	775,209.04
Surplus	<u>110,637.65</u>
Total Liabilities	\$ 3,171,531.71

### Actuarial Balance Sheet.

Based upon the interest rate and contribution rates of members discussed in Section III and upon the rates of withdrawal, disability, death before retirement and service retirement, as well as the mortality among members retired for both disability and service, an actuarial valuation of the System was made and the resulting prospective assets and liabilities as shown in the following Actuarial Balance Sheet were determined.

ACTUARIAL BALANCE SHEET

as of

JUNE 30, 1952

ASSETS

1. Total Assets from Accounting Balance Sheet		\$3,171,531.71
2. Present Value of Future Contributions from Members		3,679,368.00
3. Present Value of Future Contributions from County for:		
(a) Current Service Pensions	\$ 2,322,846.00	
(b) Death Benefits	105,803.00	
(c) Prior Service & Minimum	<u>1,798,012.94</u>	<u>4,226,661.94</u>
4. Total Assets		<u>\$11,077,561.65</u>

LIABILITIES

5. Present Value of Retirement Allowances Payable to Retired Members:		
(a) Annuity	\$ 92,574.00	
(b) Current Service	103,412.00	
(c) Prior Service & Minimum	<u>965,321.00</u>	<u>\$1,161,307.00</u>
6. Present Value of Retirement Allowances Payable to Presently Active Members		
(a) Annuity	\$ 3,202,070.00	
(b) Current Service	3,312,096.00	
(c) Prior Service & Minimum	<u>1,179,378.00</u>	<u>7,693,544.00</u>
7. Present Value of Death Benefits Payable to Presently Active Members:		
(a) Refunds of Contributions	\$ 547,051.00	
(b) Salary Benefit and widows' Pension Benefit	<u>266,160.00</u>	<u>813,211.00</u>
8. Present Value of Withdrawal Benefits Payable to Presently Active Members		1,298,862.00
9. Surplus		<u>110,637.65</u>
10. Total Liabilities		<u>\$11,077,561.65</u>

### Comments on Actuarial Balance Sheet

It will be noted under the liability section of the balance sheet that we have set up the prospective liabilities for disability benefits and service retirement benefits now being paid to members already retired. The corresponding liabilities for members expected to retire in the future as well as liabilities for the death benefits or return of contributions which will be paid to present members of the System who do not continue until retirement are likewise shown.

On the asset side of the balance sheet, it will be noted that the current funds of the System, as shown by the accounting balance sheet, are shown as the first item. The next item shows the value of future contributions by members. The balancing item shows the value of the future contributions to be made by the County. This is subdivided into the three components mentioned in Section 31587 of the Law, namely current service, death benefits and prior service. The final section of this report will recommend the annual contributions which we believe advisable to amortize these three items.



## SECTION V

Based on the actuarial investigation and valuation made of your System, we have the following recommendations to make in accordance with the provisions of the 1937 County Employees' Retirement Act.

Interest Rate - Based on the discussion set forth in Section III of this report, we recommend that an interest rate of  $2\frac{3}{4}\%$ , compounded annually, be used in the determination of the member contribution rates, and other actuarial tables necessary in connection with the operation of the System.

We would suggest that if the actual earnings of the System are temporarily insufficient to credit  $2\frac{3}{4}\%$  interest on the balances as set forth in the Law, that the "regular interest" adopted by the Board should be at whatever lesser percentage the actual interest of the System will support. If the interest earnings are in excess of  $2\frac{3}{4}\%$ , we believe that the Board could adopt "regular interest" in a greater amount for the crediting of various accounts.

Contribution of Members - We recommend that the contribution rates set forth in Section III of this report be made effective as of a date consistent with the general operation of the County. It should be pointed out, however, that these rates should be made effective as soon as they can conveniently be applied to the various members' compensation.

County Contributions. We recommend that the contribution by the County to the System as set forth in Section 31582 be fixed at 7.97% of the compensation of all members covered by the System.

Inasmuch as no specific instructions are given in the Act, we have provided contributions for the additional benefit in the event of death while eligible for retirement on the same basis as the contributions by the County for the current service benefits.

We recommend, in accordance with the provisions of Section 31587, that of the appropriation recommended above, first an amount equal to 5.27% of compensation of members should be credited to the County Advance Reserve for current service benefits. Second, an amount equal to .24% of covered compensation should be credited to the County Advance Reserve for death benefits under Section 31781 of the Law. The balance should be credited to the County Advance Reserve for prior service. Inasmuch as this section provides that during each fiscal year the payments for the regular death benefit shall be equal to the appropriations, we further recommend 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. Conversely, if death benefits are excessive in any particular year, any excess over the amount available in the County Advance Reserve for death benefits should be transferred from the Prior Service Advance Reserve.



SCHEDULE 1

Number of Members and Total Monthly Salaries

by Sex and Attained Age

<u>Attained Age</u>	<u>MALE</u>		<u>FEMALE</u>		<u>TOTAL</u>	
	<u>No.</u>	<u>Salary</u>	<u>No.</u>	<u>Salary</u>	<u>No.</u>	<u>Salary</u>
18			1	\$ 198	1	\$ 198
19			4	813	4	813
20	1	\$ 188	9	1,782	10	1,970
21	1	268	12	2,411	13	2,679
22	4	941	12	2,841	16	3,782
23	3	828	24	5,653	27	6,481
24	11	2,925	18	4,213	29	7,138
25	11	2,994	20	5,011	31	8,005
26	23	6,338	21	5,537	44	11,875
27	26	6,805	23	6,065	49	12,870
28	28	8,029	20	4,942	48	12,971
29	28	7,917	18	4,530	46	12,447
30	21	5,935	18	4,671	39	10,606
31	26	7,973	17	4,143	43	12,116
32	28	8,084	16	4,086	44	12,170
33	17	5,071	16	3,975	33	9,046
34	15	5,495	25	6,192	40	11,687
35	25	7,869	14	3,247	39	11,116
36	17	5,303	10	2,480	27	7,783
37	20	6,151	15	3,883	35	10,034
38	11	3,331	19	4,629	30	7,960
39	20	5,535	23	5,606	43	11,141
40	16	5,000	20	5,074	36	10,074
41	14	4,520	23	5,574	37	10,094
42	17	4,947	23	5,728	40	10,675
43	11	3,131	15	3,939	26	7,070
44	22	6,921	25	5,992	47	12,913
45	20	6,284	21	5,559	41	11,843
46	18	5,533	25	6,463	43	11,996
47	13	3,653	25	5,735	38	9,388
48	16	4,827	20	5,037	36	9,864
49	14	4,459	20	5,507	34	9,966

(Continued on next page)



SCHEDULE 1

Number of Members and Total Monthly Salaries

by Sex and Attained Age

(Continued)

<u>Attained Age</u>	<u>MALE</u>		<u>FEMALE</u>		<u>TOTAL</u>	
	<u>No.</u>	<u>Salary</u>	<u>No.</u>	<u>Salary</u>	<u>No.</u>	<u>Salary</u>
50	18	\$5,354	20	\$5,649	38	\$11,003
51	16	4,698	22	5,628	38	10,326
52	17	5,358	14	3,241	31	8,599
53	12	3,264	14	3,783	26	7,047
54	15	4,676	16	3,642	31	8,318
55	17	5,749	15	3,799	32	9,548
56	19	6,008	16	4,302	35	10,310
57	22	7,050	11	2,664	33	9,714
58	15	4,884	14	3,769	29	8,653
59	15	4,580	6	1,381	21	5,961
60	16	4,749	10	2,404	26	7,153
61	5	1,522	8	1,980	13	3,502
62	15	4,122	8	1,922	23	6,044
63	10	2,546	7	1,970	17	4,516
64	11	3,160	7	1,906	18	5,066
65	7	2,381	6	1,407	13	3,788
66	4	1,325	5	1,373	9	2,698
67	4	1,182	4	925	8	2,107
68	10	3,430	5	1,342	15	4,772
69	6	1,767	2	505	8	2,272
70	6	1,720			6	1,720
71	1	268			1	268
72	1	242	1	208	2	450
73	2	510			2	510
74 & over	3	1,019			3	1,019
	764	\$228,819	783	\$195,316	1,547	\$424,135

SCHEDULE 2

Number of Members and Total Monthly Salaries

by Sex and Years of Prior Service

Members with Prior Service Only

	<u>MALE</u>		<u>FEMALE</u>		<u>TOTAL</u>	
<u>Years</u>	<u>No.</u>	<u>Salary</u>	<u>No.</u>	<u>Salary</u>	<u>No.</u>	<u>Salary</u>
Less than 1	5	\$1,494	12	\$3,121	17	\$4,615
1	10	3,346	28	7,252	38	10,598
2	15	5,407	23	5,658	38	11,065
3	10	2,950	10	2,921	20	5,871
4	11	3,384	5	1,202	16	4,586
5	11	3,481	3	918	14	4,399
6	7	2,868	10	2,796	17	5,664
7	9	3,498	7	1,956	16	5,454
8	6	2,236	11	3,099	17	5,335
9	9	2,942	6	1,977	15	4,919
10	8	3,184	9	2,456	17	5,640
11	8	3,010	4	961	12	3,971
12	3	938	9	2,541	12	3,479
13	8	2,587	4	1,087	12	3,674
14	6	1,850	5	1,687	11	3,537
15	1	385	4	1,252	5	1,637
16	3	957	3	1,021	6	1,978
17	1	282	7	2,182	8	2,464
18			2	677	2	677
19	3	940	4	1,134	7	2,074
20	2	771			2	771
21	3	1,163	2	523	5	1,686
22	3	1,339	2	552	5	1,891
23	2	732	3	805	5	1,537
24	5	1,769	3	928	8	2,697
25	1	449			1	449
26	1	550			1	550
27						
28						
29	1	347	1	330	2	677
30 & over	2	660			2	660
	154	\$53,519	177	\$49,036	331	\$102,555

SCHEDULE 3

Rates of Withdrawal, Mortality, Disability

and Service Retirement

PER THOUSAND

MALE

<u>Age</u>	<u>Withdrawal</u>	<u>Mortality</u>	<u>Disability</u>	<u>Service</u>
20	213.8	.9		
21	199.8	1.0		
22	186.8	1.0		
23	174.2	1.0		
24	162.9	1.1		
25	152.6	1.1		
26	142.6	1.2		
27	133.4	1.2		
28	125.6	1.2		
29	118.1	1.3		
30	110.9	1.3	.1	
31	103.8	1.4	.1	
32	97.1	1.4	.1	
33	90.8	1.5	.2	
34	84.9	1.5	.2	
35	79.3	1.6	.2	
36	73.9	1.8	.3	
37	68.8	2.0	.3	
38	64.4	2.2	.3	
39	60.6	2.4	.4	
40	57.2	2.6	.4	
41	53.8	3.0	.5	
42	50.6	3.4	.7	
43	47.6	3.8	.9	
44	44.6	4.2	1.1	
45	41.8	4.7	1.3	
46	39.4	5.3	1.6	
47	37.1	5.9	1.8	
48	34.9	6.5	2.1	
49	32.8	7.2	2.3	

(Continued on next page)



SCHEDULE 3

Rates of Withdrawal, Mortality, Disability

and Service Retirement

PER THOUSAND

(Continued)

MALE

<u>Age</u>	<u>Withdrawal</u>	<u>Mortality</u>	<u>Disability</u>	<u>Service</u>
50	31.0	7.9	2.5	
51	29.1	8.6	2.7	
52	27.2	9.3	2.9	
53	25.8	10.0	3.1	
54	24.6	10.8	3.2	
55	22.8	11.7	3.5	15.0
56	19.5	12.7	3.8	10.0
57	14.8	13.8	4.0	5.0
58	9.5	14.9	4.2	10.0
59	4.6	16.0	4.5	25.0
60		17.2		25.0
61		18.2		30.0
62		19.4		30.0
63		20.8		30.0
64		22.2		40.0
65		23.7		50.0
66		25.8		50.0
67		27.7		50.0
68		29.6		60.0
69		32.0		330.0
70				1000.0

SCHEDULE 4

Rates of Withdrawal, Mortality, Disability  
and Service Retirement

PER THOUSAND

FEMALE

<u>Age</u>	<u>Withdrawal</u>	<u>Mortality</u>	<u>Disability</u>	<u>Service</u>
20	315.0	.3		
21	298.0	.3		
22	282.0	.3		
23	266.0	.3		
24	251.0	.4		
25	237.0	.5		
26	223.0	.5		
27	211.0	.6		
28	199.0	.6		
29	188.0	.6		
30	178.0	.6	.3	
31	168.0	.6	.3	
32	158.0	.6	.3	
33	148.0	.7	.3	
34	140.0	.7	.3	
35	132.0	.8	.3	
36	118.8	1.0	.3	
37	106.2	1.3	.3	
38	94.4	1.4	.4	
39	84.0	1.5	.4	
40	74.2	1.6	.4	
41	69.8	1.7	.5	
42	66.0	1.8	.6	
43	62.2	1.9	.7	
44	58.5	2.0	.8	
45	55.5	2.2	1.0	
46	52.5	2.4	1.1	
47	49.5	2.6	1.2	
48	46.5	2.8	1.4	
49	44.2	3.0	1.5	

(Continued)

SCHEDULE 4

Rates of Withdrawal, Mortality, Disability  
and Service Retirement

PER THOUSAND

(Continued)

FEMALE

<u>Age</u>	<u>Withdrawal</u>	<u>Mortality</u>	<u>Disability</u>	<u>Service</u>
50	42.0	3.2	1.7	
51	39.8	3.4	1.8	
52	37.1	3.6	2.0	
53	35.1	3.9	2.2	
54	33.3	4.2	2.4	
55	31.3	4.6	2.6	35.0
56	25.1	5.0	3.0	15.0
57	16.0	5.4	3.3	10.0
58	7.6	5.7	3.6	15.0
59	3.8	6.0	3.9	25.0
60		6.3		35.0
61		6.7		30.0
62		7.0		35.0
63		7.3		40.0
64		7.6		45.0
65		8.0		150.0
66		8.5		125.0
67		9.1		100.0
68		9.7		100.0
69		10.4		400.0
70				1000.0



SCHEDULE 5

Rates of Mortality after Service Retirement

PER THOUSAND

<u>Age</u>	<u>Male</u>	<u>Female</u>
55	18.36	9.33
56	19.30	10.04
57	20.34	10.81
58	21.46	11.65
59	22.69	12.58
60	24.03	13.58
61	25.50	14.67
62	27.09	15.87
63	28.82	17.17
64	30.71	18.59
65	32.77	20.13
66	35.01	21.82
67	37.45	23.65
68	40.11	25.65
69	43.00	27.83
70	46.15	30.20
71	49.57	32.78
72	53.30	35.59
73	57.34	38.64
74	61.74	41.97
75	66.52	45.59
76	71.70	49.52
77	77.33	53.80
78	83.44	58.44
79	90.05	63.49

(Continued on next page)

SCHEDULE 5

Rates of Mortality after Service Retirement

PER THOUSAND  
(Continued)

<u>Age</u>	<u>Male</u>	<u>Female</u>
80	97.22	68.96
81	104.99	74.90
82	113.38	81.34
83	122.45	88.32
84	132.26	95.88
85	142.82	104.05
86	154.22	112.89
87	166.47	122.44
88	179.66	132.75
89	193.81	143.86
90	208.96	155.83
91	225.21	168.70
92	242.52	182.54
93	261.02	197.36
94	280.68	213.24
95	301.51	230.22
96	323.61	248.33
97	347.01	267.61
98	371.39	288.11
99	397.16	309.80
100	424.08	332.71
101	451.68	357.00
102	480.84	382.20
103	512.92	409.04
104	537.88	436.54
105	573.77	465.26
106	615.38	494.09
107	600.00	525.29
108	750.00	557.38
109	1000.00	592.59
110		636.36
111		1000.00

SCHEDULE 6

Rates of Mortality after Disability Retirement

1943 Disability Table

PER THOUSAND

<u>Age</u>	<u>Rate of Mortality</u>	<u>Age</u>	<u>Rate of Mortality</u>
25	39.1	55	41.6
26	34.4	56	42.6
27	32.9	57	43.6
28	31.9	58	44.8
29	31.5	59	46.2
30	31.4	60	47.6
31	31.5	61	49.1
32	31.6	62	50.7
33	31.8	63	52.5
34	31.9	64	54.4
35	32.1	65	56.3
36	32.3	66	58.6
37	32.5	67	61.2
38	32.7	68	63.5
39	32.9	69	66.4
40	33.2	70	69.4
41	33.5	71	72.5
42	33.8	72	75.9
43	34.1	73	79.6
44	34.5	74	83.6
45	34.9	75	87.9
46	35.4	76	92.5
47	35.9	77	97.6
48	36.4	78	102.9
49	37.0	79	108.5
50	37.6		
51	38.3		
52	39.0		
53	39.8		
54	40.6		