R E P O R T

on the

SECOND ACTUARIAL EVALUATION

OF THE

STATE EMPLOYES' RETIREMENT SYSTEM
OF THE COMMONWEALTH OF PENNSYLVANIA

For the Period

June 1, 1931 to May 31, 1935

George A. Huggins, Actuary
Witherspoon Building
Philadelphia, Pa.
January - 1936

GEORGE A. HUGGINS
CONSULTING ACTUARY
1025 WITHERSPOON BUILDING
PHILADELPHIA

January 11, 1936

State Employes' Retirement Board

Commonwealth of Pennsylvania

Harrisburg, Pennsylvania

Gentlemen:

I have the honor to present herewith the report on the second evaluation of the State Employes' Retirement System for the period of operation beginning June 1, 1931 and ending May 31, 1935.

Respectfully submitted,

George A. Huggins

Actuary

GAH:HMS

7c

REPORT

on the

SECOND ACTUARIAL EVALUATION OF THE STATE EMPLOYES' RETIREMENT SYSTEM OF THE COMMONWEALTH OF PENNSYLVANIA FOR THE PERIOD JUNE 1, 1931 to MAY 31, 1935

Under the Act, establishing the State Employes' Retirement System, provision is made for periodical actuarial evaluations. This is the second of such evaluations and it covers the period June 1, 1931 to May 31, 1935 but the data relating to the experience of the Retirement System during the period January 1, 1924 to May 31, 1931, upon which the first evaluation was based, has also been included in these studies so that in fact this evaluation covers the first eleven (11) years and five (5) months of the operation of the Retirement System.

PURPOSES OF THE EVALUATION

When a retirement system is first put into operation, it has no experience of its own upon which to base the cost of the benefits to be provided, therefore, it is necessary for the Board, upon the advice of the actuary, to adopt certain tables as a basis for the required calculations.

These tables are generally standard tables of mortality and disability, but it is rarely possible to get any parallel experience on rates of withdrawal, or rates of superannuation, therefore, for the actuarial safety of the plan, whatever assumptions are made along these lines, must of necessity be on a most conservative basis.

After the system has been in operation for some time, it becomes possible, through periodical evaluations, to determine, from the actual experience of the system, its own rates of mortality among active, superannuated and disabled lives, as well as rates of disability, superannuation, voluntary and involuntary withdrawal from service.

The results of the first and second evaluations are exceedingly important, but they are, of course, still subject to conditions incident to the early years of the system, where the majority of the members were original members, and the minority were new members. However, the various trends become more and more apparent and, even though it is not yet possible to completely shift the operation of the system on to its own service tables, nevertheless the experience can be taken into consideration in the matter of rates of contributions, from the standpoint of the member and the State, and in the valuations to determine the prospective assets and liabilities of the Retirement System.

THE OBJECTIVES OF THE EVALUATION

The evaluation covers the following objectives:

(1) Salary Scales; based upon the salaries received by the active members of the system both original and new.

(2) The Rate of Mortality among Active Members; based upon the lives exposed and the actual deaths occurring among active members.

(3) The Rate of Disability among Active Members; based upon the lives exposed and the actual retirements on account of disability occurring among active members.

(4) The Rate of Withdrawal from Service; based upon the lives exposed and the actual withdrawals from active service for causes other than death, disability or superannuation (NOTE - Special study was made of the rates of involuntary withdrawal and the annuities granted thereupon).

(5) The Rate of Superannuation; based upon the lives exposed and the members who retired and were granted superannuation retirement allowances.

(6) The Rate of Mortality among Superannuated Lives; based upon the lives of members to whom superannuation retirement allowances had been granted and the deaths occurring among those lives.

(7) The Rate of Mortality among Disabled Lives; based upon the lives of members to whom disability retirement allowances had been granted and the deaths occurring among those lives.

(8) The Preparation of complete Life and Service Tables; based upon the rates determined as above Outlined.

(9) The Preparation of Monetary Tables, to be used as a basis of determining the actuarial equivalents of the prospective assets and liabilities of the Retirement System, as of May 31, 1935.

(10) The Valuation of the Several Assets and Liabilities of the Retirement System; based upon the monetary tables prepared.

(11) The study of the basis for determining the required appropriations from the Commonwealth for the several funds.

PREPARATION OF DATA

A card was prepared for each active member of the Retirement System, showing, among other items, the membership number; the year of birth of the member; the age at entering State service; the calendar year of entering State service; the sex of the member; the years of service prior to January 1, 1924--if an Original Member; the salary basis for each year of service; and the classification of membership--whether Schedule I (1-160th basis) or Schedule II (1-100th basis). These cards were prepared from the original records in the office of the Retirement Board.

In the case of a terminated membership, the card also showed the date of the termination of membership; and the cause of termination, such as, retirement on account of superannuation or disability, death, withdrawal and dismissal, whether voluntary or involuntary.

In the case of an annuitant or beneficiary member, full data as to the annuity was furnished such as: the date of entering upon the annuity; the kind of annuity, whether a superannuation retirement allowance, or a disability retirement allowance, or an involuntary withdrawal allowance; the amount of the Member's and State's annuity; and the options selected.

STUDIES BY SEX

The data was studied separately by sex. However, the actual experience showed no marked differences by sex, as revealed in the unadjusted rates of withdrawal, death and disability among the active members. Furthermore, the data was rather meagre, particularly as to deaths and disabilities, when separated by sex. It seemed best, therefore, to combine the exposures and the actual deaths, disabilities and superannuations, and to prepare rates for the membership as a whole. This is in accordance with the practice of the system heretofore in that the same percentages for salary deductions have been used for male and female lives, and the same factors for determining the amounts of retirement allowances.

LIVES EXPOSED TO RISK

The total exposure to risk of the active members, for the entire period of the operation of the system, was very carefully compiled, and determined to be as shown in Exhibit A. The total exposure expressed in life-years is 119,594.5. The lives exposed to risk run from age 14 to age 90, inclusive. The largest exposure at a given age was that for age 25--4,829 years. This is the same status as if 4,829 lives at age 25 worked one year for the State. The number of life-years of exposure at ages higher than 24 dropped off gradually and with a surprising degree of regularity, until all the way up to age 90. This is the exposure among active members. The total number of lives involved in the whole study is 26,764 so that the average number of years of service is 4.5.

SALARY SCALES

In Exhibit B, we show ungraded average salary scales, according to attained ages. The salaries used in this study were those shown by the individual cards, as of May 31, 1935. The average salary for the original members was $2,143; for the new members, $1,405; and for all members, $1,620.

THE RATE OF MORTALITY AMONG ACTIVE MEMBERS

The rates of mortality, according to the American Men Ultimate Table of Mortality, were applied to the exposures at each age, up to and including age 69, and resulted in total expected deaths among the active members—during the period under observation—amounting to 997.98. The actual number of deaths among active members during this period was 489. The ratio of the actual to the expected deaths was 48.999%. Therefore, the American Men Ultimate Table, 48% modified, was adopted as the table of mortality among active lives. While this meant slight variations from the experience table, at different ages, nevertheless, the variations were not material, and, for the exposure as a whole, it represented practically the actual experience. The rates of mortality arrived at by this method are shown in Exhibit C.

It is of very great interest to note that the ratio of the actual to expected deaths on the same basis as described above obtained in the first evaluation was 48.98% whereas, the ratio shown by this study is 48.999%. In view of the fact that the data, upon which this study was made, includes that of the first study, this means that the death rate during the later four-year period was identical with that during the first seven (7) years and five (5) months for there is practically no change in the ratio shown by the accumulated data. In other words, the experience for the entire period is as nearly identical as it could be with the experience for the first period. However, in order to be conservative, the ratio was taken at 48%, thus allowing a margin for possible further slight reductions in the mortality, if any.

THE RATE OF DISABILITY AMONG ACTIVE MEMBERS

Processes, similar to those followed in arriving at the experience rate of mortality, were used in arriving at a rate of disability.

Hunter's Rate of Disability was applied to the exposures at each age, up to and including age 59, and, as a result, there was shown the total number of disabilities expected, amounting to 105.57 whereas, the actual number of disability retirement allowances granted during the period was 108; a ratio of actual to expected disabilities of 102.3%. Here, again, the variations from this table at the different ages were not material, so 105% of the Hunter's Table was adopted as the disability experience table of the system. The modified table used is shown in Exhibit C.

As in the case of the rate of mortality among active members, the rate of disability among active members shown by this study, which included the data used in the first study, reveals only a slight change

in the ratio of actual to expected disabilities. The ratio based upon the accumulated date is, as shown above 102.3% as contrasted with 106.6% for the earlier period, hence the adoption of the Hunter rates with a modification of 105% leaves a margin for a less favorable rate in the future, if that should develop.

THE RATE OF WITHDRAWAL FROM SERVICE

The actual withdrawals were scheduled according to ages at the date of withdrawal, and compared with the exposures at each age. The ratios obtained gave an unadjusted withdrawal rate. This rate was then adjusted or graduated by graphic method and the adjusted rates were adopted as the experience rates. These are also shown in Exhibit C.

The withdrawal rate is expressed as a ratio or percentage of the exposed to risk at each year. It begins at 5.52% at age 15, increases steadily up to age 23, where it reaches 14.95%; then gradually reduces, falling below 10% at age 32; and is below 7% by the time age 59 is reached. The average withdrawal rate for the group as a whole, under age 60, was 9.61%.

This is a high average withdrawal rate for a group of employes and shows an increase from the previous rate of 8.22%. The general effect of increased withdrawal rates is to reduce the number of employes continuing in service and surviving undisabled to become eligible for superannuation allowances. This, of course, reduces somewhat the cost of providing the State superannuation annuities although the effect is somewhat modified by an increased rate of involuntary withdrawal which, of course carries with it the granting of involuntary withdrawal annuities.

The peak of the withdrawal rate was 14.95% at age 23 as contrasted with a peak of 14.25% at age 24 as shown in the previous studies.

For the purposes of this study, the withdrawal rate was limited to active members under 60 years of age, because 60 is the minimum age for superannuation retirement and, thereafter, anyone leaving service would normally be classed as retired on account of superannuation, rather than as having withdrawn by resignation or dismissal.

The rates of withdrawal obtained from the combined membership are somewhat higher than those experienced by the group solely of Original Members, and lower than those of the group solely of New Members. In this study, there were included 11,550 withdrawals from active service under age 60.

THE RATE OF SUPERANNUATION

Various studies were made, based upon the age of superannuation retirement, after attaining the minimum retirement age of 60. Because there is no compulsory retirement age provided in the Retirement System, there were some few cases where service was continued beyond age 70. The total number of members continuing in service beyond age 70 was not material. For the purposes of this study and with a view to

conservatism as to future superannuation costs, therefore, it was assumed that all employes would be retired by age 70, and the rate of superannuation was calculated accordingly.

The experience of the four-year period under study when combined with that of the previous seven (7) years and five (5) months shows a higher rate of superannuation particularly in the earlier years following the minimum retirement age 60; i. e., such as ages 61 and 62. This, no doubt, is due largely to withdrawals from service that might be classed as involuntary and would have entitled the members to involuntary retirement allowances, if they had retired prior to attaining age 60. The increase in the superannuation rate naturally increases the cost of the superannuation allowances granted and to be granted.

THE RATE OF MORTALITY AMONG SUPERANNUATED LIVES

A study was made of the rate of mortality among the lives which had been retired on account of superannuation. The table of mortality used in calculating the amounts of the members' annuities was the McClintock Table of Mortality Among Male Lives, with interest at 4% and corrected on account of the monthly instalment payments.

The total life-years of exposure among superannuated lives were 2,315.75 male, and 792.75 female; a combined total of 3,108.50.

The total number of deaths expected, according to the McClintock Table of Mortality (Male) was 215.12, as against an actual of 235 ; a ratio of 109.24% of actual to expected deaths. In view of the fact that there is no marked deviation from the table, it seems best to recommend the continuance of the McClintock Male Table, as a basis for calculations, at least until the results of further experience and studies are available.

RATE OF MORTALITY AMONG DISABLED LIVES

There were 33 deaths among disabled lives, as contrasted with 39.72, expected according to Hunter's Table of Mortality Among Disabled Lives, a ratio of 83.08%. While the total exposure was only 406.5 life years, nevertheless, the trend indicated a rather lower rate of mortality than this standard table, therefore, a modification of this table has been adopted by using 80% of the table as a conservative basis.

It will be noted that the rate of the incidence of disability claims was somewhat higher than the standard table, but the death rate among the disabled lives was somewhat lower. Both tables have been adjusted accordingly, that among active lives 105% of the table and that among the disabled lives 80%.

LIFE AND SERVICE TABLES

Complete tables, showing the number surviving each year, out of 100,000 lives entering at age 15, were then prepared, based upon the graded rates of withdrawal, death, disability and superannuation, as

above described.

In Exhibits D and E the number of entrants is shown for each age, as well as the number of withdrawals, deaths and disabilities. For example: If 100,000 persons entered the service of the State at age 15, some would pass out of active service each year through death, through disability, through withdrawal from service or through superannuation. As each age is attained, some of the original number would continue in service, not having previously died, become disabled, withdrawn from service, or having become superannuated.

The experience of the fund shows that during the past eleven (11) years and five (5) months, out of 100,000 employes at age 15, 97,026 of them would withdraw from service, voluntarily or involuntarily, before reaching age 60; 1,784 of them would die; 307 would become disabled and there would only be 883 of the 100,000 employes who would still be in service upon reaching age 60.

There have actually been 11,550 who withdrew before reaching age 60 and 161 of these have been granted involuntary withdrawal annuities of which there are now 150 still being paid. The reason for the low number of involuntary withdrawal annuities which are being paid in proportion to the number of withdrawals is because the greatest number of withdrawals take place at the youngest ages before the requirements for an involuntary withdrawal annuity have been met; i. e., ten (10) years of service.

The reason for the separation of the life and service tables, at ages 60 and 69, inclusive, from the lives under age 60, is that 60 is the minimum retirement age for superannuation, and for the purposes of this study, age 70 has been assumed as a limiting retirement age. Therefore, in the period 60 to 69, inclusive, there are lives passing out of active service only through death and superannuation, rather than from death, withdrawal and disability as is the case when under age 60.

MONETARY TABLES

Monetary Tables were prepared from the life and service tables by combining them with interest factors at the rate of 4%. From these tables were obtained regular commutation factors, and the factors derived therefrom to be used in determining rates of contribution and in making the valuation of the several asset and liability items.

THE REQUIRED APPROPRIATIONS OF THE COMMONWEALTH FOR THE SEVERAL FUNDS

Under the provisions of the Retirement System, each biennium the Commonwealth appropriates funds to it. These funds are required to provide, on a reserve basis, the State's share of the cost of the retirement allowances; that is, the State annuities payable upon retirement to the members of the Retirement System.

The membership of the Retirement Association is divided into two classes; Original Members and New Members. The State makes separate appropriations for each such class of members, because of the difference in the method of funding the State's share of the cost of the retirement allowances to such members.

STATE ANNUITY RESERVE ACCOUNT NUMBER TWO

In the case of the Original members, appropriations are made so that, on June 1st of each year, a payment is made into the Reserve Account maintained out of the State funds for the benefit of the Original members. This account is designated as "State Annuity Reserve Account Number Two".

The basis established when the Retirement System was put into operation upon which the appropriations are made, to determine the State's liabilities and its yearly contributions, is such that at the end of the 25-year period, the State's contributions would have met all accruing obligations against this fund up to that time, and there would be a sufficient balance left to take care of the State annuities in the future, without further appropriations.

The appropriation made for the biennium, June 1, 1931 to May 31, 1933 was $1,050,000 and a like amount was appropriated for the biennium June 1, 1933 to May 31, 1935; for the current biennium June 1, 1935 to May 31, 1937 the appropriation is $1,000,000. Since these appropriations are paid in annual instalments as of June 1, the current annual payment to the State Annuity Reserve Account Number Two, on account of the Original members is $500,000.

The financial statement shows that as of May 31, 1935, there was a balance of $4,478,242.46 in this account as contrasted with reserves required on account of the State Annuities to Original members on the retirement roll as of that date aggregating $4,263,869. There is, therefore, an excess in this account of $214,373.46 held to provide for reserves on similar State Annuities entered upon in future years.

As a result of this evaluation and the current valuation based upon the new factors, it would appear that the continuation of the same amount of the appropriation required for this biennium--$1,000,000 would suffice during the remaining years of the period of financing the state's obligation on account of the Original members. In other words, it does not seem likely that the Board will have to ask for appropriations for this account in excess of the $500,000 yearly amount. Although it may be necessary to extend for one or more years the appropriation period beyond the 25-year period originally contemplated when the retirement system was inaugurated; but it seems better to extend this period rather than to increase the amount of the appropriations to this account for the reason that after this accumulation period is completed, appropriations to this account, because of Original members will no longer be required and the only appropriations needed for benefits will be those required for the Contingent Fund as to New members.

This extension of the 25-year period originally contemplated is due to the fact that the system has been reopened five (5) times for Original members and it also opened for the judges in the place of the original state retirement system for judges.

Furthermore, in 1933, the privilege was granted to members to change from the 1-160th class to the 1-100th class. Then, also, in 1935

the retirement system was opened to the employes of the staff of State College but the effect of the latter does not appear in the current valuation for the reason that the members of the staff of State College who have entered the system have come in since June 1, 1935; i. e., during the current fiscal year.

All of these changes have added to the aggregate cost of the State Annuities to be provided to Original members but these added costs have been absorbed in the current appropriations.

The value of a contributory reserve retirement system is very clearly emphasized through the operation of the retirement system during its eleven (11) years and five (5) months. As shown in Schedule L of the valuation report, the State Annuities, in force, in connection with the 860 annuities amounted to $534,556.15 which is already in excess of the current appropriations of $500,000 annually. In other words, by building reserves in its early years when the State annuity roll was small, the retirement system is now able to pay State annuities in excess of the current appropriations and to face a continually increasing State annuity roll to the Original members until the peak is reached at some future date without having to ask for increased appropriations. Under a Cash Disbursement System, the appropriations would have been small in the early years of the System, when the State Annuity roll was small but would have grown each biennium as the annuity roll grew until the required appropriations would considerably exceed those which are now being made.

CONTINGENT RESERVE ACCOUNT

The appropriations of the Commonwealth to be applied towards maintaining, on a reserve basis, the Commonwealth's share of the cost of the retirement allowances for the New members; that is, the State annuities, are credited to an account designated as the "Contingent Reserve Account".

In view of the fact that new employes are coming continuously into membership under the System, it becomes necessary for the Commonwealth's share of the cost of providing the State annuities for New members to be continuously provided for.

The New members will ultimately constitute the entire body of members but this, of course, will be at a rather remote date. As a result of the evaluation, there has been developed, as noted hereinbefore, service tables. The rate of withdrawal from service has a considerable effect on the amount of the State's contributions. There has been a record of heavy withdrawals from service among the New employes, chiefly because the majority of them are young people, at the time of entering State service.

The appropriation made for the current biennium; that is, for the period June 1, 1935, to May 31, 1937 is $550,000 payable in quarterly instalments of $137,500 each as of July 1, 1935; January 1, 1936; July 1, 1936; January 1, 1937.

As a result of the evaluation and the current valuation, it is

apparent that the future appropriations required from the State for the Contingent Account will not be of any considerable moment. Even for the current biennium where the total salaries of the 10,833 members on the roll as of May 31, 1935 amount to $15,449,477, the annual appropriation of $275,000 is but 1.78% of the payroll and this may reduce in the future to as low as 1%.

HISTORY OF THE RETIREMENT SYSTEM

The State Employes' Retirement System was established by the Act of June 27, 1923, making the System operative as of January 1, 1924. All employes of the Commonwealth, taking membership on or before December 31, 1924, were classed as Original Members. All entering the service of the State on and after January 1, 1925, have been classified as New Members.

The Act of March 29, 1927, opened the System to Original Members, who had not qualified for membership, provided they took membership prior to January 1, 1929, with the understanding that member's dues would be paid back to January 1, 1924. The establishing Act had allowed those eligible for original membership until June 1, 1925, to enter.

The Act of April 26, 1929, opened the System to judges, with the provision that judges taking office, or entering upon a new term on and after January 13, 1930, would be classed as New Members, unless they had previously qualified as Original Members in the case of service prior to that date. The System was again opened to Original Members, by this Act, up to October 1, 1929.

The Legislature of 1931 opened the System to employes paid salaries out of State funds, such as the secretaries in judges' offices, even though not appearing directly on the payroll. The System was again opened to Original Members for the balance of the year 1931.

The Legislature of 1933 reopened the Retirement System to Original members for the balance of the year 1933.

The Legislature of 1935 opened the Retirement System to all officers and employees of the Pennsylvania State College, other than those paid wholly from Federal funds.

The Retirement system was reopened to Original members for the balance of the year 1935.

EMPLOYES' RETIREMENT SYSTEMS IN OTHER STATES

In a recent survey of the operation of retirement systems for public employes other than teachers, it was shown that retirement systems were in operation in the following states: California, Colorado, Connecticut, Maine, Massachusetts, Minnesota, New Jersey and New York.

In some states, specified classes of employes are covered, such as members of the Supreme Court, employes of certain state institu-

tions, such as such as schools and prisons. In several states, the question of establishing adequate contributory reserve retirement systems for the state employes has been under consideration by legislatures, or legislative commissions, with a view to their establishment at an early date.

The Pennsylvania System is generally regarded as outstandingly successful, and its provisions are carefully studied by those who are considering the establishment of retirement systems in other states.

VALUATION BALANCE SHEET

The Valuation Balance Sheet, as of May 31, 1935, showing the several assets and liabilities of the Retirement System, based upon the new service and monetary tables, developed as the result of this evaluation, is shown on the following pages.

NOTE - The complete Valuation Balance Sheet and the supporting schedules and explanatory notes are shown in a separate report filed under date of January 6, 1936.

VALUATION BALANCE SHEET

SHOWING FINANCIAL CONDITION OF STATE EMPLOYES' RETIREMENT SYSTEM

AS OF MAY 31, 1935

F U N D B A L A N C E S

Present Fund Balances of Retirement System			
Creditable to:			
Members' Annuity Savings Account		$ 7,402,652.98	
Members' Annuity Reserve Account	$852,916.14		
Plus Adjustment	13,102.86	866,019.00	
State Annuity Reserve Account No. 2		4,478,242.46	
State Annuity Reserve Account	30,092.92		
Plus Adjustment	4,154.08	34,247.00	
Contingent Reserve Account		2,539,098.99	
Total Balances Creditable		$15,320,260.43	
Present Fund Balances of Retirement System			
Not Creditable to Accounts		354,431.97	
Due Beneficiaries		907.97	
Annuities Due and Unpaid		7,622.23	
Accounts Payable - Unpaid Expenses on Real Estate		91.88	
TOTAL PRESENT BALANCES			$15,683,314.48
Present Value of Prospective Assets			
Creditable to:			
State Annuity Reserve Account No. 2		$ 6,426,682.54	
Contingent Reserve Account		249,733.01	
Total Assets Creditable		$ 6,676,415.55	
Deduct:- Reserve for Surplus of Accumulated Earnings held for Revaluation of Investments or Reduction of Present Value of Prospective Contributions Payable by the State	$371,688.91		
Less $13,102.86 transferred to Members' Annuity Reserve Account and $4,154.08 transferred to State Annuity Reserve Account	17,256.94	354,431.97	
Net Present Value of Prospective Assets			6,321,983.58
TOTAL FUND BALANCES AND PROSPECTIVE ASSETS			$22,005,298.96

VALUATION BALANCE SHEET SHOWING FINANCIAL CONDITION OF STATE EMPLOYES' RETIREMENT SYSTEM AS OF MAY 31, 1935

L I A B I L I T I E S

Present Value of Members' Annuities now payable from Members' Annuity Reserve Account, as a result of members' contributions transferred to that account:			
Superannuation.....		$504,666.00	
Disability.....		88,234.00	
Withdrawal.....		273,119.00	
TOTAL MEMBERS' ANNUITY RESERVE ACCOUNT -			$ 866,019.00
Present Value of State Annuities payable to Original Members from State Annuity Reserve Account No. 2, as a result of contributions made by the State:			
State Annuities to Original Members now on Retirement Roll -			
Superannuation.....	$3,161,261.00		
Disability.....	240,468.00		
Withdrawal.....	862,140.00		
Total.....		$4,263,869.00	
State Annuities to Original Members now in Active Service, who may remain to receive annuities -			
Superannuation.....	$6,052,470.00		
Disability.....	128,210.00		
Withdrawal.....	460,376.00		
Total.....		6,641,056.00	
TOTAL STATE ANNUITY RESERVES - ORIGINAL MEMBERS -			10,904,925.00
Present Value of State Annuities payable to New Members now on Retirement Roll from State Annuity Reserve Account, as a result of contributions made by the State:			
Superannuation.....		11,519.00	
Disability.....		22,728.00	
Withdrawal.....		-	
TOTAL STATE ANNUITY RESERVES - NEW MEMBERS (RETIRED)			34,247.00
Present Value of State Annuities payable to New Members now in Active Service from the Contingent Reserve Account as a result of contributions made by the State:			
Superannuation.....		$1,941,443.00	
Disability.....		328,315.00	
Withdrawal.....		519,074.00	
TOTAL STATE ANNUITY RESERVES - NEW MEMBERS (ACTIVE)			2,788,832.00

VALUATION BALANCE SHEET SHOWING FINANCIAL CONDITION OF STATE EMPLOYES' RETIREMENT SYSTEM AS OF MAY 31, 1935

L I A B I L I T I E S
(continued)

Present Value of Benefits on account of which contributions have been accumulated to date in the Members' Annuity Savings Account.....		$ 7,402,652.98
Miscellaneous Liabilities		
Due Beneficiaries.....	$ 907.97	
Annuities - Due and Unpaid.....	7,622.23	
Accounts Payable - Unpaid Expenses on Real Estate.....	91.88	8,622.08
TOTAL LIABILITIES -		$22,005,298.06

Exhibit A.

LIVES EXPOSED TO RISK

Attained Age	Total Exposure	Attained Age	Total Exposure
14	2.00	52	1693.75
15	19.25	53	1599.25
16	83.00	54	1466.25
17	270.25	55	1370.50
18	793.25	56	1311.00
19	1651.25	57	1231.50
20	2539.25	58	1178.50
21	3316.00	59	1127.50
22	4049.00	60	1063.25
23	4608.00	61	970.75
24	4780.50	62	857.50
25	4829.00	63	774.00
26	4712.00	64	684.50
27	4475.00	65	608.00
28	4179.00	66	537.75
29	3893.75	67	472.25
30	3576.50	68	419.75
31	3367.50	69	372.50
32	3174.75	70	330.75
33	3019.00	71	291.75
34	2941.25	72	247.25
35	2863.75	73	203.00
36	2821.50	74	174.25
37	2743.75	75	138.75
38	2652.75	76	111.00
39	2590.00	77	80.25
40	2535.50	78	62.25
41	2469.50	79	51.00
42	2368.00	80	44.00
43	2266.50	81	34.25
44	2236.25	82	25.25
45	2193.25	83	18.00
46	2138.25	84	9.50
47	2048.75	85	6.25
48	2012.50	86	2.50
49	1991.25	87	2.25
50	1970.25	88	2.50
51	1837.50	89	2.00
		90	.50
		Total	119,594.50

Exhibit B.

AVERAGE SALARY

Attained Age	ORIGINAL MEMBERS Average Salary	NEW MEMBERS Average Salary	Attained Age	ORIGINAL MEMBERS Average Salary	NEW MEMBERS Average Salary
14	$ -	$1140	50	$2663	$1618
15	-	-	51	2289	1656
16	-	660	52	2338	1618
17	-	744	53	2468	1530
18	-	716	54	2786	1761
19	-	673	55	2499	1716
20	-	772	56	2038	1497
21	-	799	57	2476	1893
22	-	920	58	2817	1882
23	-	1019	59	2101	2177
24	-	1064	60	2453	2022
25	-	1117	61	2887	1314
26	1080	1208	62	2172	2130
27	1020	1267	63	2898	1341
28	1293	1330	64	2641	2583
29	1394	1387	65	2988	1932
30	1384	1416	66	2860	1344
31	1497	1523	67	4158	2942
32	1584	1571	68	4016	1643
33	1788	1570	69	3952	1409
34	1700	1525	70	2942	2100
35	1739	1561	71	2438	700
36	1792	1650	72	4097	1200
37	1830	1578	73	3737	-
38	1867	1776	74	1350	2220
39	2274	1581	75	4790	1600
40	2322	1733	76	1485	500
41	2246	1609	77	4592	-
42	2161	1602	78	1686	-
43	2233	1655	79	1920	3000
44	2134	1806	80	1530	-
45	2069	1640	81	2070	-
46	2141	1615	82	-	-
47	2689	1818	83	8540	960
48	2089	1680	84	9000	-
49	2555	1833	85	900	-

Exhibit C.

RATES OF DEATH, DISABILITY, WITHDRAWAL, and SUPERANNUATION BASED UPON THE EVALUATIONS

Attained Age	Death	Disability	Withdrawal	Attained Age	Death	Disability	Withdrawal	Superannuation
15	.0017		.0552	43	.0033	.0011	.0762	
16	.0017		.0853	44	.0036	.0011	.0752	
17	.0017		.1123	45	.0038	.0012	.0747	
18	.0018		.1264	46	.0041	.0013	.0742	
19	.0018		.1344	47	.0044	.0014	.0737	
20	.0019	.0005	.1419	48	.0048	.0015	.0732	
21	.0019	.0005	.1464	49	.0051	.0016	.0727	
22	.0020	.0005	.1484	50	.0056	.0018	.0722	
23	.0020	.0006	.1495	51	.0060	.0019	.0717	
24	.0020	.0006	.1474	52	.0065	.0021	.0712	
25	.0021	.0006	.1434	53	.0071	.0023	.0707	
26	.0021	.0006	.1354	54	.0077	.0026	.0702	
27	.0021	.0006	.1274	55	.0084	.0029	.0697	
28	.0021	.0006	.1204	56	.0091	.0033	.0692	
29	.0021	.0006	.1133	57	.0099	.0037	.0687	
30	.0021	.0006	.1083	58	.0108	.0042	.0682	
31	.0022	.0006	.1033	59	.0118	.0049	.0677	
32	.0022	.0006	.0978	60	.0128			.1100
33	.0022	.0006	.0933	61	.0139			.1200
34	.0023	.0007	.0903	62	.0152			.1150
35	.0023	.0007	.0873	63	.0165			.1185
36	.0024	.0007	.0853	64	.0179			.1230
37	.0025	.0007	.0833	65	.0195			.1290
38	.0026	.0008	.0817	66	.1212			.1350
39	.0027	.0008	.0802	67	.0231			.1405
40	.0028	.0009	.0792	68	.0250			.1465
41	.0030	.0009	.0782	69	.0272			.1535
42	.0031	.0010	.0772					

Exhibit D.

LIFE AND SERVICE TABLES

Age	Entrants	Deaths	Disabilities	Withdrawals
15	100,000	166		5,516
16	94,318	159		8,041
17	86,118	159		9,674
18	76,285	136		9,641
19	66,508	122		8,939
20	57,447	108	31	8,153
21	49,155	95	27	7,198
22	41,835	83	23	6,210
23	35,519	71	20	5,308
24	30,120	61	17	4,441
25	25,601	53	14	3,672
26	21,862	46	12	2,960
27	18,844	40	11	2,400
28	16,393	35	9	1,973
29	14,376	31	8	1,629
30	12,708	27	7	1,377
31	11,297	24	7	1,167
32	10,099	22	6	988
33	9,083	20	6	847
34	8,210	18	5	741
35	7,446	17	5	650
36	6,774	16	5	577
37	6,176	15	5	514
38	5,642	14	4	461
39	5,163	14	4	414
40	4,731	13	4	375
41	4,339	13	4	318
42	4,004	13	4	309
43	3,678	12	4	280
44	3,382	12	4	254
45	3,112	12	4	233
46	2,863	12	4	212
47	2,635	12	4	194
48	2,425	12	4	178
49	2,231	11	4	162
50	2,054	11	4	148
51	1,891	11	4	136
52	1,740	11	4	124
53	1,601	11	4	113
54	1,473	11	4	103
55	1,355	11	4	94
56	1,246	11	4	86
57	1,145	11	4	79
58	1,051	11	4	72
59	964	11	5	65
60	883			

Exhibit E.

LIFE AND SERVICE TABLES

Age	Entrants	Deaths	Superannuations
60	100,000	1,281	11,000
61	87,719	1,222	10,526
62	75,971	1,152	8,737
63	66,082	1,090	7,831
64	57,161	1,025	7,031
65	49,105	959	6,335
66	41,811	887	5,644
67	35,280	813	4,957
68	29,510	739	4,323
69	24,448	665	23,783